THE ROLE OF LIGHT VERB PROJECTION IN TRANSITIVITY ALTERNATION

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This paper looks at the transitivity alternation phenomenon in Japanese, evinced by the verbs suru ‘do’ and naru ‘become,’ and tries to bring empirical evidence to support the proposal that these verbs are the counterparts of the two kinds of light verbs, v and v*, proposed by Chomsky (2001). An empirical basis is given for the existence of v/v*, and the result of the analysis clarifies the similarities and differences between the clause architecture of English and Japanese. From a theoretical standpoint, the result supports the Agree mechanism proposed by Chomsky (2001).

Keywords: light verb, transitivity alternation, phrase structure, parametric syntax, Agree

0. Introduction

Chomsky (2001) attempts to explain the transitivity alternation in (1) by reconsidering Chomsky (1995), where the light verb v was assumed only in transitive and unergative sentences, and suggesting the existence of a transitive v*, which inserts the external argument, and an unaccusative v, which does not.¹

(1) a. John broke the door.
   b. The door broke.

According to this proposal, both the transitive sentence (1a) and the unaccusative sentence (1b) contain the verbal root ‘break,’ and the transitivity depends on the selection of v* or v as the light verb. That is to say that the two sentences have the common structure in (2).

¹ Collins (1997) proposes a similar analysis but uses two functional categories called Tr(active) and Tr(inactive).
If the light verb $v^*$ is selected, which assigns thematic role to the external argument, the transitive sentence is formed, and if $v$ is selected, which does not assign thematic role to the external argument, the internal argument rises to the subject position and forms the unaccusative structure.

In Japanese, Nishiyama (2000) and Hasegawa (2001) propose an analysis based on two types of light verbs, but they only show that such an analysis is possible and do not bring empirical evidence as to its actual existence. In fact, as no decisive proof has been found that shows the existence of functional categories in Japanese (Fukui and Sakai (2003)), the existence of empirical evidence for or against the analysis proposed by Chomsky (2001) is a matter of great theoretical interest that has yet to be answered, regarding the universality of phrase structure and the parameters concerning functional categories. Within this context, this paper analyses the phenomenon of transitivity alternation in constructions where the verbs *suru* ‘do’ and *naru* ‘become’ occur with non-finite stative predicates, illustrated below, and demonstrates that in terms of phrase structure these verbs appear in the posi-

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2 Harley (1996) and McClure (1998) propose an analysis whereby different transitive and unergative verb endings are regarded as functional categories having to do with lexical aspect and lexical voice.

3 Fukui and Takano (1998: 55) state that ‘the Japanese light verb $v$ tends to have phonetic content distinguishing transitive verbs and their unaccusative counterparts, e.g. *akeru* ‘to open (transitive)’ vs. *aku* ‘to open (unaccusative).’ However, in their paper no empirical evidence is presented to show that these elements are similar to light verbs.
This result is important because it gives an empirical basis to the universality of phrase structure and to the existence of v/v*, which were assumed in previous studies solely for logical and theory-internal reasons. This paper advances one more step and claims that these verbs are different from the English v and v* in two important respects. First, they are clearly overt functional categories that fulfil at PF the visibility condition of Fukui and Sakai (2003). Second, although v* participates in the checking of accusative Case, it does not trigger argument raising. From the standpoint of parametric syntax, the differences between English and Japanese discussed by Fukui (1986, 1995), Kuroda (1988) and others with regard to Spec-Head agreement are once more clearly verified. This is a result that theoretically supports Chomsky’s (2001) Agree mechanism, which separates Agree from Attract triggered by the EPP feature and allows elimination of uninterpretable features without Move.

The argumentation proceeds in the following steps. First, Stroik’s (2001) analysis of the English verb do is presented, and it is argued that in a structure like (2) the verb do can appear in three positions: (i) in the position of the main verb V, (ii) in the position of the light verb v/v*, and (iii) in the position of the tense marker T. If a similar structure exists in Japanese, the verbs suru and naru can only appear in the same three positions. In section 2 the dummy verb construction is compared to examples like (3) and it is argued that they are different constructions, i.e. that surunaru are not generated under Tense. In section 3 the structures under consideration are also shown to be differ-
ent from lexical verb constructions in general. Section 4 will summarise this demonstration, i.e. that possibilities (i) and (iii) have been eliminated, and will show that possibility (ii), i.e. suru/naru are light verbs, is the most appropriate analysis. In section 5 the analysis whereby \(v/v^*\) do exist in Japanese and that they manifest overtly as suru/naru is examined in terms of its theoretical implications for the universality of phrase structure and its parameters. Section 6 summarises the entire paper and points out the remaining problems.

1. The Light Verb Projection and the Position of English *Do*

Before embarking upon the discussion of Japanese suru/naru, let us take a look at Stroik’s (2001) analysis of English *do*. In traditional studies two analyses were generally accepted in connection with *do*. In addition to *do* analysed as a full verb, there was also the analysis whereby *do* was inserted through *do*-support, as a dummy verb/helping verb. Stroik (2001) argues that a certain type of *do* of what used to be called dummy verb/helping verb corresponds to Chomsky’s (1995) \(v\) and thereby opens an interesting theoretical debate.6

After separating *do* occurrences into heavy verb *do* and helping verb *do*, he further divides the helping verb *do* into an auxiliary helping verb (4a), which receives the tense marker, and a non-auxiliary helping verb (4b–e) that expresses aspect and indefiniteness.

(4)  
\begin{align*}
\text{a.} & \quad \text{Chris did the dishes.} \\
\text{b.} & \quad \text{Chris likes Pat, but Sam doesn’t like her.} \\
\text{c.} & \quad \text{Chris is leaving now, and Sam is doing so too.} \\
\text{d.} & \quad \text{Chris has left already, and Sam has done so too.} \\
\text{e.} & \quad \text{Chris should leave soon, and Sam should do so too.}
\end{align*}

As seen in (4b–e), the helping verb *do* can assume all the morphological properties of a full verb. Stroik argues that the existence of such properties suggests the existence of [V Form] feature in *do*. He also argues that it is possible for the helping verb *do* to check the morphological feature [V Form] of the main verb.

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6 According to Stroik, the theoretical implication of this result is that the light verb *v* is not just ‘motivated solely by the theory-internal need,’ as Kitahara (1997) claims, but, like other functional categories, it is ‘justified morphologically and semantically.’
Stroik argues against the view that *do so* as a whole replaces the VP, pointing out the following observations.

(5) Chris has left already, and Pat has done *(it/so)*, too.
(6) Ted left, which he shouldn’t have done.
(7) Pat had read a book, which is what Sam had done too.

In (5), although the verb *leave*, which is being replaced, does not have a complement, the replacing verb *do* must have one (either *so* or *it*). If *do* replaced the main verb, it would be difficult to explain why it needs a complement. Moreover, in the relative clauses in (6) and (7), the antecedents of relative pronoun *which* are thought to be the main predicates *leave* and *read a book*. That is to say, what replaces the main predicates is the complement of *do*. From this discussion Stroik concludes that it is just the complement of the verb *do*, and not the expression *do so*, that replaces the main verb phrase.

If *so* is what replaces the verb in the *do so* construction, *do* must be inserted in a position higher than VP. However, as mentioned before, *do* participates in the checking of the [V Form] feature of the main verb, and therefore cannot be projected in a position away from the main verb, because of the strict locality condition on feature checking. Consequently, the only position in which the helping verb *do* could possibly occur, above the VP and in direct contact with it, is the v position.

Unfortunately, Stroik only looks at indirect evidence, such as the occurrence of the wh-phrase in the relative clause and the answer to interrogative sentences, to support the central claim of his analysis. Therefore it is premature to say, based only on Stroik’s theory, that English *do* is empirical proof of the existence of light verbs. What his paper accomplishes is to show that English *do* can exist in one of the three positions indicated below.
Whether *do* can actually assume all these positions or not is an empirical matter that must be examined on the basis of actual facts. That is to say, in dealing with the positions of *suru/naru*, all three possibilities must be examined. Consequently, the following sections deal in order with the dummy verb option (section 2), the heavy verb option (section 3), and the light verb option (section 4).

2. Against the Dummy Verb Analysis

In this section we demonstrate that the *suru/naru* structures considered in this paper are different from the so-called dummy verb construction.

In Japanese there exists the structure [non-finite verb+particle+*suru*], illustrated below.

(9) Taroo-wa hon-o kai-wa shita-ga yomi-wa shi-nakat-ta.
Taroo-Top book-Acc buy-Prt do-Past-Conj read-Prt
‘Taroo did buy a book, but did not read it.’

The *suru* in this structure is analysed in many studies as similar to the English *do*-support structure (Kageyama (1993), Aoyagi (1998), Sakai (1998) among others). In examples like (9), the morphological merger of the verb and the tense marker is blocked by the interposition of particles like *wa* and *sae*. In order to mark tense, a verbal root is needed, and for this purpose *suru*, in the form *shi*, is inserted into the structure.
under Tense. That is to say, the *suru* used in examples like (9) is a dummy verb that is thought to be the head of the Tense projection. Given this analysis, can the [non-finite stative predicate+*suru/naru*] structure examined in this paper be examined as a dummy verb structure? We bring below two pieces of evidence that this is not the case.

First, if the analysis briefly outlined above is correct, i.e. that *suru* in (9) is indeed similar to the English *do*-support construction, then in one main clause no more than one dummy verb should be allowed, because in one clause only one Tense projection is possible. Therefore, if the *suru/naru* in (3) are dummy verbs, then no more dummy verbs should be allowed in the structure. This prediction is indeed borne out in the example below.

(10) *Taroos-wa hon-o kaki-sae shi-wa shi-nakat-ta.*
    Taroos-Top book-Acc write-Prt shi-wa shi-nakat-ta
    ‘As for Taroos, he did not even write the book.’

Consequently, if the [non-finite stative predicate+*suru/naru*] structure examined in this paper were the dummy verb structure, another dummy verb should not be possible after *suru/naru*. However, the data below contradicts this prediction.

    Setsuko-Nom room-Acc beautiful-Prt do-Prt do-Neg-Past
    ‘Setsuko did not even clean the room.’

    Room-Nom beautiful-Prt become-Prt do-Neg-Past
    ‘The room did not even become clean.’

Here a dummy verb can be attached after the *suru/naru* that occur with the non-finite predicate. This means that the *suru/naru* studied in this paper are different from the *suru* in example (9), and are not inserted for the purpose of Tense merger.

The second piece of evidence concerns differences in their distribu-

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7 The second *suru* in example (9) is, strictly speaking, attached to the negation morpheme *nai*. Given this we should say ‘under Tense T or Negation Neg.’ This cannot be entirely denied, but the dummy verb *suru* should not be able to appear separately under T and under Neg. There is no evidence that would suggest more than one insertion point for the dummy verb. A reasonable analysis is that dummy verb insertion is limited to T, and that the order of *suru* and Neg is obtained after the merger of T and Neg. We reserve this question for a future study.
tion patterns. In the surul/naru constructions treated in this paper, suru has an unaccusative counterpart in naru, i.e. suru appears in transitive and unergative sentences, while naru appears in unaccusative sentences. On the other hand, dummy verb suru does not have transitivity alternation, it occurs with transitive and unergative verbs as well as with unaccusative verbs. Here are some examples.

(13) Koppu-wa ware-wa shi-nakata-ga hibi-ga
    Cup-Top break(intr)-Prt do-Neg-Past-Conj crack-Prt
    hait-ta.
    insert-Past
    ‘The cup did not break, but it cracked.’

    Cup-Nom many pieces-Prt become-Past
    ‘The cup broke to pieces.’

    Cup-Nom many pieces-Prt do-Past
    ‘The cup broke to pieces.’

    Setsuko-Nom cup-Acc many pieces-Prt do-Past
    ‘Setsuko broke the cup to pieces.’

As seen in (13), the dummy verb suru can occur with the unaccusative verb wareru ‘break.’ On the other hand, in (14) the structure [non-finite predicate+suru/naru] allows suru only in transitive sentences, while naru must be used in unaccusative sentences. This distribution can be interpreted as follows. The dummy verb suru is generated under Tense, and does not participate in the introduction of arguments into the structure. Unlike the dummy verb, the suru in the transitivity alternation structure assigns thematic role to the external argument. If the external argument does not exist, suru must be replaced with naru.

In other words, in the structures examined here, surul/naru are similar to the dummy verb suru in that none have lexical content, but there is an essential difference between them. The dummy verb is a syntactically vacuous element that does not participate in any way in the licensing of arguments, whereas the surul/naru in the transitivity alternation take an important syntactic role and alternate according to the existence or lack of the external argument. Suru takes an external argument, while naru occurs in unaccusative sentences that have no external argument. It is therefore unlikely that surul/naru are generated under Tense in the alternation structure.
In this section we have shown that *suru* is a theta role assigner in the transitivity alternation structure. If this is correct, then is it possible that *suru* is similar to a lexical verb? In the next section we shall look at the differences between lexical verbs and the *suru/naru* of the transitivity alternation structure.

3. Against the Heavy Verb Analysis

3.1. *Suru/Naru* as Heavy Verbs

The preceding section suggests that the *suru* under discussion in this paper is connected to the thematic role assignment to the external argument. Is it then correct to assume that this *suru* is in fact a heavy verb? In this section we compare the alternation structure *suru/naru* with heavy *suru/naru* and we go on to demonstrate that there is an essential difference between them with regard to theta role assignment to the internal argument. Examples of the heavy verb constructions are given below.

(15) a. Setsuko-ga doosookai-no kanji-o shi-ta.
Setsuko-Nom class reunion-Gen coordinator-Acc do-Past
‘Setsuko worked as the coordinator of the class reunion.’

b. Setsuko-ga doosookai-no kanji-ni
Setsuko-Nom class reunion-Gen coordinator-Dat
nat-ta.
become-Past
‘Setsuko became the coordinator of the class reunion.’

The examples illustrating the *suru/naru* alternation examined in this paper are repeated below.

Setsuko-Nom room-Acc clean-Prt do-Past
‘Setsuko cleaned the room.’

b. Heya-ga kireini nat-ta.
Room-Nom clean-Prt become-Past
‘The room became clean.’

The first thing that has to be mentioned is that the transitivity alternation phenomenon in (16) is similar to the transitivity alternation of transitive and unaccusative verbs found in Japanese as well as English, but the *suru/naru* in (15) do not represent this type of transitivity alternation.
The role of light verb projection in transitivity alternation

(17) a. Setsuko-ga heya-o katazuke-ta.
    Setsuko-Nom room-Acc arrange (trans)-Past
    ‘Setsuko arranged the room.’

b. Heya-ga katazui-ta.
    Room-Nom arrange (intr)-Past
    ‘The room was arranged.’

(18) a. John opened the window.

b. The window opened.

The common points between (17) and (18) are the fact that the transitive and unaccusative verbs have the same root morpheme, and that they assign the same thematic role to the internal argument. Moreover, the accusative NP in the transitive sentences receives nominative case in the unaccusative sentences, which is the prototypical pattern for the transitivity alternation structure. In general, such a transitivity alternation phenomenon is thought to be caused by the change in the thematic role of the external argument, while the common verbal root continues to assign the same theta role to the internal argument. That is to say, the constancy of the internal argument is the key to the achievement of the transitivity alternation.

On the other hand, even if suru is replaced by naru and the accusative NP is changed into nominative in (15), the transitivity alternation is not achieved.

(19) a. Setsuko-ga doosookai-no kanji-o shi-ta.
    Setsuko-Nom class reunion-Gen coordinator-Acc do-Past
    ‘Setsuko worked as the coordinator of the class reunion.’

b. *Doosookai-no kanji-ga nat-ta.
    Class reunion-Gen coordinator-Nom become-Past
    *‘The class reunion coordinator became.’

The accusative NP in (19a) was transformed into the subject of the unaccusative structure in (19b) and the result is ungrammatical. The fact that suru and naru are not interchangeable suggests that the thematic roles assigned to the internal arguments inherently belong to suru/naru, in other words that suru/naru themselves are the theta role assigners in these sentences. On the other hand, in (16)–(18) the alternation is possible, which suggests that in these constructions the element that assigns theta role to the internal argument is the shared morpheme. In (17) the root katazuke ‘arrange,’ in (18) the verb open and in (16) the non-finite predicate kirei ni ‘beautiful’ are the morphemes that play that role. In short, in (15) suru/naru are heavy verbs and are
involved in theta-role assignment to the internal argument, while in (16) they are light verbs and do not participate in theta-role assignment to the internal argument.

A further piece of evidence that supports this analysis is the fact that the non-finite predicate in (16) cannot be elided.

(20) a. Setsuko-ga doosookai-no kanji-o shi-ta.  
Setsuko-Nom class reunion-Gen coordinator-Acc do-Past  
Kaikei-mo shi-ta.  
Treasurer-Prt do-Past  
‘Setsuko coordinated the class reunion. She also did the accounting.’

b. Setsuko-ga doosookai-no kanji-ni  
Setsuko-Nom class reunion-Gen coordinator-Dat  
become-Past Keiko-Prt become-Past  
‘Setsuko became the coordinator of the class reunion. So did Keiko.’

Setsuko-Nom study-Acc beautiful-Prt do-Past  
*Kodomobeya-mo shi-ta.  
nursery-Prt do-Past  
‘Setsuko arranged the study nicely. She also did the nursery.’

b. Benkyoobeya-ga kire-ni nat-ta.  
Study-Nom beautiful-Prt become-Past  
*Kodomobeya-mo nat-ta.  
nursery-Prt become-Past  
‘The study was nicely arranged. So was the nursery.’

If in (16) theta role is assigned to the internal argument by suru/naru, then it is difficult to explain why (21) is ungrammatical. On the other hand, if the theta role assigner is the non-finite predicate, then (21) is ungrammatical because the theta role assigner is absent.

To summarise the above considerations, heavy suru/naru assign theta roles to both the internal and the external argument, while in the [non-finite stative predicate+suru/naru] structure the non-finite predicate assigns theta role to the internal argument. Even in this case suru is involved in the assignment of theta role to the external argument, but not to the internal argument. Thus, the suru/naru examined in this paper are involved in the assignment of theta role to the external argu-
ment, which is what triggers the transitivity alternation phenomenon and constitutes the main difference from the dummy verbs. They are also essentially different from the heavy verbs suru/naru in that they do not assign theta roles to internal arguments.

3.2. Suru/Naru and Secondary Predicates

In this section we compare the suru/naru in question to the secondary predicates that are formed with lexical verbs. Before the comparison with the suru/naru structure, let us clarify the syntactic structure of the secondary predicates. There are various opinions in the literature about the syntactic structure of the secondary predicate construction, but they all have in common the fact that the secondary predicate stands in a 'secondary' subject-predicate relationship with the argument in the sentence.8

(22) Setsuko-ga heya-o kirei-ni katazuke-ta.
    Setsuko-Nom room-Acc beautiful-Prt arrange (trans)-Past
    ‘Setsuko arranged the room nicely.’
(23) Heya-ga kirei-ni katazui-ta.
    Room-Nom beautiful-Prt arrange (intrans)-Past
    ‘The room was nicely arranged.’
(24) Setsuko-ga heya-o katazuke-ta.
    Setsuko-Nom room-Acc arrange (trans)-Past
    ‘Setsuko arranged the room.’
(25) Heya-ga katazui-ta.
    Room-Nom arrange (intrans)-Past
    ‘The room was arranged.’

The secondary predicate kirei ni ‘beautiful’ that appears in (22) and (23) does not have a decisive influence upon the formation of the sentence as shown in (24) and (25). It is therefore reasonable to assume that the secondary predicate is attached in an adjunct position to the main verb. This means that the thematic role is assigned to the object noun phrase heya ‘room’ by the main verb katazuketa/katazuita ‘arrange (trans)/(intrans).’ Since thematic roles are typically assigned by the head to its complements, the structure in (26) may be assumed.

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8 For the literature on secondary predicates in Japanese, see Koizumi (1994), Mihara (1998), among others.
This structure of the secondary predicate is supported by the properties of the Japanese indefinite pronouns, treated in Sakai (1998), Kishimoto (2001), and others. As seen in (27)–(29), the indefinite pronoun dare ‘who’ occurs with the particle mo to express the negative polarity meaning.

(27) Kenji-ga dare-mo ayashi-to omowanakat-ta.
    Kenji-Nom who-Prt suspect-Comp think-Neg-Past
    ‘Kenji did not think that anyone at all was suspect.’

(28) Kenji-ga dare-ga ayashii-to-mo omowanakat-ta.
    Kenji-Nom who-Nom suspect-Comp-Prt think-Neg-Past
    ‘Kenji did not think at all that someone was suspect.’

(29) *Dare-ga Kenji-ga ayashii-to-mo omowanakat-ta.
    Who-Nom Kenji-Nom suspect-Comp-Prt think-Neg-Past
    *‘Someone did not think that Kenji at all was suspect.’

The contrast between (28) and (29) shows that, if dare ‘who’ is not a constituent of the projection to which particle mo is adjoined, the negative polarity interpretation does not obtain. In (28) mo is attached to the complement clause dare ga ayashii ‘who is suspect,’ which contains the indefinite pronoun dare ‘who,’ and the negative interpretation is well-formed. However, in (29) dare ‘who’ is the subject of the main clause and is not included in the subordinate clause to which mo is adjoined, and so the negative polarity interpretation cannot be realised.

Based on these facts, the comparison between the secondary predicate structure and the complement clause structure goes as follows.

(30) a. Kenji-wa dare-mo ayashii-to omowanakat-ta.
    Kenji-Nom who-Prt suspect-Comp think-Neg-Past

b. Kenji-wa dare-o ayashii-to-mo omowanakat-ta.
    Kenji-Nom who-Acc suspect-Comp-Prt think-Neg-Past
‘Kenji did not think that anyone was suspect.’

(31) a. Setsuko-wa nani-mo kirei-ni
    Setsuko-Top what-Prt beautiful-Prt
    katazukanakat-ta.
    arrange (trans)-Neg-Past

b. *Setsuko-wa nani-o kirei-ni-mo
    Setsuko-Top what-Acc beautiful-Prt-Prt
    katazukanakat-ta.
    arrange (trans)-Neg-Past

‘Setsuko did not arrange anything nicely.’

    What-Prt beautiful-Prt arrange (intr)-Neg-Past

b. *Nani-ga kirei-ni-mo katazukanakat-ta.
    What-Nom beautiful-Prt-Prt arrange (intr)-Neg-Past

‘Nothing was arranged nicely.’

The contrast between (30) on the one hand and (31) and (32) on the other shows that in the complement clause structure the indefinite pronoun dare ‘who’ and the complement verb form together a constituent, whereas in the secondary predicate structure the indefinite pronoun nani ‘what’ does not form a constituent with the secondary predicate. This supports the structure assumed above, in (26), for the secondary predicate.

Having established the structure generated by the secondary predicates that occur with lexical verbs, let us now compare it with the structures containing suru/naru under discussion. The two structures are apparently very similar, but let us examine the following contrast.

(33) a. Setsuko-ga heya-o kirei-ni shi-ta.
    Setsuko-Nom room-Acc beautiful-Prt do-Past
    ‘Setsuko cleaned the room.’

b. *Setsuko-wa heya-o shi-ta.
    Setsuko-Top room-Acc do-Past
    ‘Lit. Setsuko did the room.’

(34) a. Heya-ga kirei-ni nat-ta.
    Room-Nom beautiful-Prt become-Past
    ‘The room became clean/was cleaned.’

b. *Heya-ga nat-ta.
    Room-Nom become-Past
    ‘Lit. The room became.’
In the structures that take *suru* and *naru* as the main verbs, the predicate *kirei ni* 'beautiful' cannot be elided, whereas in the structures in which lexical verbs are the main verbs the ellipsis is permitted. This difference can be explained considering the theta role assignment to the noun phrase *heya* 'room.' In the structures containing lexical verbs, *heya* 'room' receives the thematic role from the verbs *katazu* 'arrange.' In contrast, in the *suru/naru* constructions *heya* 'room' is assigned thematic role by the predicate *kirei ni* 'beautiful.' Therefore, if the predicate of the *suru/naru* constructions is elided, as in (33) and (34), the noun phrase *heya* 'room' cannot receive thematic role and consequently the construction becomes ungrammatical. On the other hand, in the lexical verb constructions, *heya* 'room' receives thematic role from the verb itself, and thus the secondary predicate can be elided.

If, as claimed here, thematic roles are in fact assigned to the object NP and the subject NP, respectively, only by the secondary predicate *kirei ni* in the *suru/naru* constructions, the structure of this construction must be different from that of the secondary verb construction. It is natural to assume that in both cases this is done by a direct head-argument relationship as shown in (37).
We shall now check whether the structure in (37) is correct or not using the indefinite pronoun and particle *mo* test used above.

(38)  

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<td>b.</td>
<td>Kenji-wa dare-o shiawase-ni-mo shinakat-ta.</td>
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Kenji-Top wh-Prt happy-Prt do-Neg-Past  
Kenji-Top who-Acc happy-Prt-Prt do-Neg-Past  
‘Kenji made no one happy.’

(39)  

| a. | Dare-mo shiawase-ni naranakat-ta.  |
| b. | Dare-ga shiawase-ni-mo naranakat-ta.  |

Who-Prt happy-Prt become-Neg-Past  
Who-Nom happy-Prt-Prt become-Neg-Past  
‘No one became happy.’

In (38) and (39) the negative polarity reading is realised. This supports the idea that the object NP and subject NP respectively form one constituent with the non-finite predicate in the *suru/naru* structure.

The main points of this section are summarised as follows: (a) In secondary predicate structures, because the main verb assigns thematic role to the object NP, they form one verb phrase, and the secondary verb becomes an adjunct in this verb phrase. (b) Unlike these structures, in the *suru/naru* constructions theta roles are assigned by the adjectival/adverbial predicate, and this predicate and the object NP form one constituent. (c) This structural difference can be verified using the negative polarity pronoun test.

3.3. *Suru/Naru* and Epistemic Verbs

As stated before, constructions with epistemic verbs and non-finite predicates have a similar structure to *suru/naru* constructions under
examination in this paper.

(40) a. Kenji-wa Kumiko-ga urayamashii-to omotte-iru.
   Kenji-Top Kumiko-Nom envious-Comp think-Cont
   ‘Kenji thinks that Kumiko is enviable.’

b. Kenji-wa Kumiko-o urayamashii-to omotte-iru.
   Kenji-Top Kumiko-Acc envious-Comp think-Cont
   ‘Kenji thinks enviously of Kumiko.’

c. Kenji-wa Kumiko-o urayamashiku omotte-iru.
   Kenji-Top Kumiko-Acc enviously think-Cont
   ‘Kenji thinks enviously of Kumiko.’

Taking into account that in (40a) and (40b) the predicate is finite and accompanied by the complementizer, the structure is similar to the English Exceptional Case Marking (ECM) structure. This analysis has been argued for in numerous previous studies (Kuno (1976), Kaneko (1988), Sakai (1994, 1998) among others).9 That is to say, in such a structure the predicate urayamashii ‘enviable’ forms a subordinate clause together with Kumiko-ga/Kumiko-o. Based on this analysis, Takezawa (1987, 1998) claims that (40c) has a small clause structure.10

The epistemic verb structure with non-finite predicate (40c) looks quite similar to the [non-finite stative predicate+suru/naru] structure. However, the following examples reveals a number of semantic and syntactic differences between them.

(41) a. Kaoru-wa kodomotati-ga fumanda-to omot-ta.
   Kaoru-Top children-Nom dissatisfied-Comp think-Past
   ‘Kaoru thought that the children were discontented.’

b. Kaoru-wa kodomotati-o fuman-ni omot-ta.
   Kaoru-Top children-Acc discontent-Prt think-Past
   ‘Kaoru regarded the children as discontented.’

(42) a. Kenji-wa Mayumi-ga kaeritasooda-to omot-ta.
   Kenji-Top Mayumi-Nom want to go-Comp think-Past
   ‘Kenji thought that Mayumi wanted to leave.’

b. *Kenji-wa Mayumi-o kaeritasoo-ni omot-ta.
   Kenji-Top Mayumi-Acc want to go-Prt think-Past
   ‘Kenji thought that Mayumi wanted to leave.’

9 Studies within newer theoretical frameworks and studies on the theoretical problems posed by this phenomenon are Hiraïwa (2001) and Kobayashi and Maki (2002).

10 Mihara (1998) claims that the accusative NP is generated inside the VP projected by the epistemic verb, and that PRO exists inside the small clause.
In (40) both the structure containing a non-finite predicate and the one containing a finite predicate are grammatical and have roughly the same meaning. However, in (41) it is difficult to say that the meaning of (41a) is similar to (41b), and the grammaticality is degraded in (42b). The most important difference between (40) on the one hand and (41) and (42) on the other is that in (40a) the predicates of the embedded clauses, urayamashii ‘enviable’ express the emotion/opinion of the subject of the main clause, while in (41a) and (42a) the predicates of the embedded clauses, fuman da ‘discontented’ or kaeritasooda ‘want to go’ cannot express the emotion/opinion of the main clause subject. The fact that non-finite predicates in (41b) and (42b) cannot express emotions/opinions of someone else than the main clause subject suggests that non-finite predicates, unlike the predicates of complement clauses, are modifiers of the main clause predicate and are therefore limited to expressing the emotions/opinions of the main clause subject.

If this observation is correct, non-finite predicates will not form subordinate clauses, but will be added as modifiers to the main clause predicate. This means that they have a structure similar to that proposed by Mihara (1998) for secondary predicates. Let us verify this by using the indefinite pronoun test.

(43) a. Kenji-wa dare-mo urayamashiku omowanakat-ta.  
   Kenji-Top who-Prt enviously think-Neg-Past

b. ?? Kenji-wa dare-o urayamashiku-mo omowanakat-ta. 
   Kenji-Top who-Acc enviously-Prt think-Neg-Past

‘Kenji did not think that anyone was enviable.’

The judgement is subtle, but by attaching mo to the negative form of epistemic verbs it is more difficult to obtain the negative polarity reading for the pronoun in the object position than for the suru/naru structure. This result supports the analysis whereby the non-finite predicates that occur with epistemic verbs are in fact adjuncts. If this is the case, then epistemic verbs have a structure similar to secondary predicates and different from the suru/naru construction.11

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11 There is one similarity between the epistemic verbs with non-finite predicate and the suru/naru with the non-finite predicate.

(i) a. Kenji-wa Kumiko-o urayamashiku omot-ta.  
   Kenji-Top Kumiko-Acc envious-Prt think-Past

b. ?? Kenji-wa urayamashiku Kumiko-o omot-ta. 
   Kenji-Top envious-Prt Kumiko-Acc think-Past
In section 3 we have compared the suru/naru in question with heavy suru/naru, with lexical transitive and unaccusative verbs and with epistemic verbs accompanied by non-finite predicates and have found that they have quite different properties. The most important point is that the internal theta-role is assigned by either a lexical verb or an epistemic verb that is modified by non-finite predicates. In the suru/naru structure, it is the non-finite stative predicate that plays the central role in theta-role assignment. If we assume suru/naru with non-finite stative predicate as heavy (lexical) verbs, we must include an additional type of heavy verbs that have such exceptional properties into the lexical inventory of Japanese. Since such assumption is quite costly and theoretically not welcome, we conclude that suru/naru with non-finite stative predicate is not a heavy verb.

4. Suru/Naru as Light Verbs

In sections 2 and 3 we have shown that the suru/naru studied in this paper are different from the dummy verb, which is inserted under T, as well as from heavy verbs, which are inserted under V. In this section we look at the properties of suru/naru regarding theta role assignment and their position in the phrase structure, and we demonstrate that these are the same as for light verbs v/v*.

To summarise the properties regarding theta role assignment, as mentioned before, Chomsky (2001) proposes that light verbs v/v* do not participate in theta role assignment to the internal argument, but that v* does assign theta role to the external argument. As we have seen in sections 2 and 3, in the [non-finite stative predicate+suru] construction

(i) 'Kenji thought that Kumiko was enviable.'
      Kenji-Top room-Acc beautiful-Prt do-Past
      Kenji-Top beautiful-Prt room-Acc do-Past
      'Kenji arranged the room nicely.'

Scrambling of the predicate is disallowed in either of these structures. Fukumitsu (2001) starts from Stowell’s (1991) analysis of the English small clause and proposes that in the Japanese constructions with epistemic verbs and non-finite predicates, the non-finite predicate raises to the position of the main verb at LF to assign a theta-role to the accusative NP. The ungrammaticality of (ib) and (iib) can be attributed to the failure of such raising.
the object receives its theta role from the adjective that constitutes the non-finite predicate, and *suru only assigns theta role to the external argument. However, *naru does not assign either the internal theta role or the external theta role. The examples that prove this point are repeated below.

(44) Benkyoobeya-ga kirei-ni nat-ta.
Study-Nom beautiful-Prt become-Past
*Kodomobeya-mo nat-ta.
Nursery-Prt become-Past
‘The study was nicely arranged. So was the nursery.’

(45) Setsuko-ga bennkyoobeya-o kirei-ni shi-ta.
Setsuko-Nom study-Acc beautiful-Prt do-Past
*Kodomobeya-mo shi-ta. / Kumiko-mo shi-ta.
Nursery-Prt do-Past / Kumiko-Prt do-Past
‘Setsuko arranged the study nicely. She also did the nursery./So did Kumiko.’

When the non-finite predicate is elided, as in (44) and (45), the only variant that is allowed is the one with *suru and the external argument. That is, when the non-finite predicate is elided, *suru assigns theta role to the external predicate, but neither *suru nor *naru assign theta role to the internal argument. This property is exactly identical to the property proposed by Chomsky for v/v*.

We now turn to the position in the phrase structure. As seen in section 2, our target *suru/naru are not heavy verbs. Therefore, their position is not under V but either lower or higher. However, taking into account that *suru assigns theta role to the external argument, a position lower than V is impossible. That is to say, *suru/naru are higher than V in the phrase structure. Moreover, taking into account the discussion in section 3, because *suru/naru are not dummy verbs, their position is not T, but a position either higher or lower than that. However, as seen in (46) below, *suru/naru occur before aspectual, negation and tense morphemes in complex predicates.

(46) a. Setsuko-wa benkyoobeya-o kirei-ni
Setsuko-Top study-Acc beautiful-Prt
shite-i-nakat-ta.
do-Perf-Neg-Past
‘Setsuko was not arranging the room nicely.’

Study-Nom beautiful-Prt become-Perf-Neg-Past
'The room had not become nice.'

Given these facts, our suru/naru must occupy a position lower than T, and even more, a position even closer to the predicate than aspect and negation morphemes. As Stroik (2001) indicates, this is exactly the position that should be occupied by v/v*. As a result, the structure of suru/naru with non-finite predicates is shown in (47) below.

(47)

\[
\text{TP} \rightarrow \text{vP} \rightarrow \text{T} \\
\text{NP} \rightarrow \text{v'} \rightarrow (\text{AP} \rightarrow \text{v} \rightarrow (\text{NP} \rightarrow \text{A} \rightarrow \text{su/na} - \text{ru}) \rightarrow \text{heya} \text{ kirei-ni})
\]

To summarise the discussion above, in terms of both theta role assignment and position in phrase structure, it is correct to affirm that the suru/naru that occur with non-finite predicates occupy the light verb v/v* position. Also considering that of the three theoretical possibilities outlined in section 1, the other two possibilities have been denied, our suru/naru cannot but be the light verbs v/v*.

5. The Role of Light Verb Projection in Parametric Syntax

We have demonstrated in our discussion in sections 1 through 4 that the suru/naru that occur with non-finite predicates can only be the light verbs v/v* proposed by Chomsky (2001). In section 5 we look at the significance of the proposal made in this paper that Japanese has the functional category v/v* from the standpoint of universal phrase structure theory and of parametric syntax.

We would first like to point out that the structure studied in this paper, formed of a non-finite predicate and suru/naru, is somewhat special and could be considered an adjectival predicate construction. The fact that in such constructions there exists the functional category pro-
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jection of $v/v^*$ strongly supports studies like Nishiyama (2000), Hasegawa (2001) and others. If there is no positive evidence to the contrary, there is no need to assume that in the same language the basic phrase structure is different for different constructions. Consequently, it is correct to assume that the projection of $v/v^*$ exists in general in all transitive, unergative or unaccusative constructions. As mentioned above, Nishiyama and Hasegawa did propose such analyses, but they lacked empirical proof for the existence of the $v/v^*$ projection. The existence of the evidence presented in this paper is extremely significant for the universality of clause architecture.

Secondly, empirical evidence as to the existence of $v/v^*$ has hardly been produced in English or other European languages. Stroik (2001) does point out the interesting possibility that special instances of *do are in fact $v^*$, but as we have already mentioned, the data is not quite convincing. Moreover, it is totally unknown whether there exists any element in English that corresponds to the unaccusative $v$. The fact that this paper points out to elements corresponding to both $v$ and $v^*$ and brings proof thereof is an important contribution to this issue.

Having considered the theoretical significance of the existence of $v/v^*$ and proof thereof for the universality of phrase structure, let us now turn to the significance of this paper for the parametric syntax theory. Having established that light verbs $v/v^*$ do in fact exist in Japanese, the question is whether they are the same as in English or not. Looking once more over sections 2 through 4, the answer could only be ‘No.’

Firstly, English light verbs are considered empty functional categories. The case indicated by Stroik, where they assume the form of *do, is probably a special one, and in general transitive, unergative and unaccusative constructions there is no overt morpheme that corresponds to $v/v^*$. On the other hand, in Japanese it is possible for the light verb to assume the overt forms suru and naru, and in general transitive, unergative and unaccusative constructions it often does assume the form of verb ending morphemes. In Fukui and Sakai (2003) it is argued that functional categories must be overt because they are acquired a posteriori. In order to fulfil this visibility condition in English, which does not have overt morphemes for most of the functional categories, the option to move the elements to the Specifier position of these functional categories is used, whereas in Japanese, where functional categories have overt morphemes, this movement is not necessary. The fact shown in this paper, that Japanese has overt morphemes for the light
verb, while in most cases English does not, is in accord with Fukui and Sakai’s claim.

The next important point is, as shown in section 3, that in the structures with *suru* the non-finite predicate and the accusative NP form a syntactic constituent, and in the structure with *naru* the non-finite predicate and the nominative NP form a syntactic constituent. That is to say, Japanese light verbs, unlike English light verbs, do not trigger the movement of the accusative and nominative NPs into the domain of \( v/v^* \). This point can be further verified in the following examples.

(48) Setsuko-wa kdomobeya-o atatakaku katsu daidokoro-o
Setsuko-Top nursery-Acc warm Conj kitchen-Acc
cool do-Past
’setsuko warmed the nursery and cooled the kitchen.’

(49) Kodomobeya-ga atatakaku katsu daidokoro-ga suzushiku
Nursery-Nom warm Conj kitchen-Nom cool
become-Past
‘The nursery was warmed and the kitchen was cooled.’

*Katsu* is a conjunction morpheme that logically requires strict coordination, and in (48) it connects a pair of accusative NP and non-finite predicate structures and in (49) a pair of nominative NP and non-finite predicate structures.\(^{12}\) For such connections to be possible it is necessary for these elements to be in a constituent relationship. That is to say, the basic sentence structure of Japanese is not (50a) but (50b).

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\(^{12}\) In Japanese there are several expressions that require coordination connection, such as case particle *to* and particle *mo*. Of these, the strictest contact is required by *katsu*. For the properties of other constituents, see Fukui and Sakai (2003).
(50b) indicates that neither the raising of object to vP nor the raising of subject to TP take place. However, distribution of case-markers in transitive and unaccusative sentences is decided, as in English, by the selection of v or v*. That is to say, v* is indispensable in licensing the accusative Case. Summarising these observations, it is possible to say that v* can check the accusative Case of the object embedded in the verb phrase VP or adjective phrase AP. The same reasoning applies to the case of the nominative Case and T. This result supports the claim of Chomsky (2001), whereby the Agree mechanism can eliminate uninterpretable features irrespective of raising into the domain of functional categories by Move. Finally, this result also supports the English-Japanese comparative syntax analyses by Fukui (1986, 1995), Kuroda (1988) and others, that claim that Japanese does not have Spec-Head agreement.

In this section we have looked at the significance of the result that in non-stative finite predicate structures suru/naru are the overt manifestation of v/v* from the perspective of the universality of phrase structure and of parametric syntax. In both cases the analysis proposed here is of significant consequence.

6. Conclusion

In this paper we have examined in detail the construction with non-finite predicates with suru/naru, and we have concluded that suru/naru are in fact light verbs v/v*. This result suggests the universality of the
basic sentence structure and, besides offering empirical evidence for the existence of light verbs \( v/v^* \), it points out the parametric differences between English and Japanese phrase structures. From a theoretical perspective, it also offers empirical evidence for Chomsky’s (2001) separate treatment of Agree from Move.

Finally, we would like to mention a structure that, although a light verb structure, could not be treated in this paper. This is the so-called light verb construction, treated in Grimshaw and Mester (1988), formed with a Sino-Japanese noun and \textit{suru}. As seen in the examples below, in some instances this structure allows transitivity alternation, while in others it does not.

\begin{enumerate}
\item\textbf{(51)}
\begin{enumerate}
\item a. Takashi-ga omocha-o hakai shi-ta.
\end{enumerate}
\begin{enumerate}
\item Takas-Nom toy-Acc destruction do-Past
\end{enumerate}
\begin{enumerate}
\item ‘Takashi destroyed the toy.’
\end{enumerate}
\begin{enumerate}
\item b. *Omocha-ga hakai-ni nat-ta.
\end{enumerate}
\begin{enumerate}
\item Toy-Nom destruction-Prt become-Past
\end{enumerate}
\begin{enumerate}
\item ‘The toy was destroyed.’
\end{enumerate}
\end{enumerate}

\begin{enumerate}
\item\textbf{(52)}
\begin{enumerate}
\item a. Keiko-wa doosookai-o enki shi-ta.
\end{enumerate}
\begin{enumerate}
\item Keiko-Top class reunion-Acc postponement do-Past
\end{enumerate}
\begin{enumerate}
\item ‘Keiko postponed the class reunion.’
\end{enumerate}
\begin{enumerate}
\item b. Doosookai-ga enki-ni nat-ta.
\end{enumerate}
\begin{enumerate}
\item class reunion-Nom postponement-Prt become-Past
\end{enumerate}
\begin{enumerate}
\item ‘The class reunion was postponed.’
\end{enumerate}
\end{enumerate}

The framework proposed in this paper is useful in the analysis of sentences like (52), where the transitivity alternation is possible. The existence of examples like (51), where the alternation is disallowed, suggests that these Sino-Japanese nouns have inherent aspectual meaning regardless of \( v/v^* \). That is to say, it is not the case that Sino-Japanese nouns correspond to \( V \) and \textit{suru} corresponds to \( v^* \), but rather that \([\text{Noun}+\text{suru}]\) as a whole has similar functions to \([V+v^*]\) complex. An analysis that covers all the cases of \textit{suru/naru} constructions, including Sino-Japanese compounds, remains the topic of future studies.

\footnote{Miyagawa (1989), Tsujimura (1990), and Kageyama (1993) argue that the ‘unaccusativity’ is attributed to Sino-Japanese nouns as an inherent property.}
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