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Semantic Requirements for the VN-*o Suru* Construction in Japanese

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1. Introduction

Japanese has two types of Verbal Noun construction (hereafter, VN-construction) as shown in the following examples.

(1) a. Kumiko-ga eigo-no BENKYOO-o sita.
Kumiko-Nom English-Gen study-Acc *suru*-Past
'Kumiko studied English.'

b. Kumiko-ga eigo-o BENKYOO-sita.
Kumiko-Nom English-Acc study-*suru*-Past
(same as (1a))

One of the VN-constructions (exemplified in (1a)) involves a Sino-Japanese Verbal Noun (VN) which is marked with the accusative Case marker *-o* and a light verb *suru* 'do', taking the VN as an argument NP. Nearly the same proposition can also be expressed in the other type of VN-construction, as in (1b), where the VN is apparently incorporated to the verb *suru*. Throughout this paper, we refer to the unincorporated type of VN-construction (as (1a)) and the incorporated type (as (1b)) as 'VN-*o suru*' construction and 'VN-*suru*' construction, respectively.

There are, however, some exceptions to the alternation between the VN-*o suru* and the VN-*suru* construcitons. Not all VNs in Japanese can appear in those two types of VN-construction. It has often been pointed out in the literature that the VN-*o suru* construction is more restricted in its distribution than the VN-*suru* construction. In this study, I will discuss two semantic requirements for the VN-*o suru* construction. [1]

This paper is organized as follows. In section 2 we will briefly present Miyagawa's (1989) analysis of the VN-constructions. Section 3 will present some 'exceptional' data which do not fall within Miyagawa's analysis. In section 4 we will provide two semantic requirements for the VN-*o suru* construciton, the second of which will be further divided into (at least) two. The last section makes concluding remarks.

2. Miyagawa's (1989) Analysis

Miyagawa (1989) proposes a syntactic analysis of the distribution of the two types of VN-construction. In his analysis, Miyagawa begins by pointing out some

empirical problems with Grimshaw and Mester's (1988) analysis of the VN-constructions. Grimshaw and Mester argue for a process which they refer to as Argument Transfer. Before reviewing Miyagawa's (1989) analysis, let us firstly outline their Argument Transfer.

Grimshaw and Mester assume that the light verb *suru* has an empty argument structure and assigns accusative Case. (The empty argument structure is indicated with the empty space in parentheses below.)

(2) *suru*, V; ( ) <acc>

They argue that via the process of Argument Transfer, the light verb *suru* inherits the argument structure of the VN preceding it. Let us exemplify this process with the following pair of sentences, cited from Grimshaw and Mester (1988).

(3) a. John-wa murabito-ni ookami-ga kuru-to KEIKOKU-o sita.
John-Top villager-Dat wolf-Nom come-Comp warning-Acc *suru*-Past
'John warned the villagers that the wolf was coming.'

b. John-wa murabito-ni ookami-ga kuru-to KEIKOKU-sita.
John-Top villager-Dat wolf-Nom come-Comp warning-*suru*-Past
'John warned the villagers that the wolf was coming.'

The process of Argument Transfer, taking place in sentence (3a), is schematized as in (4). As a result of the process, in (4c) the light verb *suru* has inherited the argument structure of the VN.

(4) a. *keikoku* (Agent Goal Theme)

b. *suru* ( ) <acc>

c. *keikoku* ( ) + *suru* (Agent Goal Theme) <acc>

Let us start to review Miyagawa's (1989) analysis. Miyagawa points out that in the following pair of examples, which are cited as grammatical examples in Grimshaw and Mester (1988), the VN-*o suru* counterpart is marginal at best. (The judgment of each sentences is due to Tsujimura (1990)). [2]

(5) a.??Ya-ga mato-ni MEITYUU-o sita.
arrow-Nom target-Dat strike-Acc *suru*-Past
'The arrow struck the target.'

b. Ya-ga mato-ni MEITYUU-sita.
arrow-Nom target-Dat strike-*suru*-Past
'The arrow struck the target.'

This pair of VN-constructions proves that Grimshaw and Mester's 'unified' analysis is insufficient, and Miyagawa argues that the type of argument structure

of a VN plays a crucial role in the VN-*o suru* construction.

Miyagawa makes a simple generalization that while the VN-*suru* construction is allowed for any type of VN, the VN-*o suru* construction is possible only with the VN which does not have an ergative type of argument structure (including no external argument). Let us consider the examples in (5). The VN *MEITYUU* 'strike' has an ergative argument structure, taking only an internal argument (Theme). Since the verb *suru* in the VN-*o suru* construction has the accusative-Case assigning property, it is required to assign an external theta role to subject position (at the level of deep structure), which is induced by Burzio's Generalization in (6).

(6) Burzio's Generalization
[A]ll and only the verbs that can assign θ -role to the subject can assign (accusative) Case to an object. (Burzio 1986: 178)

As for the sentence (5a), however, the process of Argument Transfer fails to qualify the *suru* verb as a non-ergative type of verb, since the inherited argument structure from the VN does not contain an external argument but only an internal argument. Consequently, due to Burzio's generalization, the verb *suru* cannot assign accusative Case, becasue it does not have an external θ -role to assign to subject position. Then, making use of Burzio's generalization in (6), Miyagawa correctly predicts the unacceptability of sentence (5a). [3]

To sum up, Miyagawa has made a distinction between the ergative type and the non-ergative type of VN with respect to the possibility of the VN-*o suru* construction. The VN of the latter type (i.e., the transitive type and the un-ergative type of VN) can appear in the construction, because the verb *suru* can assign accusative Case (to the VN) and an external theta role to subject NP; on the other hand, the VN of the former type cannot, owing to Burzio's Generalization.

3. Problems

In the preceding section, we have seen that Miyagawa's (1989) observation that the Japanese VN-*o suru* construction is limited only to non-ergative types of VN. We will point out in this section that the fact is a little more complicated than what is predicted by his analysis. It will be clarified that in fact there are not a little 'exceptional' VNs of the non-ergative type; they are incompatible with the VN-*o suru* construction. Before the observation, we will introduce in 3.1 two

kinds of diagnostics to identify the type of a VN, which originate from Miyagawa (1989) and Tsujimura (1990). We will then observe problematic VNs of transitive type in 3.2 and of unergative type in 3.3.

3.1. Diagnostics

In order to identify the type of VN, we adopt two kinds of test: the Numeral Quantifier test and the Resultative Attribute test.

Miyagawa (1989) considers that the Numeral Quantifier (consisting of a numeral and a classifier; hereafter NQ) provides evidence to identify the type of a VN. The NQ test consists of two sub-tests: the NQ-leaving test and the NQ-scrambling test. The NQ-leaving test involves a VP-internal NQ which modifies the subject NP. This modification is expected under the Unaccusative Hypothesis (cf. Burzio (1986); Perlmutter (1979)). That is, if we assume NP-movement of the internal argument to subject position, leaving an NQ next to the trace of the moved NP, the subject NP and the VP-internal NQ can be linked to each other via the trace of the subject. [4] This test will then indicate whether or not the subject NP is derived from a VP-internal position. In the following examples, cited from Miyagawa (1989: 662f.), the VP-internal NQ can modify the subject of an ergative verb or a passivized verb ((7) and (8), respectively).

(7) Doa-ga [VP kono kagi-de 2-tu aita].
doors-Nom this key-with 2-cl opened
'Two doors opened with this key.'

(8) Yuube kuruma-ga [VP doroboo-ni 2-dai nusum-are-ta].
last night cars-Nom thief-by 2-cl stolen
'Last night, two cars were stolen by a thief.'

On the other hand, the subject NP of a transitive verb or an unergative verb cannot be the host of the VP-internal NQ (as exemplified in (9)), because the subject NP is not a derived one from a VP-internal position (next to the NQ).

(9)?*Kodomo-ga [VP kono kagi-de 2-ri doa-o aketa].
kids-Nom this key-with 2-cl doors-Acc opened
'Two kids opened a door with this key.'

The other test, the NQ-scrambling test also idenfifies the type of a VN. This test shows that an object-oriented NQ, but not a subject-oriented one, can undergo scrambling. Thus, scarmbled NQ can be linked with the object NP of a transitive verb (as in (10)) or with the subject of an ergative (as in (11)) or a passive verb, but not with the subject of a transitive verb or an unergative verb

(as in (12) and (13), respectively). Consider the following examples. (They are also cited from Miyagawa (ibid.: 663f.)).

(10) 2-tuu$_i$ Hanako-ga [$_{VP}$ tegami-o t_i okutta].
2-cl Hanako-Nom letters-Acc sent
'Hanako sent two letters.'

(11) *Ergative*
2-tu$_i$ kono kagi-de doa$_j$ -ga [$_{VP}$ t_j t_i aita].
2-cl this key-with doors-Nom opened
'Two doors opened with this key.'

(12) *2-ri$_i$ kaisya-ni zyuuyaku-ga t_i [$_{VP}$ zihyoo-o okutta].
2-cl company-to executives-Nom resignation letter-Acc sent
'Two executives sent resignation letters to the company.'

(13) *Unergative*
*3-nin$_i$ geragera-to kodomo-ga t_i [$_{VP}$ waratta].
3-cl loudly kids-Nom laughed
'Three kids laughed loudly.'

These are again expected under the Unaccusative Hypothesis. In (10) and (11) NQ-scrambling is fine because the traces are properly licensed. [5]

Turning to VN-construtions, if a VN is of the ergative type, we expect that it will pass both the NQ-leaving test and the NQ-scrambling test. On the other hand, if a VN is of the non-ergative type, either of the transitive type or of the unergative type, the VN will not pass either of them. Miyagawa (ibid.: 664f.) shows that this prediction is correct.

(14) Tokkyuu-ga [$_{VP}$ Uenoeki ni 5-dai TOOTYAKU-sita].
limited express-Nom Ueno station-to 5-cl arrival-*suru*-Past
'Five limited express trains arrived at Ueno station.'

(15) 5-dai, Uenoeki-ni tokkyuu-ga TOOTYAKU-sita koto
5-cl Ueno station-to limited express-Nom arrival-*suru*-Past fact
'the fact that five limited express trains arrived at Ueno station'

(16) *Gakusei-ga [$_{VP}$ benkyoo-o 3-nin sita].
students-Nom studying-Acc 3-cl *suru*-Past
'Three students studied.'

(17) *3-nin, benkyoo-o gakusei-ga sita.
3-cl studying-Acc students-Nom *suru*-Past
(same as (16))

In (14) the subject NP leaves a trace in the VP-internal position, and the trace and the NQ mutually c-command each other, hence the grammatical sentence (cf. note 4). On the other hand, the mutual c-command relation is not licensed in (16), because the VN *BENKYOO* 'studying' is of the unergative type and the subject leaves no trace within the VP. In (15), the trace of the scrambled NQ is properly head-governed but this is not the case in (17), and hence the contrast between these two sentences (cf. note 5).

Let us now sketch out the other kind of test, namely the Resultative Attribute test, which is introduced in Tsujimura (1990) so as to identify the type of a VN. It is known that the Resultative Attribute (hereafter, RA) can be predicated only ofthe internal argument, whether the argument is realized on the surface as a direct object or as a (derived) subject. This is instantiated by the following examples.

(18) a. I painted the car *yellow.*
b. I froze the ice cream *solid.*
c. The car was painted *red.*
d. The ice cream froze *solid.*
e. *I danced *tired.*
f. *I laughed *tired.*

In each of the examples in (18a)-(18d), the predicate has an internal argument and hence a RA can be properly predicated of the argument. The predicates in (18e) and (18f), on the other hand, are of the unergative type and do not have an internal argument. The subject NP *I,* in each sentence, is the external argument, and hence the RA *tired* cannot be linked to the subject. RAs in Japanese also show the same distribution. This is shown by the following examples from Tsujimura (ibid.: 281f.).

(19) a. Kuruma-o *akaku* nutta.
car-Acc red painted
'(I) painted the car red.'
b. Syatu-o *kiree-ni* aratta.
shirt-Acc clean-to washed
'(I) washed the shirt clean.'
c. Pan-o *makkuro-ni* yaita.
bread-Acc really black-to toasted
'(I) burned the bread black.'

(20) a. Hanako-no kami-ga *nagaku* nobita.
Hanako-Gen hair-Nom long lengthened
'Hanako's hair grew long.'

b. Pan-ga *makkuro-ni* yaketa.
bread-Nom really black-to toasted
'The bread burned black.'

Turning to VN-constructions, if a VN-construction has an internal argument in the argument structure of the VN, i.e., if the VN is either of the transitive type or of the ergative type, we predict that the VN-construction may have a RA in it, hosted by the 'deep' object. On the other hand, if the VN is of the unergative type, the RA hosted by the subject NP should not be allowed. Tsujimura (1990: 283f.) shows that this is the case.

(21) Sobietogun-ga dairiseki-no siro-o *konagona-ni* HAKAI-sita.
Soviets-Nom marble-Gen castle-Acc into pieces destroying-*suru*-Past
'The Soviets destroyed the marble castle into pieces.'

(22) Uti-ga *makkuro-ni* ZENSYOO-sita
house-Nom really black-to burning down-*suru*-Past
'The house got burned black.'

(23) *John-ga *kutakuta-ni* SAMPO-sita.
John-Nom dead tired taking a walk-*suru*-Past
'*John took a walk tired.'

Tsujimura assumes that the VNs *HAKAI* 'destroying' and *ZYNSYOO* 'burning down' have an internal argument (*dairiseki-no siro* 'the marble castle' in (21) and *uti* 'the house' in (22)), and hence the resultative constructions are properly licensed. On the other hand, *SAMPO* 'taking a walk' in (23) is an unergative-type VN, having only an external argument (*John*). Then, the RA *kutakutani* 'dead tired' cannot be predicated of the subject NP, and hence the unacceptability of the sentence.

We have reviewed in this subsection the two kinds of test which will identify the type of a VN: the NQ test and the RA test. Let us now present some examples which fail to fall within Miyagawa's (1989) generalization and are problematic to his analysis.

3.2. Transitive Type of VN

According to Miyagawa, it is expected that the transitive type of Japanese VN is allowed to appear in the two types of VN-construction, namely the VN-*o*

suru construction and the VN-*suru* construction, as in (1). The following examples, however, seem to be beyond the generalization. The VN-*o suru* constructions are ruled out, contrary to our expectation. [6]

(24) a. *Kooin-ga teppan-no SETUDAN-o sita.
factory worker-Nom steel plate-Gen cutting-Acc *suru*-Past
'The factory worker cut the steel plate.'
b. Kooin-ga teppan-o SETUDAN-sita.
factory worker-Nom steel plate-Acc cutting-*suru*-Past

(25) a.*?Kageki ha-ga biru-no HAKAI-o sita.
radical group-Nom building-Gen destruction-Acc *suru*-Past
'The radicals destroyed the building.'
b. Kageki ha-ga biru-o HAKAI-sita.
radical group-Nom building-Acc destruction-*suru*-Past

(26) a. *Kumiko-wa ie-no SYOOSITU-o sita.
Kumiko-Top house-Gen destruction by fire-Acc *suru*-Past
'Kumiko lost her house in the fire.'
b. Kumiko-wa ie-o SYOOSITU-sita.
Kumiko-Top house-Acc destruction by fire-*suru*-Past

(27) a.?*Ten'in-ga syokki-no KOMPOO-o sita.
clerk-Nom dishes-Gen packing-Acc *suru*-Past
'The clerk packed the dishes.'
b. Ten'in-ga syokki-o KOMPOO-sita.
clerk-Nom dishes-Acc packing-*suru*-Past

Let us now confirm non-ergativity of the VNs involved in the examples above. Since we cannot make a direct examination of the VN-*o suru* constructions (as they are unacceptable), we take an indirect approach to the VNs, making use of the VN-*suru* counterparts. Assuming that the VNs in the VN-*o suru* construction and the VN-*suru* construction have the same argument structure (which seems to be reasonable), we use the VN-*suru* construction as the subject of the diagnostics. If we can confirm that the VN in the VN-*suru* construction is of the transitive type, the VN in the VN-*o suru* construction can also be considered to be of the transitive type. (Miyagawa (1989) and Tsujimura (1990), though implicitly, make the same assumption that the argument structures of the VNs in the two constructions are identical. Miyagawa argues, in fact, that in either of the VN-constructions the argument structure of a VN is transferred to

the light verb *suru*)

If a VN is of the transitive type, we predict that the sentence containing the VN cannot pass either of the NQ-tests; the RA can be predicated of the object NP but not with the subject NP. Let us start with the NQ-tests. As the following examples show, the sentences in (24)-(27) pass neither the NQ-leaving test nor the NQ-scrambling test.

(24') a. *Kooin-ga teppan-o 2-ri SETUDAN-sita.
factory worker-Nom steel place-Acc 2-cl cutting-*suru*-Past
'Two factory workers cut the steal place.'

b. *2-ri, teppan-o kooin-ga SETUDAN-sita.
2-cl steel plate-Acc factory worker-Nom cutting-*suru*-Past

(25') a. *Kageki ha-ga biru-o 2-ha HAKAI-sita.
radical group-Nom building-Acc 2-cl destruction-*suru*-Past
'Two groups of the radicals destroyed the building.'

b. *2-ha, biru-o kageki ha-ga HAKAI-sita.
2-cl building-Acc radical group-Nom destruction-*suru*-Past

(26') a. *Kurasumeeto-ga ie-o 2-ri SYOOSITU-sita.
classmate-Nom house-Acc 2-cl destruction by fire-*suru*-Past
'Two of (my) classmates lost their houses in a fire.'

b.?*2-ri, ie-o kurasumeeto-ga SYOOSITU-sita.
2-cl house-Acc classmate-Nom destruction by fire-*suru*-Past

(27') a. *Ten'in-ga syokki-o 2-ri KOMPOO-sita.
clerk-Nom dishes-Acc 2-cl packing-*suru*-Past
'Two clerks packed the dishes in a small size.

b. *2-ri, syokki-o ten'in-ga KOMPOO-sita.
2-cl dishes-Acc clerk-Nom packing-*suru*-Past

The sentences do not pass the RA test either. Consider the following examples, where only object-oriented RAs appear in the sentences.

(24'') a. *Kooin-ga teppan-o *kutakuta-ni* SETUDAN-sita.
factory worker-Nom steel plate-Acc dead tired cutting-*suru*-Past
'*The factory worker cut the steel plate tired.'

b. Kooin-ga teppan-o mapputatu-ni SETUDAN-sita.
factory worker-Nom steel plate-Acc in half cutting-*suru*-Past
'The factory worker cut the steel plate in half.'

(25") a. *Kageki ha-ga biru-o *kutakuta-ni* HAKAI-sita.
radical group-Nom building-Acc tired destruction-*suru*-Past
'*The radicals destroyed the building tired.'

b. Kageki ha-ga biru-o *konagona-ni* HAKAI-sita.
radical group-Nom building-Acc into pieces destruction-*suru*-Past
'The radicals destroyed the building into pieces.'

(26") a. *Kumiko-ga ie-o *kanasiku* SYOOSITU-sita.
Kumiko-Nom house-Acc sad destruction by fire-*suru*-Past
'*Kumiko lost her house sad in a fire.'

b. Kumiko-ga ie-o *makkuro-ni* SYOOSITU-sita.
Kumiko-Nom house-Acc really black-to destruction by fire-*suru*-Past
'Lit. Kumiko lost her house black.'

(27") a. *Ten'in-ga syokki-o *kutakuta-ni* KOMPOO-sita.
clerk-Nom dishes-Acc dead tired packing-*suru*-Past
'*The clerk packed the dishes tired.

b. Ten'in-ga syokki-o *konpakuto-ni* KOMPOO-sita.
clerk-Nom dishes-Acc compact packing-*suru*-Past
'The clerk packed the dishes in a small box.'

The examples in (24)-(27) then pass none of the tests. This shows that the VNs involved are of the transitive type, taking an external and an internal argument.

In my judgment, the following transitive VNs are also excluded from the VN-*o suru* construction, contrary to Miyagawa's prediction: *SAKUSEE* 'making', *ENSOO* 'play', *SYOOHI* 'consumption', *ZYURYOO* 'receipt', *HUNSITU* 'loss', *KEN'O* 'hatred', *DEKIAI* 'blind love', etc.

3.3. Unergative Type of VN

The unergative type of VN is also expected in Miyagawa (1989) to appear in either the VN-*o suru* or the VN-*suru* construction. When we consider the following examples, this seems to be correct.

(28) a. Carl-wa nankaimo CHOOYAKU-o sita.
Carl-Top many times jump-Acc *suru*-Past
'Carl jumped many times.'

b. Carl-wa nankaimo CHOOYAKU-sita.
Carl-Top many times jump-*suru*-Past

(29) a. Reiko-wa kinoo DENWA-o sita.
Reiko-Top yesterday telephone-Acc *suru*-Past
'Reiko phoned yesterday.'
b. Reiko-wa kinoo DENWA-sita.
Reiko-Top yesterday telephone-*suru*-Past

The unergative VNs *CHOOYAKU* 'jump' and *DENWA* 'telephone' can appear in either the VN-*o suru* or the VN-*suru* construction. This result is correctly predicted under Miyagawa's (1989) analysis.

As is the case with the transitive type of VN, however, some VNs of the unergative type cannot appear in the VN-*o suru* construction. They are apparant exceptions to Miyagawa's observation that the VN-*o suru* construction is possible so long as the VN is non-ergative (namely, the transitive-type or the unergative-type VN). Take (30) and (31) for example.

(30) a.?*Mary-ga BISYOO-o sita.
Mary-Nom smile-o *suru*-Past
'Mary smiled.'
b. Mary-ga BISYOO-sita.
Mary-Nom smile-*suru*-Past

(31) a.?(?)Kumiko-wa tokidoki itinitizyuu ZESSYOKU-o suru.
Kumiko-Top sometimes all day fast-o *suru*
'Kumiko sometimes fasts all day.'
b. Kumiko-wa tokidoki itinitizyuu ZESSYOKU-suru.
Kumiko-Top sometimes all day fast-*suru*

With the two diagnostic tests at hand, namely the NQ test and the RA test, let us confirm the type of the VNs. If the VNs are of the unergative type (i.e., of the non-ergative type), taking a base-generated subject, they should allow neither of the NQ tests, because the subject NP is not a derived one from the internal argument position of the VN; moreover, the RA cannot be predicated of the subject NP. The following examples show that this is a correct prediction.

(30') a. *Zyogakusee-ga tokiori 2-ri BISYOO-sita.
girl student-Nom sometimes 2-cl smile-*suru*-Past
'Two girl students have sometimes smiled.'
b. *2-ri, tokiori zyogakusee-ga BISYOO-sita.
2-cl sometimes girl student-Nom smile-*suru*-Past

(31') a. *Wakai soo-ga tokidoki 2-ri ZESSYOKU-suru.
young monk-Nom sometimes 2-cl fast-*suru*
'Two of the young monks sometimes fast all day.'
b. *2-ri, tokidoki wakai soo-ga ZESSYOKU-suru.
2-cl sometimes young monk-Nom fast-*suru*

The RA test also shows that the VNs in the relevant examples are of the unergative type.

(30") *Mary-ga *kanasiku* BISYOO-sita.
Mary-Nom sad smile-*suru*-Past
'*Mary smiled sad.'
(Tsujimura 1990: 284)

(31")*?Kumiko-wa *garigari-ni* ZESSYOKU-sita.
Kumiko-Top skinny fast-*suru*-Past
'*Kumiko fasted skinny thin.'
(cf. Kumiko-wa *garigari-ni* yaseta.)
Kumiko-Top skinny lose weight-Past
'Kumiko thined down.'

If the VNs *BISYOO* 'smile' and *ZESSYOKU* 'fast' were of the ergative type (i.e., if the subjects in (30") and (31") were internal arguments of the VNs), then the RAs *kanasiku* 'sad' and *garigarini* 'skinny' could be predicated of the subjects, contrary to the fact.

There are several other unergative-type VNs which are excluded from the VN-*o suru* construction: *ZEKKYOO* 'scream', *BAKUSYOO* 'burst of laughter', *KONWAKU* 'embarrassment', *NETYUU* 'enthusiasum', *HAKKAN* 'perspiration'. [7]

To sum up this section, we have seen that the transitive type and the unergative type of VN are not necessarily allowed to appear in the VN-*o suru* construction in Japanese. The unacceptable VN-*o suru* constructions observed in this section are apparently counterexamples to Miyagawa's (1989) analysis, which crucially depends on Burzio's Generalization.

4. Analysis

In the preceding section, we have seen some apparent counterexamples to Miyagawa's (1989) analysis and shown that non-ergativity is not the sole factor to be satisfied by the VN in the VN-*o suru* construction.

In this section, we will sort out the relevant (semantic) factors which are

required to be satisfied by the VN-*o suru* construction. The abstracted factors can be regarded as semantic requirements for the VN-*o suru* construction. Through the discussion, it will be clarified that the construction is required to satisfy two semantic constraints, namely, the 'Agen-role requirement' for the subject NP and the 'direct-controllability requirement' for the VN, the latter of which can be further divided into (at least) two sub-requirements: the 'homogeneity requirement' and the 'repeatable-unit requirement'.

Firstly, we will see in 4.1 that Miyagawa's previous analysis (Miyagawa (1987)) covers the data discussed in Miyagawa (1989) and some of the problems examined in section 3. Still remaining data will be explained in 4.2.

4.1. Agent-Role Requirement for the Subject NP

Miyagawa (1987) provides a thematic account of what comes to be explained with Burzio's Generalization in his later analysis. The basic line of his analysis is as follows. The light verb *suru* in the VN-*o suru* construction has Agent role to assign to the subject NP. If the VN has an external (agentive) argument, the thematic role matching is completed in subject position and the construction is acceptable. If there is a mismatch between the Agent role required by the light verb *suru* and the thematic role 'transferred' from the argument structure of the VN, the construction is excluded. With the following examples cited from Miyagawa (1987: 34), let us sketch out his analysis.

(32) a. Taroo-ga suugaku-o BENKYOO-suru.
Taroo-Nom math-Acc study-*suru*
'Taroo will study math.'

b. Taroo-ga suugaku-no BENKYOO-o suru.
Taroo-Nom math-Gen study-Acc *suru*
Lit.: 'Taroo will do studying of math.'

(33) Taroo-ga SEEKOO-suru.
Taroo-Nom success-*suru*
*SEEKOO-o suru.
success-Acc *suru*
'Taro will succeed.'

The VN *BENKYOO* 'study' in (32) allows both the VN-constructions. On the other hand such VNs as *SEEKOO* 'success' allow only the VN-*suru* counterpart. (The latter type of VN includes *TANZYOO* 'birth', *ANTEI* 'stability', *RIKAI* 'comprehension', *ZYOOKA* 'vaporization', etc.) According to Miyagawa (1987),

BENKYOO has Agent role to assign but the members of the latter group do not. Hence the θ -matching mechanism prevents the VN *SEEKOO* from appearing in the VN-*o suru* construction.

As a test to identify the thematic role assigned to subject position (which is transferred from the VN), Miyagawa makes use of the (aspectual) inflection *-te iru*. If the inflection is attached to the Agent-assigning verb, the sentence receives a progressive reading; otherwise, a stative or a perfective reading results. Consider the following examples from Miyagawa (1987: 40).

(34) a. Taroo-wa hasit-*te iru*.
Taroo-Top run-Infl
'Taroo is running.'

b. Taroo-wa wakat-*te iru*.
Taroo-Top understand-Infl
'Taroo understands.'

The verb *hasiru* 'run' in (34a) assigns Agent role to its subject. (Agent-assigning verbs, such as *hasiru*, are referred to in Miyagawa (1987) as 'DO' verbs.) As shown in (34a), attachment of the inflection *-te iru* to the verb gives a progressive interpretation to the sentence. On the other hand, the verb *wakaru* 'understand' in (34b) does not assign Agent role but another type of thematic role, arguably Experiencer role, to its subject NP. (Verbs of this type are referred to as 'HAPPEN' verbs.) The sentence receives a stative or a perfective reading if we attach the *-te iru* inflection to the verb.

If a VN-*suru* construction with the inflection receives a progressive interpretation as in (34a), we can say that the argument structure of the VN is of the DO type, and the thematic role assigned to the subject position is Agent. Hence the requirement of thematic-role matching is satisfied in the VN-*o suru* construction and the sentence will be acceptable. This is the case with sentence (32b).

(32b') Taroo-ga suugaku-no BENKYOO-o si-*te iru*.
Taroo-Nom math-Gen study-Acc *suru*-Infl
'Taroo is studying math.'

The VN-*suru* counterpart in (33), on the other hand, receives a stative/perfective interpretaion when the *-te iru* inflection is attached to the verb.

(33') Taroo-ga SEEKOO-si-*te iru*.
Taroo-Nom success-*suru*-Infl
'Taro has succeeded.'

This θ -matching analysis, proposed in Miyagawa (1987), partly accounts for the problematic examples discussed in the preceding section. Consider the following examples.

(35) a. ZYURYOO 'receipt':
*?x-no ZYURYOO-o suru /ok x-o ZYURYOO-suru
b. KEN'O 'hatred':
*x-no KEN'O-o suru/ok x-o KEN'O-suru
c. KONWAKU 'embarrassment':
*KONWAKU-o suru/ok KONWAKU-suru
d. HAKKAN 'perspiration':
*HAKKAN-o suru/ok HAKKAN-suru

When we attach the *-te iru* inflection to the light verbs, these examples come to receive a stative/perfective interpretation, as shown below.

(36) a. Tasikani hisyo-wa tegami-o ZYURYOO-si-*te iru*
certainly secretary-Top letter-Acc receipt-*suru*-Infl
'(My) secretary has certainly received a letter.'
b. Kumiko-wa Hamada-o KEN'O-si-*te iru*
Kumiko-Top Hamada-Acc hatred-*suru*-Infl
'Kumiko hates Hamada.'
c. Sono nyuusu-o kiki, KONWAKU-si-*te iru*
that news-Acc listen embarrassment-*suru*-Infl
'(I'm) embarrassed at the news.'
d. Kanozyo-no senaka-wa ussurato HAKKAN-si-*te iru*
she-Gen back-Top slightly perspiration-*suru*-Infl
'There is a film of perspiration on her back.'

This indicates that these VN-constructions do not denote an event involving an agentive participant, hence the VNs involved are of the HAPPEN type, assigning Experiencer role to the subject NPs. Thus, due to the θ -matching mechanism, the VN-*o suru* counterparts in (35) are ruled out. The θ -matching mechanism also explains the following examples.

(37) a. KUROO 'hardship': *?KUROO-o suru/ok KUROO-suru
Atarasii-gakkoo-ni tenkoo-suru-to, KUROO(?*-o) suru-koto-ga
new school-to change-*suru*-when hardship(-Acc) *suru*-fact-Nom
yoku aru.
often be.
'When one changes to a new school, he often suffers from hardships.'

b. KUROO 'effort': ok KUROO-o suru/ok KUROO-suru
Kumiko-wa eigo-o masutaa-suru-tameni taihen KUROO(-o)
Kumiko-Top English-Acc master-*suru*-to hard effort(-Acc)
sita.
suru-Past.
'Kumiko made a lot of efforts to master English.'

The VN *KUROO* has two interpretations: 'hardships' and 'efforts'. Depending on the interpretation of the VN, as shown in (37), acceptability of the VN-*o suru* construction varies. Assuming that the subject in (37a) is assigned Experiencer role and the one in (37b) Agent role, the contrast can be accounted for by the θ-matching analysis.

It should be noted that the examples to which Miyagawa (1989) provides the 'ergativity' analysis can also be explained under this 'θ-matching' analysis. The reason is as follows. Since the ergative verb does not have an external argument in subject position, it does not have Agent role to assign. Then, the requirement that the subject NP of the light verb *suru* in the VN-*o suru* construction should be assigned Agent role cannot be satisfied, inducing a thematic-role mismatch. Thus, VNs of the ergative type also fall within the scope of Miyagawa's (1987) analysis. There are several other examples which have been problematic but can now be explained. They are: *DEKIAI* 'blind love', *HUNSITU* 'loss', *KONRAN* 'confusion', *RYUUKOO* 'fashion', etc. Here again, they all do not require Agent subject, but Experiencer (including Recepient) or Theme subject. [8]

There still remain, however, some examples which are beyond the scope of Miyagawa (1987). The θ-matching analysis is still insufficient to cover all of the examples examined in section 3. The remaining examples receive a progressive interpretation after the attachment of the inflection *-te iru*.

(38) a. Kooin-ga teppan-o SETUDAN-si-*te iru*
factory worker-Nom steel plate-Acc cutting-*suru*-Infl
'The factory worker is cutting the steel plate.' <Progressive>
b. Butai-ga gerira sosiki-o SEMMETU-si-*te iru*
unit-Nom guerilla band-Acc extermination-*suru*-Infl
'The unit is exterminating the guerilla band.' <Progressive>
c. Ten'in-ga syokki-o KOMPOO-si-*te iru*
clerk-Nom dishes-Acc packing-*suru*-Infl
'The clerk is packing the dishes.' <Progressive>
d. Kageki ha-ga biru-o HAKAI-si-*te iru*
radical group-Nom building-Acc destruction-*suru*-Infl
'The radicals are destroying the building.' <Progressive>

These indicate that Agent role is assinged to the subject NP in each example. Following Miyagawa (1987), then, VNs like *SETUDAN, SEMMETU, KOMPOO,* and *HAKAI* could appear in the VN-*o suru* construction. However, this is not the case. Then, the Agent role requirement cannot cover the data. Other problematic examples are: *SAKUSEE* 'making', *ENSOO* 'play', *SENSYUTU* 'election', *KAPPO* 'swaggering', KANDAN 'pleasant talk', etc. They all cannot appear in the VN-*o suru* construction.

4.2. Direct-Controllability Requirement for the VN

So far, we have suggested that Miyagawa's (1989) analysis should be replaced by the original intuition pursued in Miyagawa (1987). That is, in the VN-*o suru* construction, the thematic role of the argument transferred to subject position must be Agent, and agree with the thematic role assigned by the light verb *suru*. We have also seen that there still remain some examples which are beyond the scope of the θ -matching analysis in Miyagawa (1987).

It does not seem unreasonable, however, to assume that the Agent role requirement is a reflection of the semantics of the VN-*o suru* construction, and that the same semantic information is also reflected on the VN. Then, we expect that the VN in that construction is also under a certain constraint. In other words, the VN in the VN-*o suru* construciton must satisfy a certain semantic requirement (corresponding to the agentivity requirement for the subject NP).

Since the subject referent must be agentive, carrying out an action with his or her volition, the goal (i.e., his or her intended action) must be qualified for its performance. That is, the agentive referent must be able to accept the

responsibility for the result of the action (namely, the whole event), and he or she bears the full responsibility for it. We will suggest in this subsection that besides the Agent-role requirement for the subject NP, another semantic requirement is imposed on the VN-*o suru* construction: the event described by the VN in that construction must be a directly controllable action, for which the subject referent can accept the responsibility. We will see that this requirement for the VN can be further divided into (at least) two: the 'homogeneity' requirement and the 'repeatable-unit' requirement. The basic line of our idea is that agentive referents can accept the responsibility only for a 'homogeneous' action but not for the resultant situation or a secondary situation. It will be shown that those two semantic requirements for the VN cover the remaining problems. The idea of those semantic notions comes from the Event Structure analysis proposed in Ono (1997). Before examining those two requirements, we review Ono's analysis.

4.2.1. Ono (1997): Causative VNs vs. Activity VNs

Ono (1997) argues that the syntactic process of externalization of (internal) arguments is a result of the relative shift of 'semantic weight' (or 'headedness') of the components of a complex Event Structure. As a piece of evidence, he discusses a syntactic behavior of Japanese VNs which are affixed by aspectual morphemes. Ono shows that when the aspectual morpheme *-tyuu* 'mid' is affixed to VNs, the causative VN (but not the activity VN) allows externalization of its internal argument. Consider the following examples, which involve causative VNs (*KENSETU* 'construction', *SYUUHUKU* 'restoration', and *TOSOO* 'painting'). [9]

(39) a. Seihu-ga atarasii biru-o KENSETU-tyuu da.
The government-Nom new buildings-Acc construction-mid
'The government is constructing new buildings.'

b. Atarasii biru-ga KENSETU-tyuu da.
new buildings-Nom construction-mid
'New buildings are in construction.'

(40) a. Purozyekutotiimu-ga iseki-o SYUUHUKU-tyuu da.
the project team-Nom ruins-Acc restoration-mid
'The project team is restoring the ruins.'

b. Iseki-ga SYUUHUKU-tyuu da.
ruins-Nom restoration-mid
'The ruins are being restored.'

(41) a. Otoosan-ga ie-no kabe-o TOSOO-tyuu da.
Dad-Nom house-Gen walls-Acc painting-mid
'Dad is painting the wall of the house.'
b. Ie-no kabe-ga TOSOO-tyuu da.
house-Gen walls-Nom painting-mid
'The walls of the house are being painted.'

The relevant VNs are of the causative type, and externalization of the internal arguments (*atarasii biru* 'new buildings', *iseki* 'ruins', and *ie no kabe* 'walls of the house', respectively) is allowed as is shown by the (b) sentences. This kind of alternation, however, cannot be observed when VNs are of the activity type. The following examples involve activity VNs (*KENKYUU* 'research', *SOOKOO* 'driving', and *YUSOO* 'transportion'), and the alternants derived through externalization are all unacceptable. [10]

(42) a. Sensee-ga Ainugo-o KENKYUU-tyuu da.
Professor-Nom Ainu language-Acc research-mid
'The professor is doing a research on Ainu language.'
b. *Ainugo-ga KENKYUU-tyuu da.
Ainu language-Nom research-mid
'A research on Ainu language is in progress.'

(43) a. Singatasha-ga koosokudooro-o SOOKOO-tyuu da.
New model-Nom freeway-Acc driving-mid
'A new model is driving on the freeway.'
b. *Koosokudooro-ga SOOKOO-tyuu da.
freeway-Nom driving-mid
*'A freeway is driving.'

(44) a. Keebiin-ga genkin-o YUSOO-tyuu da.
security guards-Nom money-Acc transportion-mid
'The security guards are carrying money.'
b. *Genkin-ga YUSOO-tyuu da.
money-Nom transportion-mid
*'Money is being carried.'

Ono argues that the contrast between (39)-(41) on the one hand and (42)-(44) on the other can be derived from the Event Structures of the VNs. Ono assumes that causative VNs have a complex Event Structure, consisting of the process component and the state component, while activity VNs have a simple one,

consisting only of the process component. [11]

Although the causative/activity distinction of VNs is irrelevant to the externalization in the VN-*suru* construction, the distinction is still helpful to the analysis of the VN-*o suru* construction. [12] We will see that the VN in the VN-*o suru* construction must denote a directly controllable (sub-)event. This constraint can be divided into two semantic constraints: the 'homogeneity' requirement and the 'repeatable-unit' requirement. In the following subsections, we will see that VNs which lexicalize the state component (of a complex Event Structure) or a secondary situation (side-effect) of an action cannot appear in the VN-*o suru* construction.

4.2.2. Homogeneity Requirement for the VN

Before discussing the effect of the causative/activity distinction on the VN-*o suru* construction, let us make a brief review of Ono's account of the possibility of externalization and its implication.

Ono argues that if a VN has a complex Event Structure, either the process subevent or the state subevent is foregrounded. We should notice here that the process of foregrounding is a semantic notion relevant to the *syntactic* process of externalization. (The data we have observed in 4.2.1 show that his analysis is correct in this respect.) However, this does not entail that the backgrounded component is completely lost in the complex Event Structure. In other words, the VN does not come to represent the process component alone. We assume then that in the VN with a complex Event Structure, whether or not the *semantic* process of foregrounding works on some syntactic phenomena, both the process component and the state component are closely linked to each other to create a relation of cause and effect.

Now, if we are on the right track in saying that the VN in a VN-*o suru* construction must denote an event for which an agnetive referent can accept the full responsibility (i.e., a directly controllable action), then we expect that causative VNs, which have a complex Event Structure, will be excluded from the VN-*o suru* construction. That is because the agentive subject is directly responsible only for the activity which triggers the change of state of the object referent. That is, the subject referent has direct control simply over the process subevent of a complex Event Structure. However, the complex Event Structure denoted by a causative VN cannot but include the state component by nature. Then, here derives the first semanticrequirement for the VN in a VN-*o suru* sentence: the 'homogeneity'

requrement.

A VN denotes a certain kind of event. We say an event is 'homogeneous' if any arbitrary periods in the event are equal in quality. On the other hand, if two distinct periods of an event are different from each other, with only one of them containing or lacking a certain aspect of the event, we say the event is heterogeneous. For example, a VN focusing on the endpoint of an event will be classified into the heterogeneous type of event. Note that this definition classifies the event denoted by a causative VN as heterogeneous, because, as we have just mentioned above, it necessarily involves the state subevent, which represents a change of state. Then, the homogeneity requirement will exclude the VN from the VN-*o suru* construction. Let us consider the following examples.

(45) a.?*Keesatu-wa sono yoogisya-no HOSYAKU-o sita.
police-Top that suspect-Gen bail-Acc *suru*-Past
'The police released the suspect on bail.'
b. Keesatu-wa yoogisya-o HOSYAKU-sita.
police-Top suspect-Acc bail-*suru*-Past

(46) a. *Butai-ga gerira sosiki-no SEMMETU-o sita.
unit-Nom guerilla band-Gen extermination-Acc *suru*-Past
'The unit exterminated the guerilla band.'
b. Butai-ga gerira sosiki-o SEMMETU-sita.
unit-Nom guerilla band-Acc extermination-*suru*-Past

(47) a.?*Gaka-ga Monariza-no e-no SYUUFUKU-o sita.
painter-Nom Mona Lisa-Gen picture-Gen restoration-Acc *suru*-Past
'The painter restored *Mona Lisa*'
b. Gaka-ga Monariza-no e-o SYUUFUKU-sita.
painter-Nom Mona Lisa-Gen picture-Acc restoration-*suru*-Past

(48) a.?*Ten'in-ga syokki-no KOMPOO-o sita.
clerk-Nom dishes-Gen packing-Acc *suru*-Past
'The clerk packed the dishes.'
b. Ten'in-ga syokki-o KOMPOO-sita.
clerk-Nom dishes-Acc packing-*suru*-Past

Each VN in the above examples denotes an event which has and is focusing on a certain breaking-point. The breaking-point qualifies the event as heterogeneous in quality. In (46), for example, the guerilla band decreases in number and, exactly at the breaking-point (when the band has 'zero' members in it), the

decrease of guerillas stops. In (47) the restoration of the picture goes on and, finally at the breaking-point (i.e., when the restoration has completed), the event of restoration by the painter ends. Thus, the events denoted by those VNs are considered to be heterogeneous. With the homogeneity requirement for the VN in the VN-*o suru* construction, then, we can correctly predict the unacceptability of the VN-*o suru* counterparts in (45)-(48). [15]

The homogeneity requirement also predicts that the VN-*o suru* construction will exclude VNs of the 'creation' type (corresponding to EFFECT verbs), because the event will come to an endpoint (breaking-point) if the action is completed and the resultant object comes to exist. Then, here again, if the homogeneity requirement is a correct abstraction, the VN-*o suru* construction with a VN of the creation type will be ruled out. The following examples show that this is in fact the case.

(49) a. SOOZOO 'creation': *SOOZOO-o suru/ok SOOZOO-suru
*Kami-ga sekai-no SOOZOO-o sita.
God-Nom world-Gen creation-Acc *suru*-Past
'God created the world.'

b. SAKUSEE 'making': *?SAKUSEE-o suru /ok SAKUSEE-suru
*?Kumiko-wa hakase ronbun-no SAKUSEE-o sita.
Kumiko-Top doctor thesis-Gen creation-Acc *suru*-Past
'Kumiko finished writing her dissertation.'

c. HAKKEN 'discovery': *HAKKKEN-o suru/ ok HAKKEN-suru
*Yamada-wa atarasii sima-no HAKKEN-o sita.
Yamada-Top new island-Gen discovery-Acc *suru*-Past
'Yamada discovered a new island.'

In each example, the event denoted by the VN can be regarded as heterogeneous, because at the very endpoint of the event some entity comes to exist (or comes within the 'scope' of the agentive individual in (49c)), and the event will not proceed any more.

We have seen that the VN in the VN-*o suru* construciton must be homogeneous in quality. Before proceeding, we add below some examples, where the VN-*o suru* counterparts are excluded in violation of the homogeneity requirement.

(50) a. ZOOYO 'give':
*y-ni x-no ZOOYO-o suru/ok y-ni x-o ZOOYO-suru

b. SENSYUTU 'election':
?*x-no SENSYUTU-o suru/ok x-o SENSYUTU-suru
c. ENSOO 'play':
*?x-no ENSOO-o suru/ok x-o ENSOO-suru

Each of the VNs above is focusing on the endpoint of an action and this indicates that the events described by the VNs are not homogeneous. Hence the homogeneity requirement also rules out the VN-*o suru* counterparts in (50). [14]

4.2.3. Repeatable-Unit Requirement for the VN

The homogeneity requirement discussed above is induced by the fundamental requirement that the VN in the VN-*o suru* construction must denote a directly controllable event. This general constraint further derives the 'repeatable-unit' requirement for the VN.

We assume that in order for an action to be well qualified, the intended action must be regarded as a repeatable unit: when a VN appears in the VN-*o suru* construciton, it must describe a 'repeatable' action. We consider that an action is qualified as repeatable if an individual can intentionally perform *exactly* the same action as has ever been done. Otherwise, we cannot say the action is repeatable; rather, it is an incidental one. For instance, if a VN incorporates a secondary situation (or a side-effect) which accompanies to the action, even an agentive individual cannot repeat the same action, because the secondary situation is just beyond the scope of his/her intention or responsibility, and the resultant situation is always unstable. In other words, the secondary situation is beyond the scope of the agentivity of the subject referent, and hence the subject referent cannot directly control (or be highly responsible for) that effect. Thus, we predict that if a certain (uncontrollable) secondary situation of an action is lexicalized into a VN (even when the action carried out by the agent is homogeneous), the VN can not appear in the VN-*o suru* construciton. That is because exactly the same event cannot be repeated. The following serves as a good example.

(51) KOOTOO 'good pitching':
*KOOTOO-o suru/ok KOOTOO-suru

Although the action of throwing a ball itself is within the scope of responsibility of the agent, the result of the pitching (i.e., 'goodness' or 'excellence' of the pitching) is not; it rather depends on various factors which are far-off of the pitcher's talent. In this sense, the VN *KOOTOO* 'good pitching' includes a resultant situation. Then, pitchers simply cannot perform 'good pitching' but just 'pitching' (or try to

pitch a good game). Hence, the VN cannot appear in the VN-*o suru* construction, as shown in (51).

The repeatable-unit requirement also predicts that the VN-*o suru* counterpart may be acceptable, depending on the interpretation of a VN. Considerthe following examples.

(52) a. ZYOOBA 'mounting a horse':
John-wa isoide ZYOOBA(*-o) sita.
John-Top quickly mounting a horse-Acc *suru*-Past
'John mounted a horse quickly.'

b. ZYOOBA 'horseback riding':
John-wa mainiti zyooba kurabu-de ZYOOBA (?)(-o) suru.
John-Top everyday riding club-in horseback riding-Acc *suru*
'John rides a horse in the riding club everyday.'

(53) a. kuruma-no SEESAN-o suru (koto)
car-Gen production-Acc *suru* fact
'to produce cars'

b. *hakase ronbun-no SAKUSEE-o suru (koto) (cf. (49b))
doctor thesis-Gen making-Acc *suru* fact
'to write a dissertation.'

(54) a. SAMPO 'walking':
ok SAMPO-o suru/ok SAMPO-suru

b. KAPPO 'swaggering':
*KAPPO-o suru/ok KAPPO-suru

The VN in (52) *ZYOOBA* is ambiguous: it means either the action of 'mounting a horse' or the activity of 'horseback riding' (as a sport or a hobby). With the former interpretation, the VN is excluded from the VN-*o suru* construction ((52a)); but with the latter, it can appear in both of the VN-constructions ((52b)). The fact in (52b) can be accounted for by considering that the VN there ('horseback riding') satisfies the repeatable unit requirement. The same line of explanation can be provided for the contrastive judgment between (53a) and (53b), where two semantically close VNs *SEESAN* 'production' and *SAKUSEE* 'make' are involved. The contrastive behavior of the VN-*o suru* construcitons in (54) can be explained in the same manner. The VN *KAPPO* 'swaggering' lexicalizes the manner of walking which is described not by the walker himself or herself but only by others. Thus, even though the activity of swaggering is homogeneous in nature, it cannot

be regarded as a repeatable unit in our analysis.

We have seen that the acceptable VN-*o suru* counterparts in (52)-(54) can be explained with the notion of repeatable unit, which functions as another requirement for the VN in the VN-*o suru* construction. We list some more examples which can be covered by this requirement.

(55) a. HOKYUU 'catching a ball':
*HOKYUU-o suru/ok HOKYUU-suru

b. NYUUSUI 'drowning oneself':
*NYUUSUI-o suru/ok NYUUSUI-suru

c. KANDAN 'pleasant talk':
*KANDAN-o suru/ok KANDAN-suru

d. ZOKUTOO 'continuing to pitch':
*ZOKUTOO-o suru/ok ZOKUTOO-suru

5. Concluding Remarks

In this paper, we have pointed out that Miyagawa's (1989) analysis is insufficient, by showing that the data discussed in his study are not extensive enough. We have discussed two semantic requirements for the VN-*o suru* construction. They are the Agent-role requirement for the subject NP, and the directly-controllability requirement for the VN, the latter of which can be divided into (at least) two sub-requirements: the homogeneity requirement and the repeatable-unit requrement.

Notes

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[1] There are also some VNs which cannot appear in the VN-*suru* construction (e.g., *SUIEI* 'swimming', *DOKUSYO* 'reading'). Since to discuss the VN-*suru* construction is beyond the scope of this paper, we leave such cases for further analysis.

[2] The judgment of the VN-*o suru* construction may vary among speakers. As is pointed out in Kageyama (1993), the use of the VN-*o suru* construction is prevailing among young speakers. They may accept the VN-*o suru* counterparts presented in this paper as ungrammatical examples. Although the judgment in (5) and the data discussed in 4.1 seem rather straightforward, some speakers may find judgment of the data provided in 4.2 to be subtle. We assume that the variation among speakers is, in terms of our analysis to be proposed in section 4, due to the difference in the way of foregrounding of a subevent (cf. notes 13, 14).

[3] Miyagawa (1989) accounts for the unconstrained nature of the VN-*suru* construction by assuming that the light verb *suru* in that construction is different from the one in the unincorporated construction. The light verb *suru* in the VN-*suru* construction lacks the (accusative) Case assigning property, and hence need not assign an external θ -role to subject position.

[4] Miyagawa (1989: 660f.) assumes that the linkikng relation is properly licensed by mutual c-command relation between an NQ and its host NP.

[5] The unacceptability of the sentences in (12) and (13) are accounted for in Miyagawa (1989: 663f.) by assuming that the traces in these sentences are not head-governed by V^0 (and hence they are not properly governed). This yields a violation of the Empty Category Principle. On the other hand, the traces in the acceptable cases, including ergative and passive constructions, are head-governed by V^0 and the sentences are grammatical. See Miyagawa (1989: 663) for details.

[6] Some speakers may accept the VN-*o suru* construction in (27). We will discuss this issue later (cf. note 14).

[7] Kageyama (1993: 54) introduces the adverb *takusan* 'a lot' to identify the type of a VN. The adverb *takusan* varies its interpretation depending on the type of the verb following it. Consider the following examples.

(i) a. takusan umareta
a lot be born-Past
b. takusan nakunatta
a lot die-Past
c. takusan kowareta
a lot break-Past
(ii) a. takusan asonda
a lot play-Past

b. takusan aruita
   a lot walk-Past
c. takusan kurusinda
   a lot worry-Past

The sentences in (i) have an unaccusative verb. The adverb refers to the number of the participants in the event described in each sentence. In the examples in (ii), on the other hand, the adverb refers to the quantity of the action but not to the number of the subject referents.

This test also shows that the VNs discussed in this subsection are of the unergative type (though some of the VNs are semantically incompatible with the adverb). Consider the following examples.

(iii) a. takusan BISYOO-sita
   a lot smile-*suru*-Past
b. takusan ZEKKYOO-sita
   a lot scream-*suru*-Past
c. takusan HAKKAN-sita
   a lot perspiration-*suru*-Past

Here again, the adverb refers only to the quantity of the actions carried out by the subject referents.

[8] There are some VNs which apparently assign Experiencer role to subject position but the corresponding VN-*o suru* counterparts are acceptable. We leave those examples for further research. (See Kageyama (1993: 282) for details.)

[9] According to Ono, the causative type includes such VNs as *SETUDAN* 'cutting', *INSATU* 'paint', *HORYUU* 'deferment', *KAIHATU* 'development', *KOOZI* 'construction', and *HOSYAKU* 'bail'.

[10] Ono classifies into the activity type such VNs as *TUISEKI* 'chase', *YUSYUTU* 'export', *KENSA* 'inspection', *SOODAN* 'consultation', and *SIPPITU* 'writing'.

[11] Ono assumes that the aspectual morpheme (aspectualizer) *tyuu* 'mid' has the event type which he refers to as DURATIVE. As a result of complex predicate formation (between the morpheme *-tyuu* and a VN), the Event Structure of the VN head is composed with the aspectualizer DURATIVE, and through this

operation, the duration of the event denoted by the VN is extended.

With these assumptions, Ono explains the difference between causative VNs ((39)-(41)) and activity VNs ((42)-(44)) in the following manner. Since causative VNs have a complex Evnet Structure, either the process or the state component can be foregrounded and evoked by the aspectualizer. If the process component is foregrounded, it yields the meaning of activity in process and the resulting construction is the 'non-externalized' counterpart (as the (a) sentences in (39)-(41)). On the other hand, if the evoked component is the state subevent, the result is the 'externalized' counterpart (as the (b) sentences in (39)-(41)) and it represents a situation in which the process of change is in progress. As can be predicted, the 'externalization' alternation is impossible in the case of activity VNs (as shown in the (b) sentences in (42)-(44)), because they have only the process component.

[12] As Ono (1997: 161f.) points out in his study, the alternation (i.e., the process of externalization) can be observed only when the affixed morpheme is *tyuu* 'mid'. Other morphemes, including *suru* 'do', do not show this type of alternation, even if the VNs involved are of the causative type. Compare (39) with (i).

(i) a. Seihu-ga atarasii biru-o KENSETU-sita.
The government-Nom new buildings-Acc construction-suru-Past
'The government constructed new buildings.'
b. *Atarasii biru-ga KENSETU-sita.
new buildings-Nom construction-suru-Past
'New buildings were constructed.'

[13] Katsuo Ichinohe (p.c.) and some of my informants pointed out to me that there lies a distinction in acceptability between (45)-(46) on the one hand, and (47)-(48) on the other: the latter examples are better than the former. Their judgment may be accounted for as a result of foregrounding of the process component of the complex Event Structure. We consider that in interpreting the VNs in (47) and (48) they put a heavy stress on the process component of each Event Structure. As a result of this, the state components receive much less importance in the VNs. Then, the VNs are recognized as homogeneous events and the sentences improve in acceptability.

[14] The contrast between the VN-*o suru* and the VN-*suru* constructions is exemplified in (i).

(i) a. *Wareware-wa daihyoosya-tosite Taroo-no SENSYUTU-o sita.
we-Top representative-as Taroo-Gen election-Acc *suru*-Past
'We have elected Taroo as our representative.'
b. Wareware-wa daihyoosya-tosite Taroo-o SENSYUTU-sita.
we-Top representative-as Taroo-Acc election-*suru*-Past

Keigo Yamada (p.c.) and some of my informants pointed out to me that the VN-*o suru* counterpart improves if the internal argument *Taroo* is replaced by *daihyoo-sya* 'representative', as shown in (ii).

(ii) Wareware-wa daihyoosya-no SENSYUTU-o sita.
we-Top representatvie-Gen election-Acc *suru*-Past
'We have elected our representative.'

The difference in acceptability they observe, if real, can be again accounted for as a result of the interaction between the foregrouding mechanism and the affinity of the internal argument to the state subevent. That is, the internal argument *Taroo* in (ia) is closely tied to the state component, becasue we cannot identify Taroo as a representative before the whole process of election attains completion, namely 'vote', 'vote counting', 'announcement of the result'. In other words, the internal argument *Taroo* forces the interpretation that the election is over. Then, the VN in (ia) cannot satisfy the homogeneity requirement. On the other hand, *daihyoo-sya* 'the representative' in (ii) does not necessarily entail that the election has been finished, because the resentative is not specifically expressed in the sentence. Then, we may say that, for those who accept sentence (ii), the VN *SENSYUTU* is interpreted as having its state component much more backgrounded than in the usual case, as if it had only a highly foregrounded process component. Then, according to the homogeneity requirement, we predict that the sentence will be more acceptable.

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