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岸本, 秀樹

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KOBE UNIVERSITY

Tripartite verbal structure and extended predicate formation: Arguments from Japanese*

Hideki Kishimoto
Kobe University

Abstract
In this paper, it is first shown that verbal structure includes the lexical head R, which functions as a predicate head, and two functional heads v_{tr}P and v_{cat}P. Then I argue that while agentive *suru* is a general activity predicate, its non-agentive counterpart, i.e. non-agentive *suru*, is a predicate with no concrete semantic content. By virtue of this property, non-agentive *suru* allows its closest argument to be added to R to form an extended predicate, and the argument provides a specific semantic content for the non-agentive *suru*. Once the type of construction in which non-agentive *suru* is used is fixed by the argument in RP, the complex RP serves as a full-fledged predicate.

Keywords: extended predicate formation; tripartite verbal structure; non-agentive *suru* 'do'; Japanese

1. Introduction

In the present paper, I argue, on the basis of Japanese data, that a predicative complex, which consists of a verb plus an argument, can be formed in the syntax. I suggest that non-agentive *suru* is a predicate which is devoid of its semantic content, so that some qualifying expression needs to be added to R containing the *suru* head to determine the type of construction in which non-agentive *suru* can occur. The complex formed with *suru* and the argument in RP is shown to serve as a full complex predicate once the use of non-agentive *suru* is identified with the help of the expression appearing in RP.

This paper will push forward two proposals relating to the syntax of predication. One proposal has to do with verbal structure, and I claim that verbal structure consists of three layers of projections although the split vP analysis, which posits that v and V respectively introduce external and internal arguments, is currently prevalent in the literature. A second proposal concerns syntactic predicate formation. I argue that with non-agentive *suru* 'do', an argument (or an adverbial) may be merged with R (comprising a predicate head) to project to RP (i.e. it forms some kind of composite predicate containing a phrasal argument).

The discussion proceeds as follows. In section 2, I argue, basing my discussion on Japanese verbal morphology, that verbal structure has three-layers of projections, headed

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by two functional heads v_{tr} and v_{cat} and one single lexical head R. In section 3, it is argued that non-agentive *suru* allows its associated argument to merge with R to form an extended predicate (RP). Section 4 is a discussion of weather verbs which also form extended predicates with their subjects. A conclusion is presented in section 5.

2. Tripartite verbal structure

In this section, I propose an analysis taking the verbal structure to contain two functional heads of v_{tr} (transitivizer), which introduces an external argument, and v_{cat} (category-identifier), which introduces an internal argument, alongside lexical R (root), which serves as a predicate syntactically. The commonly-assumed split vP structure analysis takes it that verbal structure consists of two projections vP and VP (Chomsky 1995; see also Bowers 1993, 2001, Kratzer 1996), and there are also analyses which posit VoiceP above vP additionally (Pylkkänen 2008, Harley 2013, 2017). Although the split vP analysis is currently a prevalent hypothesis, I argue for the proposed analysis, basing my discussion on Japanese verbal morphology.

2.1. Tripartite verbal structure

The tripartite verbal structure analysis is motivated by the morphological facts of deadjectival and denominal verbs. To begin, observe the morphological paradigm of deadjectival verb formation in (1) (Kishimoto (2023) cf. Oseki (2017)).

(1) Deadjectival verb formation
  a. adjective: *kata-i* 'solid'
  b. intransitive verb: *kata-**m-ar**-u* 'become solid'
  c. transitive verb: *kata-**m-e**-ru* 'make solid'

It is often claimed (e.g. Sugioka 2002) that an adjective like *kata-i* 'solid', which has the sequence of *kata* (stem) + *i* (tense), can be rendered as an intransitive verb (*katamar-u* 'become solid') with the addition of the affix *-mar* to the root *kata*, and a transitive verb (*katame-ru* 'make round') can be derived by adding the affix *-me*. These affixes are usually viewed as simple affixes, but they can in fact be further decomposed into *m-ar* and *m-e*. As is often discussed (see e.g. Jacobsen 1991), *-ar* and *-e* are a pair of morphemes which are used to fix the transitivity of some verbs, as can be seen from the pair of intransitive *kimaru* 'be decided' and transitive *kimeru* 'decide' in (2).

(2) a. intransitive verb: *kim-**ar**-u* 'decide'
  b. transitive verb: *kim-**e**-ru* 'be decided'

In light of this fact, I postulate that the deadjectival verb *katamaru* and *katameru* comprise the verbalizing affix **-***m*, and *-ar* and *-e* are transitivity affixes*,* i.e. *-ar is* an intransitivizer, and *-e*, a transitivizer. Then the deadjectival verbs *katamaru* 'become solid' and *katameru* 'make solid' can be regarded as possessing the sequence of "root+verbalizer +transitivizer+tense".

Essentially the same point can be made with regard to the denominal verbs derived from the nominal *tuna* 'rope', as in (3).[1]

(3) Denominal verb formation
a. noun: *tuna* 'rope'
b. intransitive verb: *tuna-**g**-**ar**-u* 'become linked'
c. transitive verb: *tuna-**g**-**ϕ**-u* 'link'

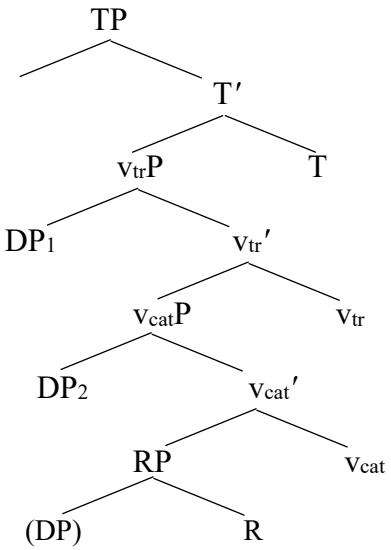
The denominal verbs *tunagaru* and *tunagu* in (3) respectively have the morphemes *-ga-r* and *-g* attached to the root *tuna*. Note that *ar* signals that the verb is intransitive, as seen from (4).

(4) a. intransitive verb: *tukam-**ar**-u* 'be held'
b. transitive verb: *tukam-**ϕ**-u* 'hold'

This fact suggests that *-g* represents a verbalizer, and that *-ar* is an intransitivizer. From this, it is fair to state that the denominal verbs *tunagaru* and *tunagu* have the sequence of "root+verbalizer +transitivizer+tense".

The morphological facts of deadjectival and denominal verbs suggest that the verbal category of the root is determined by a verbalizer (cf. Embick and Marantz 2008), and then its transitivity is fixed by a transitivizer. Given that the tense marker follows these markers, it can be stated that the clause structure includes three distinct verbal heads, R (=root), v_{cat} (=categorizer), and v_{tr} (=transitivizer), as in (5).

(5)



It is reasonable to postulate that v_{tr} and v_{cat} are functional categories, and R a lexical category, which serves as a predicate head syntactically. Following a line of reasoning that some functional projection mediates an argument-predicate relation (e.g. den Dikken 2006), I postulate that if RP does not form an extended predicate, arguments appear in

[1] To my knowledge, only two nouns *mata* and *tuna* can be converted to verbs via the suffix *-g*. A pair of verbs *matagaru* 'straddle' and *matagu* 'straddle over' is another case in point.

the specifier position of functional projections, and receive a θ-role from them. I assume here that v_{tr} assigns a θ-role to an external argument (DP_1), and v_{cat} assigns a θ-role to an internal argument (DP_2).

In this analysis, the argument forming an extended predicate with *suru* is placed in a position lower than an accusative object, which is often assumed to appear in the lowest structural position. Nevertheless, there is an indication that some expressions can appear in a position lower than an accusative object can be obtained by the facts of depictive predication (Kishimoto 2023).

(6) **Titioya-ga kooen-ni kare$_i$-o* [*Ken$_i$-no itumo-no kakkoo-de*]
father-NOM park-to he-ACC Ken-GEN usual-GEN appearance-in
ture-te it-ta.
take-GER go-PST
'Father took him$_i$ to the parkin Ken$_i$'s usual clothes.'

In (6), the object-oriented depictive contains *Ken*, and the accusative pronominal *kare* cannot be coreferential with *Ken* in (6). This fact suggests that pronominal binding is not possible since the pronominal *kare* 'he' is located in a position which c-commands *Ken*. Given this fact, it is reasonable to postulate that the depictive is adjoined to a projection lower than the one including the object. This being so, it is plausible to posit that the depictive is added to R, which suggests in turn that v_{CAT} rather than R accommodates an object that is assigned a θ-role.

3. Extended predicate formation

In this section, it is argued that non-agentive *suru* does not have a substantive semantic content to serve as a predicate, and that as such, an extended predicate needs to be derived in combination with an expression to supply *suru* with a specific semantic content.

3.1. Agentive *suru* versus non-agentive *suru*

Let us begin by noting some uses of the verb *suru* 'do' in Japanese. The verb *suru* 'do' is considered to be a general activity verb selecting an agentive subject, as with English *do*, but can have non-agentive uses. (Non-agentive *suru* is in many cases used intransitively: Terada 1990, Kageyama 1993, Miyamoto and Kishimoto 2016, Kishimoto 2025b). Agentive *suru* is most typically used as a transitive verb, but can also be used intransitively, as exemplified in (7).

(7) <u>Transitive</u>
a. *siai-o suru* (game-ACC do) 'play a game' [volitional action]
b. *isya-o suru* (doctor-ACC do) 'practice medicine' [profession]
c. *kare-o isya-ni suru* (him-ACC doctor-COP do) 'make him a doctor' [causative]
d. *nekutai-o suru* (tie-ACC do) 'wear necktie' [dressing]
e. *seki-o suru* (cough-ACC do) 'cough' [controllable physiological process]
<u>Intransitive</u>
f. *reigi-tadasiku suru* (politely do) 'behave politely' [behavior]
g. *urouro suru* (loitering do) 'hang around' [mimetic, volitional motion]

Some representative examples of non-agentive *suru* are given in (8).

(8) Intransitive
a. *inabikari-ga suru* (lightning-NOM do) 'there is lightning' [natural phenomenon]
b. *oto-ga suru* (sound-NOM do) 'sound' [natural occurrence]
c. *memai-ga suru* (sound-NOM do) 'feel dizzy' [physiological sensation]
d. *azi-ga suru* (taste-NOM do) 'have a taste' [taste]
e. *san-byaku yen suru* (three-hundred yen do) 'cost three hundred yen' [price]
f. (*mado-ga*) *gatagata suru* (window-NOM shaking do) 'shake' [mimetic, non-volitional motion]
Transitive
g. *byooki-o suru* (sick-ACC do) 'down with a disease' [uncontrollable physiological process]

Transitive *suru* taking an agentive subject can be combined with a variety of objects, and the sentences with agentive *suru* can express a number of activity meanings. Sentences with intransitive non-agentive *suru* can be constructed with a limited set of subjects, and can carry non-stative (eventive) meanings (e.g. (8a), (8b), (8f)) or stative meanings (e.g. (8c,) (8d), (8e)), whose uses are determined depending on the type of combined argument that occurs contiguous with *suru*. Given this fact, I suggest that the argument appearing closest to *suru* is responsible for fixing the meanings of the non-agentive *suru* constructions, while non-agentive *suru* does not have a semantic content of its own.

3.2. Non-agentive *suru* as a semantically-vacuous predicate

Non-agentive *suru* constructions can express a variety of meanings, which can be thought to originate from the argument occurring contiguous with *suru*. This fact suggests that non-agentive *suru* does not have a semantic content. One such indication may be obtained from the facts of *dekiru* 'can do' replacement. The verb *dekiru* is the suppletive form of *suru* which is used to express a potential meaning (Kageyama 1993). This replacement is possible with agentive *suru*.[2]

(9) a. *John-ga* *siai-o* *si-ta*.
John-NOM game-ACC do-PST
'John played a game.'
b. *John-ga* *siai-ga* *deki-ta*.
John-NOM game-NOM can.do-PST
'John could play a game.'

While (9a) with agentive *suru* expresses an eventive meaning of "John played a game", (9b) with *dekiru* carries a stative potential meaning of "John was able to play a game". By contrast, non-agentive *suru* cannot be replaced by the suppletive *dekiru*, as exemplified in (10).[3]

[2] The potential forms of verbs express stative meanings, and owing to this fact, the case frame changes from "nominative-accusative" to "nominative-nominative".
[3] In (10), non-agentive *suru* is intransitive, so that *memai* 'dizzy' receives nominative case marking. Semantically, the sequence of *memai-ga suru* carries the meaning of physiological sensation, so that the experiencer appears in the clause marked with

(10) a. *John-wa memai-ga si-ta.*
John-TOP dizziness-NOM do-PST
'John felt dizzy.'
b. **John-wa memai-ga deki-ta.*
John-TOP dizziness -NOM can.do-PST
'John could feel dizzy.'

While *dekiru* replacement cannot be applied to (10), it is legitimate to have a potential form of the predicate *kanziru* 'feel', as seen in (11).

(11) a. *John-wa memai-o kanzi-ta.*
John-TOP dizziness-ACC feel-PST
'John felt dizzy.'
b. *John-ni memai-ga kanzi-rare-ta.*
John-DAT dizziness -NOM feel-POTEN-PST
'John could feel dizzy.'

The sequence of *memai-ga suru* has a meaning which can be roughly paraphrased as *memai-o kanziru* 'feel dizziness" in (11a). If *kanzi-rare-ru* 'can feel dizzy' can replace *memai-o kanziru*, the sequence *memai-ga dekiru* in (10b), which has the potential form of *suru*, will be expected to have the meaning 'can feel dizzy'. Nevertheless, (10b) is not acceptable.

It is worthwhile to note that *suru* can be combined with a limited set of nouns to derive compound verbs, as exemplified in (12) (see Kishimoto and Yu 2019).[4]

(12) a. *men-suru* (face-do) 'face'
b. *atai-suru* (value-do) 'be worthwhile'
c. *namida-suru* (tears-do) 'shed tears'
d. *kokoro-suru* (heart-do) 'be mindful'
e. *ase-suru* (sweat-do) 'sweat'

With the N-*suru* compound verbs in (12), their substantial meanings come from nouns. The nouns in the NP-compounds in (12) refer to entities, and thus are not event nouns. When they are compounded with *suru*, the entire compounds describe some events or the states pertinent to the entities referred to by the nouns literally or figuratively.

The fact noted above suggests that *suru* has a function of turning a nominal into a verb categorically (with no semantic content). In the present perspective, the N-*suru*

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nominative case (in a way similar to a major subject receives nominative case; see Kishimoto 2025b).

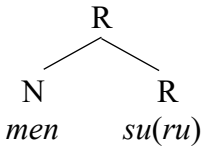
[4] Japanese abounds with N-V compound verbs, as seen from some representative examples given in (i).

(i) a. *iro-zuku* (color-attach) 'change color'
b. *katati-zukuru* (form-make) 'shape'
c. *hana-saku* (flower-bloom) 'bloom'

This fact suggests that R can be complex in Japanese, i.e. R can form a complex predicate with a nominal element in it, as [$_R$ [$_N$ N] R]].

compound *men-suru* ‘face (v)’ obtains the concrete semantic content from the N with the configuration in (13).

(13)



Men-suru is a compound verb, and thus, the noun is included in R in (13). The noun *men* provides a semantic content (just like an English denominal verb like *face* (v.) converted from the noun *face* (n.)), while *suru* specifies that the complex head acts as a predicate, as represented in (14) (i.e. the symbol P indicates that it is a predicate, with its content being unspecified).[5]

(14) *men*: ‘face’ + *suru*: P (x, y) ⇒ **face′** (x, y)

Once the semantic content of *men-suru* is specified by the noun *men* as in (14), the N-*suru* compound functions as a two-place stative predicate.

Even when N-*suru* compounds express non-stative (or eventive) meanings, the suppletive form *dekiru* cannot be compounded with the nouns (Kishimoto and Yu 2019). Consider (15).

(15) *Ano hito-ga* {*namida-si-ta*/**namida-deki-ta*}.
that man-NOM {tear-do-PST/tear-can.do-PST}
‘That man {shed/could shed} tears.’

Namida-suru means “shed tears”, which is a verbal meaning furnished by *namida*. Semantically, there is no reason why *namida-dekiru* in (15) should carry the meaning of “can shed tears”, since the verb *nagasu* ‘shed’ can be turned into its potential form.

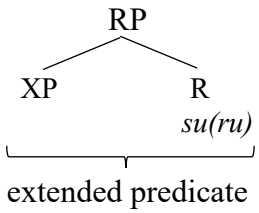
(16) *Ano hito-ga namida-o* {*nagasi-ta*/*nagase-ta*}.
that man-NOM tear-ACC {shed-PST/can.shed-PST}
‘That man {shed/could shed} tears.’

It is reasonable to state then that the suppletive form of *dekiru* ‘can do’, which possesses a potential meaning, is not usable for substituting for *suru* in N-*suru* compounds on the ground that *suru* does not include a substantive semantic content. The data suggest that the semantic content of N-*suru* compounds is supplied by the noun, but not *suru*.

Given that *dekiru* replacement is not possible with the non-agentive *suru* constructions in (8), as with N-*suru* compounds, it is reasonable to assume that a similar predicate formation process applies to non-agentive *suru*. I suggest that non-agentive *suru* has a specification as a predicate (P) with no semantic content and forms an extended predicate with the expression occurring adjacent to it.

[5] The formation of N-*suru* compound is not a fully productive process since the compound cannot be formed on any type of noun, as exemplified by the impossibility of **atama-suru* ‘head-do’.

(17)



In the present perspective, ordinary arguments that receive a θ-role appear in a higher functional projection of v_{tr} or v_{cat}. Thus, these arguments are not merged with R. Note that non-agentive *suru* does not qualify as a full-fledged predicate by itself syntactically with no semantic content, so that the expression XP occurring closest to non-agentive *suru* is merged with R to provide a concrete semantic content with the composite predicate RP.

To be a little more concrete, let us consider how an extended predicate is formed in (18), which describes the event of sound emission.

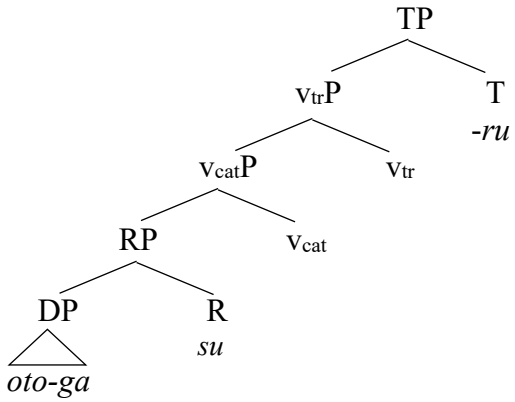
(18) *Mukoo-kara* (*ookina*) *oto-ga* *si-te* *i-ta*.
over.there-from loud sound-NOM do-GER be-PST
'A (loud) sound was heard from over there.'

In the non-agentive *suru* construction which expresses the sense of sound emission in (18), the nominative DP must represent a sound or a voice, but cannot be a song even if it may broadly be construed as a kind of sound.

(19) *Mukoo-kara* {*bakuhatu-on/koe/uta-goe/*uta*}*-ga*
over.there-from {explosion-sound/voice/song-voice/song}-NOM
si-te *i-ta*.
do-GER be-PST
'{An explosive sound /A voice/A singing voice/A song} was heard from over there.'

The root of non-agentive *suru* in (18) occupies the R-head position. Since *suru* requires a specific kind of noun referring to a sound, it is reasonable to posit that the semantic content of *suru* is supplied by an XP inside RP. This being so, the DP *oto* 'sound' in (18) should appear in RP, as illustrated in (20).

(20)



The nominative argument appearing in RP has phrasal (XP) status, so that it can

accommodate an adjectival modifier like *ookina* 'loud', and it can also be separated from the verb *suru*, as in (21).[6]

(21) [*Ookina oto-ga*]$_i$ *mukoo-kara* t_i *si-te i-ta*.
loud sound-NOM over.there-from do-GER be-PST
'A (loud) sound was heard from over there.'

(21) suggests that RP is a composite predicate consisting of *suru* plus a nominative DP. If the nominative argument *oto* is added to R, RP can gain a semantic content from this argument.

(22) *oto*: 'sound' + *suru*: P (x) ⇒ **be.heard′** (sound)

Since the event of emitting a sound is closely tied to the noun *oto* 'sound', the extended predicate complex can be assumed to acquire the eventive meaning (denotation) represented by **be.heard′** (x). In addition, the subject *oto* directly fills the variable position x in **be.heard′** (x), and as a result, the zero-valence predicate with the meaning of **be.heard′** (sound) is derived. In (20), therefore, the proposition is complete at the level of RP, so no argument appears in a position where a θ-role is assigned by v.

Empirical evidence in favor of the view that non-agentive *suru* functions as a predicate on the condition that a qualifying expression provides a specified semantic content may be derived from *wh*-questioning.

(23) *Mukoo-kara* {***nani/donna oto***}*-ga si-te i-ta no?*
over.there-from {what/what sound}-NOM do-GER be-PST Q
'{What/what kind of sound} was heard from over there?'

The *wh*-question in (23) is legitimate when the *wh*-phrase *donna oto* 'what sound' is used as a nominative argument. The reason is that *oto* provides the semantic information that identifies the sound-emission construction. On the other hand, the *wh*-question is not acceptable if the nominative argument is *nani* 'what' because it does not provide a specific semantic content for the composite predicate RP that expresses a sound-emission meaning.

One might wonder whether *nani* 'what' question can be improved if what is referred to by the nominative *wh*-phrase can be inferred contextually. On the contrary, the sentence remains unacceptable even if such contextual information is provided.

(24) **Ookina oto-to tiisana oto-no uchi dotira-ga si-te i-ta no*?
loud sound-and soft sound-GEN among which-NOM do-GER be-PST Q
'Which was heard, a loud sound or a soft sound?'

The nominative *wh*-word *dotira* 'which' does not include a lexical specification that what it refers to is a sound. Since *dotira* is a D-linking *wh*-word (cf. Comorovski 1996), the value of *wh*-phrase in (24) should be one referring to a sound. If contextual information

[6] By contrast, an adjectival modifier is not allowed to be added to N-*suru* compound, as shown by the impossibility of *[*tairyoo-no ase*]-*suru* ([plenty-GEN sweat]-do) 'sweat a lot'.

played a role in identifying the construction, (24) would be acceptable. Nevertheless, (24) is totally unacceptable, which shows that the lexical specification of a sound needs to be provided by the nominative argument in the sound-emission construction with non-agentive *suru*.

No such *wh*-questioning constraint is observed when R contains a full-fledged predicate head. For instance, the sentence in (25) carries the meaning similar to that of (23).

(25) *Mukoo-de* {*oto/bakuhatu-on*}*-ga* *kikoe-ta*.
over.there-in {sound/explosion-sound}-NOM be.heard-PST
'{An explosive sound/A sound} was heard over there.'

The nominative subject in (25) is an ordinary argument which receives a θ-role. This argument can be turned into *nani* 'what' in a *wh*-question, as shown in (26).

(26) *Mukoo-de* {***nani/donna oto***}*-ga* *kikoe-ta* *no?*
over.there-in {what/what sound}-NOM be.heard-PST Q
'{What/What kind of sound} was heard over there?'

The reason why *nani* 'what' is allowed for the nominative subject in (26) is that the semantic selection of the argument is fixed by the θ-role assigned by the predicate, i.e. the argument can be construed as satisfying the semantic selection of *suru* by virtue of the assigned θ-role. In (26), since *kikoeru* selects a sound noun as its subject, *nani* 'what' is taken to refer to some kind of sound although the *wh*-word itself does not carry information that can identify the referred entity as a sound.

In the non-agentive *suru* construction, once the semantic content for RP is identified thanks to the expression that occurs contiguous with *suru*, the predicative complex RP can function as a full-blown predicate, and can take arguments in the normal way.

(27) {***Nani/Doko***}*-kara* *henna* *oto-ga* *si-te* *i-ta* *no?*
{what/where}-from strange sound-NOM do-GER be-PST Q
'Where did the strange sound come from?'

In (27), the locative appears in a higher structural position than the nominative argument. As shown in (27), a *wh*-question can be formed by using *nani* 'what' for the locative argument. The fact suggests that in the non-agentive *suru* construction expressing the sense of sound emission, the locative does not form an extended predicate with the verb *suru.*

Non-agentive *suru* gives rise to different types of constructions depending on the kind of expression that immediately precedes it. The non-agentive *suru* construction in (28) describes a motion event with a specific manner.

(28) (*Tuyoi kaze-de*) *mado-ga* *gatagata* *si-te* *i-ta.*
strong wind-with window-NOM rattling do-GER be-PST
'The window was rattling (because of strong wind).'

(28) has the "nominative-adverbial" frame, where the adverbial appears internal to the nominative argument. In this construction, a *wh*-question which asks for a manner with

doo ‘how’ is not acceptable, whereas a *wh*-question can be derived by making use of *nani* for the nominative argument.

(29) a. *Sono mado-wa* {***doo/dorekurai gatagata***} *si-te i-ta no?*
that window-TOP {how/how.much shaking} do-GER be-PST Q
‘How/How much shaking did that window do?’

b. ***Nani-ga*** *gatagata si-te i-ta no?*
what-NOM shaking do-GER be-PST Q
‘What was shaking?’

As seen in (29a), a *how*-question cannot be formed with non-agentive *suru*, but it is possible to ask for the degree of the mimetic adverb *gatagata* with the *wh*-expression *dorekurai* ‘how much’.

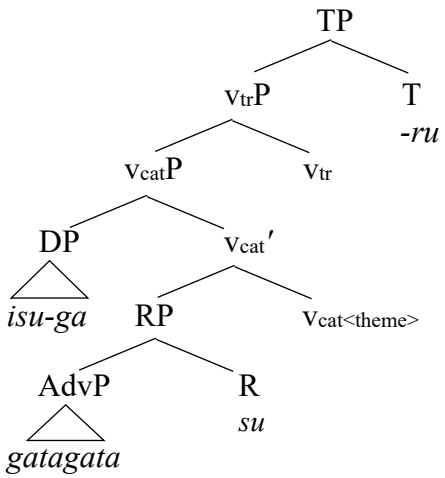
In (29), the mimetic *gatagata* forms an extended predicate with non-agentive *suru* since it specifies the meaning of a manner of shaking and provides a semantic content necessary for the sentence to qualify as the non-agentive *suru* construction describing a motion event.

(30) *gakagata*: ‘shaking’ + *suru*: P (x) ⇒ **shake′** (x)

In the *wh*-question in (29a), *dorekurai gatagata* qualifies as an expression to furnish the lexical information to identity the construction type of the non-agentive *suru* construction. Accordingly, the *wh*-question containing *dorekurai gatagata* is legitimate. By contrast, the *wh*-word *doo* ‘how’ does not specify a particular manner of activity. Hence, *doo* cannot be used for identifying the type of non-agentive *suru* construction, as seen in (29a).

The adverbial *gatagata* in (28) forms an extended predicate (RP) with non-agentive *suru* syntactically. Thus, the nominative argument, located in a higher position than the manner adverbial, serves as an ordinary internal argument receiving a θ-role in v_{cat}P.

(31)



A *wh*-question with *nani* ‘what’ constructed on the non-agentive *suru* in (28) is well-formed, as seen in (29b), since the nominative subject is not an expression contiguous with *suru* and does not form an extended predicate.

Finally, observe that a similar mimetic construction (with the “nominative-adverbial” frame) can be formed on agentive *suru*, as in (32).

(32) *Sono inu-ga urouro si-te i-ta.*
that dog-NOM loitering do-GER be-PST
'That dog was loitering.'

A well-formed *how*-question can be formed from (32), where the predicate is agentive *suru*, as shown in (33a).

(33) a. *Sono inu-wa* {***doo/dorekurai urouro***} *si-te i-ta no?*
that dog-TOP {how/how.much loitering} do-GER be-PST Q
'{How/How much} loitering was that dog doing?'
b. ***Nani-ga*** *urouro si-te i-ta no?*
what-NOM loitering do-GER be-PST Q
'What was loitering?'

No contrast in acceptability is observed between *doo* 'how' and *dorekurai urouro* 'how much loitering' in (33a). (33b) is also a legitimate *wh*-question. Since agentive *suru* is a full-fledged predicate on its own, the *wh*-questions in (33) are all well-formed.

To summarize, the single nominative argument of the non-agentive *suru* construction expressing the meaning of sound emission forms an extended predicate with *suru*, and furnishes the predicate complex with a concrete semantic content. On the other hand, the nominative subject of the non-agentive *suru* construction describing a non-volitional motion behaves as an ordinary subject argument, since the adverbial appearing contiguous with the verb *suru* forms part of an extended predicate.

4. The position of subjects

In Japanese, nominative subjects are typically raised to TP, since they are the prominent arguments of clauses (see Kishimoto 2001). Under the vP-internal subject hypothesis, subjects are base-generated in vP, but are raised to Spec-TP. This movement may be motivated by the EPP requirement imposed on T. Nevertheless, as discussed by Kishimoto (2011), there are cases where nominative subjects stay in situ without raising to Spec-TP. In this section, the subjects of the non-agentive *suru* constructions are shown to make another case, in that they remain in situ with no A-movement to Spec-TP.

For the purpose of assessing the overt syntactic position of arguments, I will make use of the proform predicate *soo da* 'be so' construction (the past form of *soo da* [so COP] is *soo dat-ta* [so COP-PST]). The proform predicate construction is interpreted with reference to its antecedent clause, and can be legitimate if the antecedent clause carries a stative or a stative-like meaning (progressive, repetitive, habitual, etc.), since *soo da* is a stative predicate.

Crucially, the proform *soo (da)* is interpreted with reference to the projection dominated immediately by T, most typically vP, in its antecedent clause (see Kishimoto 2025a).

(34) a. Antecedent clause: [$_{TP}$ SUBJ [$_{vP}$ OBJ Pred] T]

b. Proform predicate construction: [$_{TP}$ SUBJ *soo da*]

Accordingly, the proform predicate gives rise to different interpretations according to whether arguments occupy a structural position internal to vP or above vP in the antecedent clause. Because of this feature, the proform predicate construction provides us with data that allow us to assess where arguments are located in clause structure. Consider how the proform predicate *soo da* is interpreted in (35).

(35) *Kinoo Ken-ga zutto hon-o yon-de i-ta-ga, kyoo-wa*
today Ken-NOM constantly book-ACC read-GER be-PST-CONJ today-TOP
Mari-ga (***hon-o***) ***soo dat-ta***.
Mari-NOM book-ACC so COP-PST
'Ken was constantly reading books yesterday, but Mari was so (=was constantly reading books) today.'

The proform predicate construction in (35) is acceptable obtaining the interpretation that Mari kept reading books, provided that the object is not overtly expressed.

Note that the object of the transitive verb in the antecedent clause is interpreted as included in *soo da*, and thus cannot be realized overtly in the proform predicate construction. The subject in the proform predicate construction is understood to be the subject of the transitive verb *yomu* 'read' since *soo da* includes the meaning of a reading act provided by the transitive verb in the antecedent clause. The subject of the proform *soo da* refers to an individual distinct from the subject in the antecedent clause, but the fact shows that the subject of the transitive verb *yomu* can be realized overtly in the proform predicate construction.

Nominative subjects that receive θ-roles are moved to Spec-TP from a vP-internal subject position. The following examples show that regardless of whether the verb in the antecedent clause is unergative or unaccusative, the subject can be realized overtly in the proform predicate construction.

(36) a. Ken-wa [*zutto hanasi-te i-ta*]-*ga,* ***Mari-ga soo dat-ta***
Ken-TOP constantly speak-GER be-PST-CONJ Mari-NOM so COP-PST
koto-mo ato-de sit-ta.
that-also later know-PST
'Ken was constantly speaking, and I came to know later that Mari was so (=was constantly speaking), too.'

b. *Kinoo-kara kotira-no boo-ga* [*zutto zimen-ni taore-te*
yesterday-from here-GEN bar-NOM constantly ground-to fall-GER
i-ta]-si, ***atira-no boo-ga soo dat-ta*** *koto-mo atode sit-ta*.
be-PST-CONJ there-GEN bar-NOM so COP-PST that-also later know-PST
'From yesterday, the bar here down to the ground all the time, and I came to know later that the bar over there was so (=was down on the ground all the time), too.'

Since the predicate proform constructions in (36) are legitimate with the overtly realized nominative subjects, it can be stated that the subjects of the unaccusative and unergative verbs are located in Spec-TP.

Turning now to the non-agentive *suru* constructions, the examples in (37) show that the nominative argument of non-agentive *suru* expressing the sense of a sound emission cannot be realized in the proform predicate construction.

(37) a. *Kinoo-wa* [*henna oto-ga zutto si-te i-ta*]-*si*,
yesterday-TOP strange sound-NOM constantly do-GER be-PST-CONJ
kyoo-mo ***soo dat-ta***.
today-also so COP-PST
'Yesterday, strange sounds were constantly coming out, and it was so (= strange sounds were constantly coming out) today, too.'

b. **Kinoo-wa henna oto-ga* [*zutto si-te i-ta*]-*ga*,
yesterday-TOP strange sound-NOM constantly do-GER be-PST-CONJ
kyoo-wa ***ketatamasii oto-ga soo dat-ta***.
today-TOP loud sound-NOM so COP-PST
(lit.) 'Strange sounds were constantly coming out yesterday, but loud sounds were so today.'

The fact that the nominative argument cannot be realized for the proform predicate construction to be well-formed suggests that the subject of non-agentive *suru* stays within vP when it forms part of an extended predicate in RP.

In the non-agentive *suru* construction where an adverbial occurs as the closest argument to *suru*, the nominative subject, but not the adverbial, can be realized in the proform predicate construction, as shown by (38).

(38) a. *Kinoo-wa ano isu-ga* [*zutto gatagata si-te i-ta*]-*ga*,
yesterday-TOP that chair-NOM constantly shaking do-GER be-PST-CONJ
kyoo-wa ***kono isu-ga soo dat-ta***.
today-TOP this chair-NOM so COP-PST
'That chair was constantly shaking yesterday, but this chair was so (=was constantly shaking) today.'

b. **Kinoo-wa ano isu-ga zutto gatagata* [*si-te i-ta*]-*ga*,
yesterday-TOP that chair-NOM constantly shaking do-GER be-PST-CONJ
kyoo-wa ***kono isu-ga gatagata soo dat-ta***.
today-TOP this chair-NOM shaking so COP-PST
(lit.) 'That chair was constantly shaking yesterday, and this chair was so shaking today.'

The data show that the nominative argument of the non-agentive *suru* construction describing a (non-agentive) motion event acts as a normal subject, and appears in Spec-TP. This state of affairs is naturally expected since the adverbial rather than the nominative subject forms an extended predicate with the verb *suru* in the non-agentive motion construction.[7]

[7] The agentive *suru* construction that describes a motion event shows the same distribution in the proform predicate construction as its non-agentive counterpart in (37), as can be seen in (i).

(i) a. *Kinoo-wa ano inu-ga* [*zutto urouru si-te i-ta*]-*ga*,
yesterday-TOP that dog-NOM always loitering do-GER be-PST-CONJ
kyoo-wa ***kono inu-ga soo dat-ta***.
today-TOP this dog-NOM so COP-PST

In Japanese, some nominative arguments (such as nominative subjects) appear in TP, while others (such as nominative objects) appear internal to vP. These nominative arguments show different behaviors in the proform predicate construction depending on where they reside in the antecedent clause. Consider the sentences in (39).

(39) a. *John-ga eigo-ga hanase-ru.*
John-NOM English-NOM can.speak-PRS
'John can speak English.'
b. *John-ga migi-me-ga akakat-ta.*
John-NOM right-eye-NOM red-PST
'As for John, his right eye was red.'

Both sentences in (39) have the same "nominative-nominative" case frame, but the arguments have different grammatical statuses. The potential predicate *hanaseru* 'can' in (39a) is a two-place predicate, which takes a nominative object alongside the nominative subject, but (39b) is a major subject construction, where a nominative major subject is added to the intransitive clause which takes a nominative subject.

(40) a. [$_{TP}$ SUBJ-NOM [$_{vP}$ OBJ-NOM V] T]
b. [$_{TP}$ M.SUBJ-NOM SUBJ-NOM [$_{vP}$ V] T]

The two sentences have different constituent structures. (39a) can be postulated to have the configuration in (40a), where the nominative subject is located in TP, and the nominative object in vP. In (39b), both major subject and thematic subject can be assumed to be located in TP, as in (40b) (Kishimoto 2009).

The proform predicate construction behaves differently depending on whether the antecedent clause is (39a) or (39b). (41) is a case involving a dyadic predicate construction.

(41) a. *Ken-wa eigo-ga hanase-ru-ga,* ***Mari-ga soo da***
Ken-TOP English-NOM can.speak-PRS-CONJ Mari-NOM so COP
to-wa sira-naka-ta.
that-TOP know-NEG-PST
'Ken can speak English. But I did not know that Mari was so (=can speak French).'

'That dog was always loitering yesterday, but this dog was so (=was always loitering) today.'

b. **Kinoo-wa ano inu-ga zutto urouro* [*si-te i-ta*]*-ga*,
yesterday-TOP that dog-NOM always loitering do-GER be-PST-CONJ
kyoo-wa kono inu-ga ***urouro soo dat-ta***.
today-TOP this dog-NOM loitering so COP-PST
(lit.) 'That dog was always loitering yesterday, and this dog was so with loitering today.'

The fact shows that the subject is raised to Spec-TP, since it is an ordinary argument in the relevant non-agentive *suru* construction, and that the adverbial is located below TP whether or not it forms an extended predicate with *suru*.

b. **Ken-wa eigo-ga hanase-ru-ga,* ***Mari-ga furansugo-ga***
Ken-TOP English-NOM can.speak-PRS-CONJ Mari-NOM French-NOM
soo da *to-wa sira-naka-ta*.
so COP that-TOP know-NEG-PST
(lit.) 'Ken can speak English, but I did not know that Mari was so French.'

The proform predicate construction with an overt nominative subject in (41a) is acceptable with the interpretation that Mari can speak French. But the proform predicate construction in (41b), where the two nominative arguments are realized overtly, is not. Given the constraint imposed on the proform interpretation, the unacceptability of (41b) can be attributed to the overt realization of the vP-internal nominative object in the proform predicate construction.

Standing in contrast with the dyadic potential predicate construction is the major subject construction. The two nominative arguments of the major subject construction in (39b) can be realized in the proform predicate construction, as seen in (42).

(42) *Ken-ga migi-me-ga akakat-ta koto-wa sit-te i-ta-ga,*
Ken-NON right-eye-NOM red-PST that-TOP know-GER be-PST-CONJ
Mari-ga hidari-me-ga *soo dat-ta koto-wa sira-nakat-ta*.
Mari-NOM left-eye-NOM so COP-PST that-TOP know-NEG-PST
'I know that Ken's right eye was read, but I did not know that Mari's left eye was so (=was red).'

The acceptability of the proform construction in which the two nominative arguments are overtly realized is expected since both major subject and thematic subject of the antecedent clause are located in a higher position than vP.

Predicates provide descriptions about the subjects (Rothstein 2001), and prototypical subjects possess a cluster of subject properties (Keenan 1976, cf. Comrie 1981). The prominence of subjects is often encoded structurally by virtue of A-movement from a vP-internal subject position to Spec-TP. This movement may be motivated if T has an EPP requirement. Apparently, the subjects forming an extended predicate with non-agentive *suru* are not prominent arguments, so that they are not moved to Spec-TP. The non-agentive *suru* construction expressing the sense of sound emission provides a case showing that the nominative subject is not the normal subject, and T does not have an EPP requirement.

5. Weather expressions

Weather expressions provide another case where their single arguments occur in RP to form an extended predicate. I suggest that the subjects of the weather verbs *huru* '(rain) fall' and *huku* '(wind) blow' are placed in RP to form an extended predicate with the weather verb since the proposition can be complete at the level of RP.

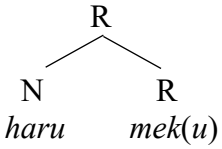
To begin, observe that the predicates in weather expressions tend to have two forms. In the first place, weather conditions are often described by single predicates with no subjects in the clauses, as exemplified in (43).

(43) a. *Zyozyo-ni haru-mei-te ki-ta.*
gradually spring-come.close-GER come-PST
'Gradually, spring was coming/It became spring-like.'

b. *Kinoo-wa* *sigure-ta*.
yesterday-TOP occasional.rain-PST
'It rained on and off yesterday.'

The compound verb in (43a) has the form of "N + *meku*". The suffix *meku* 'come close' is a verbalizer whilethe noun *haru* 'spring' included in the verb represents a season.

(44)



In the configuration in (44), it can be reasonably assumed that the weather predicate is saturated via the constant filling in its variable position at the Root level.

(45) *haru*: 'spring' + *meku*: **come.close′** (x) ⇒ **come.close′** (spring)

The weather predicate is a zero-valence predicate. Thus, (43a) is a complete sentence although a subject does not appear in the clause.

There is another salient way of forming weather expressions. Some weather verbs such as *huru* '(rain) fall' and *huku* '(wind) blow' are intransitive predicates which select subjects.

(46) a. *Kaze-ga* *hui-te* *i-ru*.
wind-NOM blow-GER be-PRS
'It is windy.'
b. *Ame-ga* *hut-te* *i-ru*.
rain-NOM fall-GER be-PRS
'It is raining.'

The verb *huku* 'blow', if used as a weather verb, takes only *kaze* 'wind' as its subject.[8] In the case of the precipitation verb *huru* 'fall', the subject is confined to *ame* 'rain' or *yuki* 'snow' (=a frozen form of rain).

Notably, the weather sentences in (46) do not allow *what*-questions to be formed, as shown in (47).

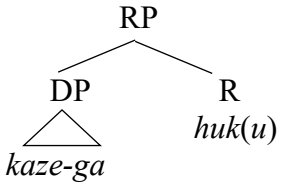
(47) a. *Kinoo* {***nani/dorekurai-no** **ame**}**-ga** *hut-te* *i-ta* *no?*
yesterday {what/how.much-GEN rain}-NOM fall-GER be-PST Q
'{What/How much rain} was it raining yesterday? '
b. *Kinoo* {***nani/donna** **kaze**}**-ga** *hui-te* *i-ta* *no?*
yesterday {what/what wind-NOM} blow-GER be-PST Q
'{What/What kind of wind} was it blowing yesterday?'

The *wh*-word *nani* 'what' cannot be used for the subject of the *wh*-questions in (47a) and (47b). But it is possible to use *donna kaze* 'what kind of wind' and *dorekurai-no ame* 'how much rain' as the nominative arguments of the *wh*-questions.

[8] The verb *huku* 'blow' is typically used transitively in a non-weather use.

Given that the weather compoun verb *haru-meku* can have a complete propositional content without a subject, it is reasonable to assume that the proposition of the sentence in (45) can be complete at the RP level by virtue of the subject being added to RP, as in (48).

(48)



For the weather expression in (46a), it is reasonable to hypothesize that the subject *kaze* 'wind', which satisfies the selectional restriction of the weather verb *huku* 'blow', directly fills in the variable position of the predicate **blow′** (x) to form a zero-valence predicate.

(49) *kaze*: 'wind' + *huku*: **blow′** (x) ⇒ **blow′** (wind)

In this analysis, the fact that a *what*-question with *nani* 'what' cannot be formed from (47a) follows straightforwardly, since the *wh*-word *nani* does not have a lexical content that what is referred to is some kind of wind.

Observe at this point that in the case of weather expressions, *what*-questions that do not denote winds are not acceptable, but that the sentences are rendered acceptable if D-linked *wh*-words are used, as in (50).

(50) *Kita-kaze-to minami-kaze-no uchi dotira-ga hui-te i-ta no*?
north-wind-and south-wind-GEN among which-NOM blow-GER be-PST Q
'Which blew yesterday, the north wind or the south wind?'

This fact stands in contrast with the case of non-agentive *suru*. The difference lies in the fact that the argument merged in RP contributes to building the predicative meaning in the non-agentive *suru* construction, while the weather expression does not. Weather verbs are meaningful, and the nominative argument is used just for filling in the variable position of the predicate. Thus, the inference derived by context information is sufficient to meet the selectional requirement of the predicate.

The present analysis leads to the expectation that the subjects of the weather verbs stay in situ. This expectation is fulfilled, as seen in (51).

(51) a. *Kinoo-wa* [*kita-kaze-ga zutto hui-te i-ta*]-*si,*
yesterday-TOP north-wind-NOM constantly blow-GER be-PST-CONJ
kyoo-mo ***soo dat-ta***.
today-also so COP-PST
'Yesterday, the wind was constantly blowing from the north, and today was so (=the wind was blowing from the north).'

b. **Kinoo-wa* ***kita-kaze-ga*** [*zutto hui-te i-ta*]-*ga,*
yesterday-TOP north-wind-NOM constantly blow-GER be-PST-CONJ
kyoo-wa ***minami-kaze-ga soo dat-ta***.
today-TOP south-wind-NOM so COP-PST

'Yesterday, the south wind was always blowing, but today the south wind was so.'

When the weather sentence is the antecedent, the subject is not allowed to be realized in the proform predicate construction and if the subject is not materialized, a well-formed proform predicate construction can be constructed. The examples illustrate that the sole arguments of the weather verbs are not raised to Spec-TP.

5. Conclusion

In this paper, it has been argued that while agentive *suru* is a general activity predicate, non-agentive *suru* does not have a semantic content. Since the non-agentive *suru* does not have have a semantic content of its own, the type of construction in which *suru* appears cannot be identified. Then, for the non-agentive *suru* to serve as a predicate, it is necessary for the closest argument or adverbial to be added to R, by way of which the two elements form an extended predicate. The argument or adverbial appearing in RP provides a specific semantic content for the non-agentive *suru,* and once the semantic content is provided for the non-agentive *suru*, the extended predicate RP serves as a full-fledged predicate. It has also been shown that some weather verbs form an extended predicate with their subjects.

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