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The Base-generation Approach to the *Spray/Load* Alternation in Japanese*

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Abstract

This article presents a syntactic account of the *spray/load* alternation in Japanese (e.g., *nuru* ‘smear’, *tsumeru* ‘pack’, etc.). Fukui, Miyagawa and Tenny (1985) claim that the alternation verbs show the double object structure under a single VP node; namely both the Material (i.e., something that is painted) and the Location (i.e., somewhere that is painted) participants are co-sisters of the verb. When the Material participant is affected, it will be realized as the direct object of the verb. On the other hand, when the Location is (completely) affected, it will be realized as the direct object of the verb. I build an account on their intuition that the Material and the Location elements are thematically connected with the lexical verb within the binary branching hypothesis (Kayne 1994, among others); thus, they are arguments of VP. But this structure is valid only for the *ni*-variant where the Material is the single sister of VP. In the structure of the *de*-variant, the Location is a single sister of VP but the Material element is a PP, merging above VP. Under this view, the two syntactic alternants are available because they are derived from different numeration arrays. The present analysis minimizes the burden on the syntax by eliminating the affectedness condition for determining argument distribution of *spray/load* verbs in Japanese.

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1 Introduction

The *spray/load* alternation in English, as given in (1), has attracted much attention in the literature of argument realization (Levin and Rappaport 2005, among many others).

- (1) a. John sprayed paint onto the wall
 b. John sprayed the wall with paint.

This alternation is also a locus of cross-linguistic study (Levin 1993, among many others). In Japanese, verbs like *nuru* ‘smear’, *tsumeru* ‘pack’, and *umeru* ‘fill’ participate in this alternation, as in (2) (Kageyama 1980, Kuroda 1988, Fukui, Miyagawa and Tenny 1985, Levin 1993, Kishimoto 2001, Iwata 2008).

- (2) a. Taro-ga kabe-ni penki-o nut-ta
 Taro-NOM wall-DAT paint-ACC smear-PAST
 ‘Taro sprayed paint onto the wall’
 b. Taro-ga kabe-o penki-de nut-ta
 Taro-NOM wall-ACC paint-with smear-PAST
 ‘Taro sprayed the wall with paint’

I call the variant in (2a) the *ni*-variant of *spray/load* verbs, whereas the one in (2b), the *de*-variant throughout the discussion. In (2a), the material element such as *penki* ‘paint’ is marked by the accusative particle, whereas the location element such as *kabe* ‘wall’ is marked by the dative particle *ni*. In (2b), on the other hand, the material element appears with *de* ‘with’; and the location element is marked by the accusative particle.

It is also widely known that (2a) and (2b) are associated with slightly different semantico-pragmatic meanings: (2a) carries a caused-motion semantics such that Taro acts on paint, which is smeared onto a wall. In contrast, (2b) shows a caused-result meaning such that Taro smeared paint onto a wall, which results in a state that the wall is completely covered with paint.

Give verbs in Japanese (e.g., *ageru* ‘give’, *watasu* ‘pass’, *okuru* ‘send’) are compatible with the dative-accusative pattern and the caused-motion meaning, just like (2a). For example, Taro acted on an apple, which has caused it to move to *Hanako*. This type of verbs, however, cannot appear in the caused-result variant like (2b), as an asterisked example in (3b) shows.

- (3) a. Taro-ga Hanako-ni ringo-o age-ta
 Taro-NOM Hanako-DAT apple-ACC give-PAST
 ‘Taro gave apples to Hanako’
- b. *Taro-ga Hanako-o ringo-de age-ta
 Taro-NOM Hanako-ACC apple-with give-PAST
 ‘Literally: Taro gave Hanako with apples’

The fact in (3b), however, does not immediately mean *give* verbs have no cause-result construction. As it has been repeated in many previous researches (Saito 1985, Hoji 1985, Miyagawa 1996, Takano 1998; 2008, Ura 2000, Miyagawa and Tsujioka 2004, among many others), *give* verbs can construct another pair of constructions as (4), where the order of the dative-marked goal and the accusative marked theme is reversed. Some of the literature argue that (4a) has the caused-possession meaning; thus the apple (e.g., *ringo*) becomes to be possessed by *Hanako* as a result of giving, whereas (4b) does not necessarily entail the implication (Harley 2002, Pylkkänen 2002; 2008, Miyagawa and Tsujioka 2004, among others). By this assumption, Miyagawa and Tsujioka (2004) posit two different base structures for *give* verbs: the one where the dative phrase is merged above the minimal VP, which entails the caused-possession semantics, whereas the one in which the dative phrase merges lower within VP, which induces the caused-motion semantics.²

- (4) a. Taro-ga Hanako-ni ringo-o age-ta
 Taro-NOM Hanako-DAT apple-ACC give-PAST
- b. Taro-ga ringo-o Hanako-ni age-ta
 Taro-NOM apple-ACC Hanako-DAT give-PAST
 ‘Taro gave apples to Hanako’

Quite contrastively, the syntax of *spray/load* verbs has not much focused in the literature. Fukui, Miyagawa and Tenny’s (1985) (henceforth FMT) provide a quantitative survey of the

² The pair in (4) has been well-studied in the literature of scrambling. Since Hoji (1985), many researchers have elaborated the thesis that (4a) reflects the base structure of *give* verbs, whereas (4b) is derived from it via short scrambling (Yatsushiro 1997, Takano 1998, Ura 2000, among others).

given alternation and give a detailed description of the lexical semantic information of the verb. Under the binary-branching hypothesis, I develop a syntactic account for the alternation, pointing out a few drawbacks of FMT. I propose that the location element appears within VP in both variants; thus, it is always an argument of the verb. On the other hand, the material element can be a sister of VP or can be a VP adjunct: when appearing with *de* ‘with’, it is an adjunct of the VP, whereas with the accusative *o*, it is an argument of the VP.

The organization of this paper is as follows: in section 2, I will review FMT’s discussion about Japanese *spray/load* alternation and show the limitation of their explanation; in section 3, I will show some new syntactic aspects of the verb class, comparing it with *give* verbs and the Object Possessor Raising (henceforth OPR) verbs (e.g., *tataku* ‘hit’); in section 4, I propose a syntactic condition for *spray/load* alternation in Japanese; section 5 concludes the paper.

2 Fukui, Miyagawa and Tenny (1985)

2.1 Gist of their analysis

FMT (1985) propose that *spray/load* verbs involve the Material and the Location elements in their argument structure as in (5).

(5) NURU <Material, Location >

In (5), both the Material and the Location are essential elements of the verb; and when (5) is projected onto syntax, there are two argument patterns: when the Material is a direct sister of the verb, (1a) is derived, whereas when the Location is a direct sister of the verb, (1b) is realized. Thus, the *spray/load* verb can be associated with two different VPs.

(6) a. [_{VP} Location-*ni* (NP₁) Material-*o* (NP₂) V]

b. [_{VP} Location-*o* (NP₁) Material-*de* (NP₂) V] (FMT: 34, (20))

What conditions the alternation of the Material and the Location in (6) is the degree of ‘affectedness’ on these participants in the action of spraying. FMT argue that the verb is associated with the argument structure like (6b) when the Location in (5) is ‘holistically affected’ (i.e, the wall is fully covered with paint after painting).

2.2 Problems

Although the intuition that FMT is trying to capture such that both participants are thematically related to the verb is important, there is a crucial problem in their analysis. In (6), Location (NP₁) and Material (NP₂) are arguments of the verb, which indicates that there is no significant difference in terms of their structural statuses. However, a closer inspection reveals that this assumption is not true. I argue that they fail to capture the syntactic status of the Material when appearing with *de* ‘with’ correctly. I show that it is not a VP-argument but a VP-adjunct, instead.

FMT point out that the distribution of the Material-*de* in Right Node Raising constructions (henceforth, RNR) differs crucially from that of the Instrumental-*de*. RNR is a coordination construction that includes a V⁰ gapped conjunct (Johnson 2006); and a mismatch in thematic relation of a gapped conjunct and an antecedent conjunct is disallowed, as (7) shows.

- (7) a. kabe-o hake-de ~~nuru~~, soshite doa-o zookin-de nuru
 wall-ACC brush-with and door-ACC rag-with smear
 ‘(smear) the wall with a brush, and smear the door with a rag’
- b. *kabe-o penki-de ~~nuru~~, soshite doa-o zookin-de nuru
 wall-ACC paint-with and door-ACC rag-with smear
 ‘(smear) the wall with paint, and smear the door with a rag’ (FMT: 37, (28))

In (7a), there is no mismatch between the thematic roles of remnant element between the gapped clause and the antecedent conjunct; both sentences include the object phrase (i.e., *kabe-o* in the gapped conjunct and *doa-o* in the antecedent conjunct) and the instrumental phrase (i.e., *hake-de* in the gapped conjunct and *zookin-de* in the antecedent conjunct). However, the thematic role of the remnant element between the gapped and the antecedent clauses in (7b) is different. *Penki-de* ‘paint-with’ in the gapped one is something that is involved in the event of painting, thus, the Material, whereas *zookin-de* ‘clothe-with’ in the antecedent clause is the Instrumental, in that it is not an essential element in the argument structure of the verb. For these three reasons, FMT claim that Material-*de* is an argument of the verb, whereas Instrumental-*de* is not.

Numeral Quantifiers (henceforth, NQs) refer to the quantity of their associant NPs. For example, in (9a), an NQ *san-nin* ‘three students’ refers to the number of the NP *gakusei* ‘student.’ It has two positions to appear in relation to its associated NP. It can appear either

to the left of the NP with the genitive marker as in (8a) or to the right of its associated NPs without the genitive marker, maintaining the same modification, as (8b) shows (Miyagawa 1989, among others).³ This distribution pattern of the NQ is often dubbed as ‘floating’ in the literature (Miyagawa 1989, Miyagawa and Arikawa 2007, among others).

- (8) a. [San-nin-no gakusei]-ga sono hon-o yon-da
 3-_{CL}-_{GEN} student-_{NOM} the book-_{ACC} read-_{PAST}
 ‘Three students read the book’
- b. [Gakusei]-ga san-nin sono hon-o yon-da (FNQ)
 student-_{NOM} 3-_{CL} the book-_{ACC} read-_{PAST}

Although various proposals on the system of FNQ have been put forth in the literature (Nakanishi 2008, among others), I assume that a floated NP left a copy in the first-merge position, following the insight of Miyagawa (1989).

It is also widely assumed that these floated NQs can mark the original position of their associated NPs (Miyagawa 1989, Ura 2000, among others).

As is widely assumed in the Minimalist program, the agent role is thematically separated from the lexical verb, and can be independently introduced to the structure by ν (Burzio 1986, Larson 1988, among others) ⁴.

By these assumptions, let us examine the distribution of the Material and the Instrumental *de* with respect to the subject FNQ. The Material *de* cannot appear higher than at which the NQ *san-nin* merges as in (9b). Assume that the NQ marks the base-merge position of the agent. Given this, the contrast between (9a) and (9b) shows that the Material-*de* must appear lower than the base-position of the agent, or [spec, ν].

³ Some other NQs such as an NQ within the PP cannot show the same distribution. Namely, the NQ cannot float off from the PP. See Miyagawa (1989) for details.

⁴ See Koizumi (1995) and Ura (2000) for detailed discussion of applying this hypothesis to Japanese phrase structure.

- (9) a. Gakusei-ga_i san-nin_i penki-de kabe-o nut-ta
 student-NOM 3-CL paint-with wall-ACC smear-PAST
- b. *Gakusei-ga_i penki-de san-nin_i kabe-o nut-ta
 student-NOM paint-with 3-CL wall-ACC smear-PAST
- ‘Three students smeared the wall with paint’

The Instrumental-*de* shows exactly the same distribution as Material-*de* in this respect, as given in (10). This means that the base-merged position of Material-*de* and Instrumental-*de* may be the same.

- (10) a. Gakusei-ga_i san-nin_i naifu-de niku-o kit-ta
 student-NOM 3-CL knife-with meat-ACC cut-PAST
- b. *Gakusei-ga_i naifu-de san-nin_i niku-o kit-ta
 student-NOM knife-with 3-CL meat-ACC cut-PAST
- ‘Three students cut meats with knives’

The distribution of Indeterminate Pronouns (henceforth, IP) in Japanese (e.g., *nani* ‘what’ or *dare* ‘who’) indicates that it is impossible for the Material-*de* to be a sister of the verb. IPs in Japanese can be interpreted as Negative Polarity Items (henceforth, NPI) with respect to the quantificational particle *mo* ‘also’ being attached to the infinitive verb (Kishimoto 2001, Hiraiwa 2005).

- (11) a. Taro-ga_i [_{VP} t_i [_{VP} nani-o tabe-mo-si-nakat-ta]]
 Taro-NOM what-ACC eat-also-LV-NEG-PAST
 ‘Taro didn’t eat anything’ (✓NPI)
- b. *Dare-ga_i [_{VP} t_i [_{VP} ringo-o tabe-mo-si-nakat-ta]]
 who-NOM apple-ACC eat-also-LV-NEG-PAST
 ‘No one ate any apples’ (*NPI)

(11a) has an indeterminate object *nani-o* ‘what’ that can be understood as an NPI with respect to *mo* (e.g., ‘Taro didn’t eat anything’), whereas when an indeterminate word is a subject such as *dare-ga* ‘who’ in (11b), an NPI reading ‘no one ate any apples’ cannot be obtained with respect to *mo*.

According to Hiraiwa (2005), these indeterminate words can be construed as NPIs when they are within the c-command domain of *-mo* ‘also’. Accompanying the assumption that *mo* is attached to the light verb head *v* (Kishimoto 2001, Hiraiwa 2005) with the assumption above, the difference between (11a) and (11b) is accounted for as follows: in (11a), the object IP *nani* is included in the c-commanding domain of *v*, given that the accusative case is licensed under the probe-goal relation between [-interpretable] *v* and an unvalued goal in VP (Chomsky 2000; 2001). However, in (11b), the IP *dare* is never within the VP. This is why an NPI reading cannot be construed with respect to *mo*.

If the Material-*de* were a VP-argument, we would expect an indeterminate Material *nani-de* ‘what-with’ plus *mo* to be interpreted as an NPI. This expectation, however, cannot be borne out. *Nani-de* shows no NPI reading with respect to *mo* in either (12a) or (12b). The Material-*de* must not be merged within the c-command domain of *v*, or the inside of VP. Thus, it cannot be a sister of the verb, contra FMT’s account.

- (12) a. Gakusei-ga_i [_{VP} san-nin_i [_{VP} kabe-o nani-de nuri-mo-si-naka-ta]]
 student-NOM 3-CL wall-ACC what-with smear-also-LV-NEG-PAST
 ‘Three students didn’t smear the wall with anything’ (*NPI)
- b. Gakusei-ga_i [_{VP} san-nin_i [_{VP} nani-de [_{VP} kabe-o nuri-mo-si-naka-ta]]] (*NPI)

As shown in (13), no NPI reading can be construed with an indeterminate Instrumental with respect to *mo*. Thus, the parallel distribution of Material and Instrumental *de* in (12) and (13) supports the proposal that the syntactic status of Material-*de* and Instrumental-*de* is the same.

- (13) a. Gakusei-ga_i [_{VP} san-nin_i [_{VP} niku-o nani-de kiri-mo-si-naka-ta]] (*NPI)
 student-NOM 3-CL meat-ACC what-with cut-also-LV-NEG-PAST
 ‘Three students didn’t cut meats with anything’
- b. Gakusei-ga_i [_{VP} san-nin_i [_{VP} nani-de [_{VP} niku-o kiri-mo-si-naka-ta]]] (*NPI)
 student-NOM 3-CL what-with meat-ACC cut-also-LV-NEG-PAST

3 The syntax of the *spray/load* alternation in Japanese

3.1 The syntax of *de*-variant

In the previous section, I have shown that the Material-*de* must be merged outside of the VP. With the split *v*P hypothesis, I argue that the Location in the variant seen in (15a) is the single argument of the VP; and the Material-*de* is a VP-adjunct. The exact position of the

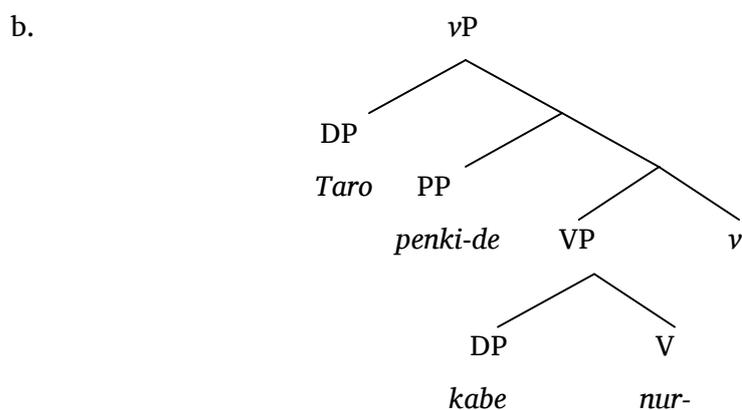
element is a specifier of v ; this is evidenced by the fact that it must be lower than the base-merge position of the agent, or [spec, v].

In general, the Instrumental is a kind of manner adverbs. In some of the literature, the manner adverb in Japanese may appear in-between the base-position of the agent and the left edge of VP (Ura 2000). These assumptions further support my proposal that the Material *de* is merged at a specifier of v P. I claim that the categorial status of the Material in this variant is PP, providing a piece of evidence from the distribution of FNQ. As show in (14), an NQF is impossible from the Material-*de*: there must be the head P that blocks the NQ *ni-kan* ‘2-CL’ associating with the NP *penki* floating off from the PP (Miyagawa 1989).

- (14) a. Taro-wa sono kabe-o [ni-kan-no penki]-de nut-ta
 Taro-_{TOP} the wall-_{ACC} 2-_{CL-GEN} paint-with spray-_{PAST}
- b. *Taro-wa sono kabe-o [_{t_i} penki]-de ni-kan_i nut-ta
 Taro-_{TOP} the wall-_{ACC} paint-with 2-_{CL} spray-_{PAST}
 ‘Taro sprayed the wall with two cans of paint’

Now, the discussion so far leads us to the structure (15b) for the *de*-variant of *spray/load* verbs in Japanese.

- (15) a. Taro-ga kabe-o penki-de nut-ta (= (2b))
 Taro-_{NOM} wall-_{ACC} paint-with spray-_{PAST}
 ‘Taro sprayed the wall with paint’



3.2 The syntax of *ni*-variant: it is a double accusative structure

In this section, our focus is on the *ni*-variant of *spray/load* verbs as in (16a). I compare the syntax of the variant with the *give* construction as in (16b); and the OPR (Object Possessor

Raising) construction as in (16c). In (16a), the verb is associated with the Material marked by *o* and the Location, by *ni*. *Give* verbs in (16b) show an identical case pattern where the Goal (e.g., *Hanako*) is marked by *ni* and the Theme (e.g., *ringo* ‘apple’) is, by *o*. In (16c), the verb *tatak-* ‘hit’ can be associated with the Possessor (e.g., *Hanako*) and the Possessee (e.g., *atama* ‘head’), although the derivation itself is marginal as the double question mark indicates. I show that (16a) and (16c) look quite different on the surface; however, they will show an interesting regularity. Quite contrastively, (16a) and (16b) are seemingly alike but a closer examination will show that their VP syntax are different.

- (16) a. Taro-ga kabe-ni penki-o nut-ta
 Taro-NOM wall-DAT paint-ACC spray-PAST
 ‘Taro sprayed paint onto the wall’
- b. Taro-ga Hanako-ni ringo-o age-ta (koto)
 Taro-NOM Hanako-DAT apple-ACC give-PAST (the fact)
 ‘Taro gave apples to Hanako’
- c. ??Taro-ga Hanako-o atama-o tatai-ta (koto)
 Taro-NOM Hanako-ACC head-ACC hit-PAST (the fact)
 ‘Taro hit Hanako on the head’

3.2.1 *Spray/load verbs vs. give verbs*

In the literature of ditransitive verbs, it has been proposed that the structural relation between the Goal and the Theme is asymmetrical (Larson 1988, Baker 1997, Basillico 1998, Bruening 2001, among many others). This thesis has been also defended by cross-linguistic data such as Japanese (Hoji 1985, Yatsushiro 1997, Takano 1998, among others).

The classic evidence for the proposal is the distribution and interpretation of demonstrative pronouns such as *so-ko* ‘that place’ or *so-itsu* ‘that person.’ It has been discussed that these pronouns are variables; when they are bound by quantifiers, they induce a Bound Variable reading (henceforth, BVR) (Hoji 1985, among many others).

- (17) a. Subete-no gakusei-ga soitsu-no sensei-o kirat-ta (BVR)
 all-GEN student-NOM his teacher-ACC hate-PAST
 ‘Every student hated his teacher’

- b. Soitsu-no sensei-o_i subete-no gakusei-ga t_i kirat-ta (BVR)
 his teacher-_{ACC} all-_{GEN} student-_{NOM} hate-_{PAST}
- c. Soitsu-no gakusei-ga subete-no sensei-o kirat-ta (*BVR)
 his-_{GEN} student-_{NOM} all-_{GEN} teacher-_{ACC} hate-_{PAST}
 ‘His student hated every teacher’
- d. Subete-no sensei-o_i soitsu-no gakusei-ga t_i kirat-ta (BVR)
 all-_{GEN} teacher-_{ACC} his-_{GEN} student-_{NOM} hate-_{PAST}

A pronoun *so-itsu* in (17a) can be interpreted as a BV of a quantifier *subete-no* ‘all-GEN’. Thus, it carries a meaning that there is a group of students {S1, S2, S3...} and each student has his/her own teacher {T1, T2, T3...} who he/she hates {S1-T1, S2-T2, S3-T3...}.

According to Hoji (1985, 2003), the distribution and interpretation of demonstrative binding help to clarify the structural relation among NPs in a sentence. For example, the nominative-marked phrase is structurally higher than the accusative-marked one due to the fact that a demonstrative pronoun included in the accusative phrase can be interpreted as a BV of a quantifier in the nominative phrase in the nominative-accusative order. Even after scrambling of the accusative phrase including the pronoun over the nominative quantifier phrase, the same reading is still available. Facing this fact, it is quite awkward to argue that the BVR is determined linearly, since such reading can be induced when an order where a quantifier precedes a demonstrative pronoun. Hoji’s thesis is that it is the binding relation between the demonstrative pronoun and the quantifier that contributes to the BVR of the pronouns: the BVR is permitted when the binder phrase including a quantifier asymmetrically c-commands the bindee phrase including a demonstrative pronoun at LF.

Under this hypothesis, the distribution of the demonstrative pronoun can be accounted for. For instance, the pronoun in the accusative phrase in (17a) is interpreted as a variable bound to the quantifier in the nominative phrase, because the accusative bindee is c-commanded by the nominative binder. The fact that (17b) still maintains the same reading can be also accounted for by the same principle and additional assumptions of the copy theory and scrambling. When the accusative bindee is scrambled over the nominative binder, the movement left a copy and that the demonstrative pronoun fronted obtains a BVR via the copy, which is called a reconstruction effect of short scrambling (Takano 1998). The pronoun cannot be interpreted as a BV in (17c). This is a crucial example of the hierarchy of the nominative and the accusative phrase. In this example, the demonstrative pronoun is

included in the nominative phrase and it cannot be interpreted as a BVR bound to the quantifier in the accusative phrase. Thus, the given c-command condition is not satisfied. The thesis that the nominative is higher than the accusative can be more clearly shown by the comparison of (17c) and (17d). In (17d), the pronoun *so-itsu* inside the accusative phrase is construed as a variable bound to the quantifier *subete* in the nominative phrase. If this were the basic structure, we would expect the reversed order like (17c) to induce the BVR, contrary to the fact.

Hoji has extended the same analysis to the relation between the accusative phrase and the dative phrase in ditransitive structures. According to him, the dative phrase is structurally higher than the accusative phrase. As shown in (18a), the demonstrative pronoun *so-itsu* within the accusative phrase can be interpreted as a BV bound to its binder in the dative phrase. When the accusative phrase is scrambled over the dative phrase, the pronoun still obtains a BVR as in (18b). This is the same reconstruction effect that seen in (17b). The demonstrative pronoun is now within the dative phrase in (18c) and it cannot be construed as a BV to its binder in the accusative phrase. This is due to the fact that the c-command condition of the demonstrative pronoun is violated. As in (18d), when the accusative binder is scrambled over the dative bindee, no reconstruction effect is identified. This is crucial to the assumption that the dative is higher than the accusative in ditransitive structures because this assumption favours the hypothesis that the dative-accusative order is basic over the other.

(18) a. BVR (*subete-no gakusei* (dative), *so-itsu* (accusative))

Mary-ga [subete-no gakusei]_i-ni [soitsu_i-no sensei]-o syookaisi-ta
 Mary_{NOM} all_{GEN} student_{DAT} he_{GEN} teacher_{ACC} introduce_{PAST}
 ‘Mary introduced his teacher to every student’

b. ?BVR (*so-itsu* (accusative), *subete-no gakusei* (dative))

Mary-ga [soitsu_j-no sensei]-o_i [subete-no gakusei]_j-ni t_i syookaisi-ta
 Mary_{NOM} he_{GEN} teacher_{ACC} all_{GEN} student_{DAT} introduce_{PAST}

c. *BVR (*so-itsu* (dative), *subete-no gakusei* (accusative))

Mary-ga [soitsu_i-no sensei]-ni [subete-no gakusei]_i-o syookaisi-ta
 Mary_{NOM} he_{GEN} teacher_{DAT} all_{GEN} student_{ACC} introduce_{PAST}
 ‘Mary introduced every student to his teacher’

d. BVR (subete-no *gakusei* (accusative), *so-itsu* (dative))

Mary-ga [subete_j-no *gakusei*]-o_i [soitsu_j-no *sensei*]-ni t_i syookaisita
 Mary_{NOM} all_{GEN} student_{ACC} he_{GEN} teacher_{DAT} introduced

I propose that the same structural hierarchy of the dative and the accusative phrase holds true for *spray/load* verbs in Japanese. *So-ko* ‘that-place’ is another demonstrative pronoun in Japanese (Hoji 2003). It can be interpreted as a variable when it is within the c-command domain of the binder phrase. Thus, we expect that a pronoun being contained in the accusative phrase must be interpreted as a BV of the dative phrase containing a quantifier. This expectation is borne out. In (19a) the demonstrative pronoun *so-ko* may be interpreted as either discourse-bound or a bound variable. Thus, it means that the pronoun refers to a single company in the discourse or individual companies in a set of companies that is evoked by the quantifier *subete-no kaisya* ‘every company’. It can induce the bound variable reading because the accusative phrase containing the pronoun is bound by the dative phrase. (19b) shows that even when the bindee phrase scrambles over the binder phrase, the same BVR is still available. I argue that the BVR comes by because the copy of the bindee phrase after movement is within the c-command domain of the binder in this case. The pronoun cannot be interpreted as a variable in (19c), because it is not within the c-command domain of its binder phrase (accusative). When the same binder phrase is scrambled over the bindee phrase, the pronoun is now within the c-command domain of the scrambled binder, and thus it can be interpreted as a variable.

(19) a. BVR (binder (DAT) > bindee (ACC))

Taro-ga [subete-no penkigaisya_i-no kabe]-ni [soko_i-no penki]-o nut-ta
 Taro_{NOM} all_{GEN} paint.manufacture_{GEN} wall_{DAT} its_{GEN} paint_{ACC} smear_{PAST}
 ‘Taro sprayed its paint onto the wall of every paint manufacture’

b. BVR (bindee_i (ACC) > binder (DAT) > t_i)

Taro-ga [soko_i-no penki]-o [subete-no penkigaisya_i-no kabe]-ni nut-ta
 Taro_{NOM} its_{GEN} paint_{ACC} all_{GEN} paint.manufacture_{GEN} wall_{DAT} smear_{PAST}

c. *BVR (bindee (DAT) > binder (ACC))

Taro-ga [soko_i-no kabe]-ni [subete-no penkigaisya_i-no penki]-o nut-ta
 Taro_{NOM} its_{GEN} wall_{DAT} all_{GEN} paint.manufacture_{GEN} paint_{ACC} smear_{PAST}
 ‘Taro sprayed paint produced from every paint manufacture onto the wall’

- d. BVR (bindee_i (DAT) > binder (ACC) > t_i)

Taro-ga [subete-no penkigaisya_i-no penki]-o [soko_i-no kabe]-ni nut-ta
 Taro-NOM all-GEN paint.manufacture-GEN paint-ACC its-GEN wall-DAT smear-PAST

A secondary depictive (henceforth, SD) describes a state of an NP during the action of the main verb (Koizumi 1994, Baker 1997, Pylkkänen 2002; 2008, among others). For instance, as in (20), an SD *nama-de* ‘raw’ is a predicate of the accusative phrase *katsuo* ‘bonito’, thereby describing the state of the fish during the action of Taro’s eating.⁵

- (20) Taro-ga katuo-o_i **nama-de**_i tabe-ta
 Taro-NOM bonito-ACC raw eat-PAST
 ‘Taro ate the bonito_i raw_i’ (Koizumi 1994: 27, (4a))

It is widely known that the Goal of *give* verbs in English and Japanese cannot be a subject of an SD. A Japanese example in (21) shows that an SD *hadakade* ‘naked’ cannot describe the state of the Goal *Hanako* while the Agent *Taro* was reading a book to her.

- (21) *Taro-ga Hanako-ni_i **hadaka-de**_i hon-o yon-da
 Taro-NOM Hanako-DAT naked book-ACC read-PAST
 ‘*Taro read Hanako_i a book naked_i’ (Pylkkänen 2008: 29, (40b), modified)

Marking sharp contrast, the Location of *spray/load* verbs in Japanese can be a subject of an SD. The data (22) illustrates the point, where the SD *yogoreta-mama-de* ‘filthy’ is a predicate of the Location *sono osara* ‘the place’, while the Agent Taro was painting.

- (22) Taro-ga sono osara-ni_i **yogoretamama-de**_i enogu-o nut-ta
 Taro-NOM the plate-DAT filthy-SD paint-ACC paint-PAST
 ‘Taro painted paint onto the plate_i filthy_i’

⁵ Boldfaces in each example represent SDs.

There are two major approaches to the SD in the literature: the small-clause analysis involving control (Williams 1980, Koizumi 1994) and the complex predicate analysis where the depictive phrase is directly combined with VP (Cormack and Smith 1999).

Under the ternary branching hypothesis, Koizumi (1994) proposes that the secondary predication is established when an SD and the complement are governed by V^0 ; and there is no blocking category for the predication. This is so-called the Principle of Predication (POP).

(23) Principle of Predication (POP) (Koizumi 1994: 47, (61))

Predication relation between an NP and a predicate XP is licensed only if the following two conditions are satisfied at D-structure:

- a. The XP is c-governed by the NP (antecedent government: identification), and
- b. The XP is c-governed by a zero-level category (head government: formal licensing)⁶.

“C-government” means “constituent-government”. This government relations is defined as follows: X c-governs Y iff (a) X c-commands Y, and (b) there is no G, G a barrier for Y, such that G excludes X (Koizumi 1994: 43, (50)).

Going back to the data (20), under the POP, the SD *namade* ‘raw’ can be a predicate of the object *katsuo*, because it is c-governed by the object, since the object c-commands the SD; and there is no blocking category for this structural relation. The same SD is also c-governed by the zero-level category V, *taberu*; and there is no blocking category for this relation, neither. Thus, the distribution of the SD satisfies both conditions and the predication is established in (23).

(24) [_{VP} [_V **namade**_i *katsuo-o*_i V-*tabe*-]]
 raw bonito-_{ACC} eat

It is not hard to see these SDs are quite like adjectives that attribute a property to an argument or an individual. However, as Pylkkänen (2002; 2008) points out, SDs are more or less like adverbs in that they attribute a property to an event. As evidence, they cannot be

⁶ The definition of barrier (Chomsky 1986a: 14, (25), (26)) is given below. (i) X is a BC (Blocking Category) for Y iff X is not L-marked (i.e., lexically theta-marked) and X dominates Z. (ii) X is a barrier for Y iff (a) or (b): (a) X immediately dominates Z, Z a BC for Y; (b) X is a BC for Y, X ≠ IP.

compatible with individual-level adjectives as in (25a). The same holds true with Japanese, as in (25b).

(25) a. He entered the room annoyed / ??crazy/ ??tall (Pylkanen 2002: 27, (37))

- b. Taro-wa {irairasite / *takaku / *kurutte} heya-ni hait-ta
 Taro-_{TOP} {irritated / tall / crazy} room-to enter-_{PAST}
 ‘Taro entered to the room {irritated/*tall/*crazy}’

Pylkkänen (2002; 2008) also shows that SDs cannot be treated on a par with a Control structure, as the following data describes:

(26) a. I_i wrote him_j a letter to PRO_{i/j} show his mother

- b. I_i told him_j a news drunk_{i/*j} (Pylkkänen 2002: 27, (37))

The following Japanese data exemplify the same point:

(27) a. Taro-wa_i kodomo-ni_j [PRO_{i/j} paatii-ni iku tameni] keeki-o yai-ta
 Taro-_{TOP} child-_{DAT} party-_{DAT} go in.order.to cake-_{ACC} bake-_{PAST}

‘Taro_i baked the child_j a cake to PRO_{i/j} bring to the party’

- b. Taro-wa_i Hanako-ni_j kuuhukude_{i/*j} keeki-o yai-ta
 Taro-_{TOP} Hanako-_{DAT} hungry-SD cake-_{ACC} bake-_{PAST}

‘Taro_i baked the child_j a cake hungry_{i/*j}’

(27a) can mean that Taro baked the cake to let his son to bring to the party.

In the face of these facts, it is quite hard to maintain Koizumi’s analysis per se for the analysis of SDs. Building on the notion of applicative head (Marantz 1990, Miyagawa and Tsujioka 2004), I propose that the SD in Japanese is introduced by an applied head. Hence, they occupy the specifier of the appl. I propose that SDs in Japanese bears a certain property to a complement of the verb. This captures the intuition developed in Koizumi that object SDs describes the state of the direct object. He proposes that depictives can be a sister to V, controlled by the direct object. However, this position is unavailable under the binary branching hypothesis (Kayne 1994).

I propose that the appl head projects immediately above VP or vP. Under the split vP analysis, the Agent is introduced by v. We know that the position is marked by the subject

NQF (e.g., *san-nin* in (28)), even after the Agent has re-merged to [Spec, T]. The grammatical contrast in (28) shows that the SD cannot merge higher than the Agent.

- (28) a. Gakusei-ga_i san-nin_i **namade**_j katsuo-o_j tabe-ta
 student-NOM 3-CL raw bonito-ACC eat-PAST
 b. *Gakusei-ga_i **namade**_j san-nin_i katsuo-o_j tabe-ta
 ‘Three_i students_i ate bonito_j raw_j’

I posit a structure like (29) for the position of SDs.

- (29) [_{VP} NP [_{AppP} SD [_{VP} NP V] Appl] v]

Extending (29) to the analysis of SDs in *spray/load ni*-variant, I claim two points in relation to the examples (30): (i) the grammatical contrast in (30) shows that SDs project over VP but under *vP*; the position for the Location is evidenced by (30a). The Location *osara* ‘plate’ appears lower with respect to the SD *waretamamade* ‘cracked’, which means that the Location must merge within VP.

- (30) a. Gakusei-ga_i san-nin_i **waretamamade**_j osara-o_j enogu-o nut-ta
 student-NOM 3-CL cracked-SD plate-ACC paint-ACC smear-PAST
 b. *Gakusei-ga_i **waretamamade**_j san-nin_i osara-o_j enogu-o nut-ta.
 ‘Three_i students_i smeared paint onto plate_j cracked_j’

As we have seen, the Goal of *give* verbs cannot be a subject of an SD in Japanese. My analysis for SDs predicts this fact under the assumption of the applicative analysis of ditransitive verbs (Pylkkänen 2002; 2008). Before giving a discussion, I show that the Goal of Japanese ditransitive verbs has no subjecthood, in contrast to the Causee of a syntactic (i.e., productive) causative construction (Miyagawa 1999, among many others).

The dative Causee behaves same as the Agent of ditransitive verbs with respect to *zibun*-binding (Kuroda 1965, Kuno 1973, Saito 1982, among others).

- (31) a. Taro-wa_i Hanako-ni_j zibun_{i/*j}-no heya-de hon-o yon-da
 Taro-TOP Hanako-DAT self-GEN room-at book-ACC read-PAST
 ‘Taro_i read a book to Hanako_j in self’s_{i/*j} room’

- b. Taro-wa_i Hanako-ni_j zibun_{i/j}-no heya-de hon-o yom-ase-ta
 Taro-_{TOP} Hanako-_{DAT} self-_{GEN} room-at book-_{ACC} read-_{CAUSE}-_{PAST}
 ‘Taro_i made/let Hanako_j read a book in self’s_{i/j} room’

The Goal cannot bind *zibun* as in (31a), whereas the Causee can do so as in (31b). The same fact holds true with control PRO (Ura 2000, among others), as in (32). Both the Agent *Taro* and the Causee *Hanako* is able to control the adverbial phrase in the causative sentence, as in (32b). However, the Goal of *give* verbs cannot control the adverbial phrase, as (32a) shows.

- (32) a. Taro-wa_i Hanako-ni_j [PRO_{i/*j} naki-nagara] sono hon-o yon-da
 Taro-_{TOP} Hanako-_{DAT} crying the book-_{ACC} read-_{PAST}
 ‘Taro_i read the book to Hanako_j while crying_{i/*j}’
 b. Taro-wa_i Hanako-ni_j [PRO_{i/j} naki-nagara] sono hon-o yom-ase-ta
 Taro-_{TOP} Hanako-_{DAT} crying the book-_{ACC} read-_{CAUSE}-_{PAST}
 ‘Taro_i made/let Hanako_j read the book while crying_{i/j}’

If the Goal patterns differently from the Causee in PRO binding, we expect them to pattern differently from one another with respect to the distribution of the SD. This expectation is indeed born out. An SD *hadakade* ‘naked’ describes a state of the Causee *Hanako*, as well as the Agent *Taro* in the example (31).

- (33) Taro-wa_i Hanako-ni_j **hadaka-de**_{i/j} hon-o yom-ase-ta
 Taro-_{TOP} Hanako-_{DAT} naked book-_{ACC} read-_{CAUSE}-_{PAST}
 ‘Taro_i made/let Hanako_j read a book naked_{i/j}’

We know that the Goal is neither headed by ν nor whatever a head that introduces the Causee (e.g., the higher ν in the sense of Harley (2008)). Given this, I argue that the Goal is headed by applicative, as in (34), following Marantz (1999) and Miyagawa and Tsujioka (2004).

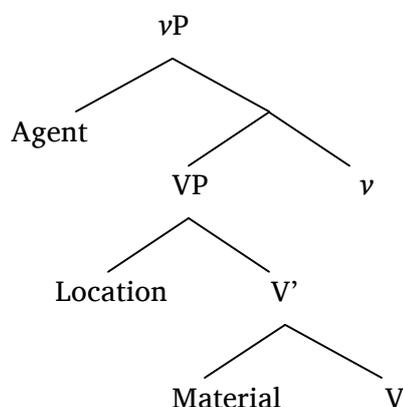
- (34) [_{VP} Agent [_{AppIP} Goal [_{VP} Theme V] Appl] ν]

Under this proposal, I make a stipulation that a multiple application of applicative heads is

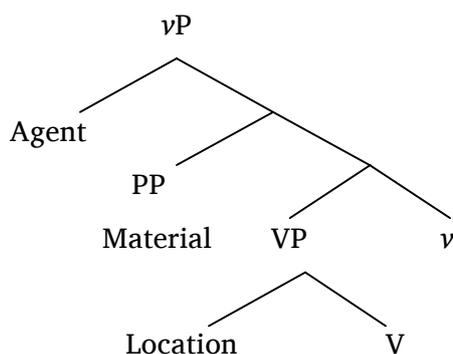
banned in the verbal projection of Japanese. This condition provides a certain explanation for the fact that the SD is not predicated of the Goal in Japanese ditransitive structures: it cannot project over another ApplP.

Returning to *spray/load* verbs, I argue that they can be compatible with two independent structures: one involves two NPs within VP, where the Location is [Spec, V] and the Material is the complement; and the other involves the single NP within VP, where the Location is the complement and the Material is the VP-adjunct. The former structure is given in (35a) and it derives the *ni*-variant of the *spray/load* alternation. The latter structure is shown in (35b) and it derives the *de*-variant of the *spray/load* alternation.

(35) a. The structure for the *ni*-variant of the *spray/load* alternation



b. The structure for the *de*-variant of the *spray/load* alternation



3.3.2 *Spray/load* verbs vs. Object Possessor Raising verbs

One might think that the double accusative structure in (35) is simply impossible since it has the effect of the Deep Double-*o* violation, which claims that Japanese VP must not involve two arguments (Saito and Hoshi 2000). Alternatively, we can take this as the violation of the Theta Criterion (Fukui 2000). Abiding by the phase-bound DoC (Hiraiwa 2010), I defend the

(Shibatani 1977). If it were CP, the sentences in (38) should be uniformly ungrammatical. If it were VP, (38b) should be grammatical, because there is no accusative phrase within the VP. (39) is the proposed DoC in Hiraiwa under the phase theory (Chomsky 2001).

(39) A Phase Theory of the DoC: Multiple identical occurrences of the structural accusative Case value cannot be morphophonologically realized within a single Spell-Out domain at Transfer. (753, (90))

In Chomsky (2001), it is proposed that *vP* is a phase; and its complement is a portion for Spell-Out to apply at Transfer. (37) is ungrammatical, since two structural accusative Case values are within a single Spell-Out domain, which consists with the condition in (39). On the other hand, (38a) is grammatical because one of the accusative phrases is outside of the given domain. (38b) is ungrammatical, due the fact that there are two accusative case values within another single Spell-Out domain (i.e., the complement of T/C). In (38a), the effect of the DoC violation is ameliorated under some syntactic environments such as Clefting (see (40)), Sluicing (see (40b)), Relativization (see (40c)), Topicalization (see (40d)), and morphological conditions such as the case-marker replacement (see (40e)).⁸

(40) a. Cleft (from Hiraiwa 2010: 738, (43))

[_{CP} Ken-ga t_i atama-o tatai-ta no]-wa Naomi-o_i da
 Ken-NOM head-ACC hit-PAST C-TOP Naomi-ACC Cop
 ‘It was Naomi that Ken hit on the head’

b. Sluicing (from Hiraiwa 2010: 756, (99))

Ken-wa aru-hito-mo atama-o tatai-ta rasii-kedo, boku-wa
 Ken-TOP some-person-also head-ACC hit-PAST 1Sg-hear-but, 1Sg-TOP
 [_{CP} dare-o ka] sira-na-i
 who-ACC Q know-NEG-PRES
 ‘I heard that Ken hit someone on the head, too, but I don’t know who.’

⁸ The DoC amelioration conditions have been discussed in the previous literature such as Kuroda (1965) and Harada (1973). See Hiraiwa (2010) for more details.

c. Relativization (from Hiraiwa 2010: 742, (57))

[_{CP} Ken-ga t_i atama-o tatai-ta] hito_i.
 Ken-_{NOM} head-_{ACC} hit-_{PAST} person
 ‘The person who Ken hit on the head.’

d. Topicalization (from Hiraiwa 2010: 742, (58))

Naomi-wa_i Ken-ga [_{VP} t_i atama-o tatai-ta]
 Naomi-_{TOP} Ken-_{NOM} head-_{ACC} hit-_{PAST}
 ‘Naomi, Taro hit on the head’

e. Case-suppression (from Hiraiwa 2010: 755, (95))

Ken-ga Naomi-**mo/dake/sae/wa** atama-o tatai-ta
 Ken-_{NOM} Naomi-also/only/even/Top head-_{ACC} hit-_{PAST}
 ‘Ken also/only/even Naomi hit on the head.’

I propose that the base structure for the *ni*-variant of *spray/load* verbs is on a par with a cycle of derivation at which Possessor Raising is applied to the initial merge structure of the OPR verbs.⁹ If my proposal is on the right track, the *spray/load ni*-variant must pattern with OPR in these tests. This expectation is borne out. Although the double accusative realization with *spray/load* verbs is marginally accepted (see (41)), I argue that this is because it violates the phase-bound DoC in (39) at Transfer. However, this effect can be ameliorated under Scrambling, Clefting, and Sluicing etc., as (42) shows.

(41) ??Ken-ga [_{VP} sono owan-o enogu-o nut-ta]
 Ken-_{NOM} the ball-_{ACC} paint-_{ACC} smear-_{PAST}
 ‘(lit.) Ken smeared the ball paint’

(42) a. Scrambling

Ken-ga sono owan-o_i teineini [_{VP} t_i enogu-o nut-ta]
 Ken-_{NOM} the ball-_{ACC} carefully paint-_{ACC} smear-_{PAST}
 ‘Literally: Ken carefully smeared that ball paint’

⁹ Although there are various analyses for the OPR construction (see Vermeulen 2005, Tomioka and Sim 2005) in the literature, I assume the Possessor Raising analysis.

b. Cleft

[_{CP} Ken-ga [_{VP} t_i enogu-o nut-ta] no]-wa sono owan-o_i da
 Ken-_{NOM} paint-_{ACC} smear-_{PAST} C-_{TOP} that ball-_{ACC} Cop
 ‘It was the ball that Ken smeared paint’

c. Sluicing

Ken-wa aru-tokoro-mo penki-o nut-ta rasii-kedo, boku-wa
 Ken-_{TOP} some-place-also paint-_{ACC} smear-_{PAST} 1Sg-hear-but, 1Sg-_{TOP}
 [doko-o ka] sira-na-i
 where-_{ACC} Q know-_{NEG-PRES}
 ‘I heard that Ken smeared somewhere, too, but I don’t know where.’

d. Case-suppression

Ken-ga sono owan-**mo/dake/sae/wa** enogu-o nut-ta
 Ken-_{NOM} the ball-also/only/even/_{TOP} paint-_{ACC} smear-_{PAST}
 ‘Ken also/only/even smeared the ball paint.’

e. Relativization

[_{CP} Ken-ga t_i enogu-o nut-ta] owan_i
 Ken-_{NOM} paint-_{ACC} smear-_{PAST} ball
 ‘The ball which Ken smear paint.’

f. Topicalization

Sono owan-wa_i Ken-ga [_{VP} t_i penki-o nut-ta]
 the ball-_{TOP} Ken-_{NOM} paint-_{ACC} smear-_{PAST}
 ‘The ball, Ken smeared paint’

In contrast to the *spray/load ni*-variant, the double accusative realization with *give* verbs is disallowed as in (43) (see also Hiraiwa 2010). Hiraiwa (2002; 2006) claims that *give* verbs never constitute the double accusative structure since the given sentence cannot be salvaged under Clefting, Sluicing, as in (44). These facts add another evidence that the *ni*-variant of *spray/load* verbs and that of *give* verbs are syntactically different (Miura 2010; 2011).

- (43) *Ken-ga [_{VP} Hanako-o hon-o age-ta]
 Ken-_{NOM} Hanako-_{ACC} book-_{ACC} give-_{PAST}
 ‘(lit.) Ken gave Hanako a book’

(44) a. Scrambling

*Ken-ga Hanako-o_i kossori [_{VP} t_i hon-o age-ta]

Ken-NOM Hanako-ACC secretly book-ACC give-PAST

‘Literally: Ken secretly gave a book to Hanako’

b. Cleft

*[_{CP} Ken-ga t_i hon-o age-ta no]-wa Hanako-o_i da

Ken-NOM book-ACC give-PAST C-TOP Hanako-ACC Cop

‘It was Hanako that Ken gave a book’

c. Sluicing

*Ken-wa aru-hito-mo hon-o age-ta rasii-kedo, boku-wa

Ken-TOP some-person-also book-ACC give-PAST 1Sg-hear-but, 1Sg-TOP

[dare-o ka] sira-na-i

who-ACC Q know-NEG-PRES

‘I heard that Ken gave a book to somewhere, too, but I don’t know who’

How can the dative case *ni* be assigned to the Location of *spray/load* verbs? We have seen that when the Location has the dative marker, it patterns like the Goal of *give* verbs. I have argued that the Goal *ni* with *give* verbs is assigned by Appl head. I propose that the Appl head takes the double object VP with *spray/load* as complement. The Location optionally appears with *o* or *ni*. I stipulate that this is so because the Appl head may or may not project the specifier. When it does, the appropriate argument must be remerged to the position, whereas when the position is closed, no argument can move in. In the former case, the Location can be assigned *ni* and the Material can be accusative-valued. In the latter case, both the Location and the Material have to be accusative-valued. Following Hiraiwa (2010), I assume that the little *v* in the latter case is [+multiple], thereby agreeing with the Location and the Material in its c-commanding domain. The Appl in the *give* structure obligatorily projects, whereas it optionally do so in the *spray/load* structure. Therefore, whether or not the Appl projects determines the structural difference between the dative-accusative variant and the double accusative variant of *spray/load* verbs. Now, the structure (35a) is modified like (45).

(45) [_{VP} Agent [_{AppIP} [_{VP} Location Material V] Appl] v]

4 Supporting the base-generation approach

In the previous sections, I have proposed that each variant of *spray/load* verbs is associated with a distinct structure, which in turn supports the base-generation approach to the *spray/load* alternation (Baker 1997, among many others). Two major views of the *spray/load* alternation appear in the literature: one is the base-generation approach and the other the transformational approach. Larson (1988) takes the latter view. He claims that these sentences are transformationally related by the so-called VP-internal Passive. In his theory, the Material-Location structure is the base; and when the rule applies to the Location, the Location-Material structure is derived. After Larson, many researchers have given pursuit the base-generation view. Baker (1997) claims that either the Material or the Location can be a sister of the verb. Extending the asymmetrical structural relation between the Goal and the Theme in the double object structure, Basillico (1998) illustrates that the Location binds into the Theme in the *with*-variant of English *spray/load* verbs, whereas the Theme binds into the Location in the *loc*-variant. My proposal shares the basic insight with these approaches; but it crucially differs from them in terms of the nature of the Material *de*: it is an adjunct.

4.1 A condition for argument alternation: the emergence of the structural difference between *spray/load* classes and *give* classes

In section 2, I have mentioned briefly the condition of argument alternation proposed by FMT (1985), which is exhaustively given in (46).

(46) Conditions for the alternation (from FMT 1985: 44, (43))

- a. The verb takes two arguments x, y in its LCS (Lexical Conceptual Structure); and
- b. One of its arguments (y) is affected by the action represented by the meaning of the verb ('Affect y ')

By (46), the alternation verbs are supposed to satisfy both conditions. *Give* verbs cannot undergo argument alternation since they fail to fulfill (46b). However, I point out that the condition (46a) is problematic, since the Material is not always argument of the verb. The condition (46b) is insightful, since the Location element is the argument of VP.

I will modify FMT's condition under the current Minimalist assumptions.

(47) Syntactic condition for the argument alternation

Verbs that participate in argument alternation in Japanese must meet the following syntactic conditions: (i) the locational element must be merged within VP; and (ii) it must be accusative-valued by *v*.

Spray/load verbs satisfy both conditions; the Location can be merged to the specifier of the VP in one structure or be merged as the complement of the VP in the other structure. This is why *spray/load* verbs participate in argument alternation. The condition successfully excludes *give* verbs from taking part in argument alternation. Neither condition is satisfied; the Goal is not merged within VP nor accusative-valued by *v*.

4.2 Implications to Korean *spray/load* verbs

In this section, I show that my analysis has the potential to be extended to Korean *spray/load* alternation. *Spray/load* verbs in Korean (e.g., *chilha* ‘paint’, *teph* ‘cover’, *pal* ‘smear’, etc.) also participate in argument alternation, thereby selecting both the *ey*-variant (see (48a)) and the *lo*-variant (see (48c)). In addition to this, the multiple accusative variant is allowed in the language (see (48b)).¹⁰

- (48) a. Chelswu-ka pyek-ey peyintu-lul chilha-ess-ta
 Chelswu-NOM wall-DAT paint-ACC smear-PAST-DECL
 ‘Chelswu smeared the paint onto the wall’
- b. ?Chelswu-ka pyek-ul peyintu-lul chilha-ess-ta
 Chelswu-NOM wall-ACC paint-ACC smear-PAST-DECL
 ‘(lit.): Chelswu smeared the wall paint’
- c. Chelswu-ka pyek-ul peyintu-lo chilha-ess-ta
 Chelswu-NOM wall-ACC paint-with smear-PAST-DECL
 ‘Chelswu smeared with the wall paint’

It has been argued in the literature that the *lo*-variant of *chilha* ‘paint’ as in (48c) is associated with the ‘holistic effect’, while the *ey*-variant as in (48a) is not (Kim 1990). What we want to test is whether or not (48b) has the same implication. One way to test this is to

¹⁰ It is well-known that the double accusative realization is allowed with ditransitive verbs in Korean (Shibatani 1977, Maling and Kim 1992, Kang 2002), in contrast with Japanese ones.

see whether or not a sentence *kuriko icye pyek-i wancenhi peyintu-lo tep-hi-ess-ta* ‘and now the wall is completely covered with paint’ is compatible with a variant or not. If it is compatible with the sentence, the holistic effect is implied, whereas if not, it is not. As shown in (49), the given sentence is incompatible with the *ey*-variant, while it is compatible with the *lo*-variant.

- (49) a. #Chelswu-ka pyek-ey peyintu-lul chilha-ess-ta
 Chelswu-NOM wall-DAT paint-ACC paint-PAST-DECL
 Kuriko icye pyek-i wancenhi peyintu-lo tep-hi-ess-ta
 and now wall-NOM completely paint-with cover-PASS-PAST-DECL
 ‘Chelswu painted the paint onto the wall and now the wall is completely covered with paint’
- b. Chelswu-ka ppalkan peyintu-lo ku pyek-ul chilha-ess-ta
 Chelswu-NOM red paint-with the wall-ACC paint-PAST-DECL
 Kuriko icye pyek-i wancenhi peyintu-lo tep-hi-ess-ta
 and now wall-NOM completely paint-with cover-PASS-PAST-DECL
 ‘Chelswu painted the paint onto the wall and now the wall is completely covered with paint’
- c. #Chelswu-ka pyek-ul peyintu-lul chilha-ess-ta
 Chelswu-NOM wall-ACC paint-ACC paint-PAST-DECL
 Kuriko icye pyek-i wancenhi peyintu-lo tep-hi-ess-ta
 and now wall-NOM completely paint-with cover-PASS-PAST-DECL
 ‘Literal: Chelswu painted the paint the wall and now the wall is completely covered with paint’

This indicates that the double accusative variant with Korean *chilha* verbs may be structurally same to the *ey*-variant, similar to Japanese *nuru* verbs.

I argue that the Location and the Material in the double accusative variant with *chilha* are structural accusative case. First of all, they are accusative-marked by *ul/lul*.¹¹ Second, the multiple passive is allowed, as given in (50b). Both the Location *tocaki* ‘potter’ and the

¹¹Although it has been reported that the use of *ul/lul* in Korean is diverse; and it can even appear with the adjunct (Hiraiwa 2010), this does not exclude the structural accusative marking of *ul/lul*.

Material *yuyaku* ‘glaze’ are nominative marked simultaneously. I assume that this passive is a direct passive, due to the fact that the long distance modification between the FNQ *twu-cem* ‘2-CL’ and the passive subject *tocaki*, is possible.

- (50) a. Tokong-ka chenchhenhi tocaki-lul yuyaku-lul chilha-ye-ci-ess-ta
 potter-NOM slowly pottery-ACC glaze-ACC paint-INF-get-PAST-DECL
 ‘The potter slowly painted glaze on the pottery’
- b. Tocaki-ka_i tokong-eyuyhay chenchhenhi twu-cem_i yuyaku-i chilha-ye-ci-ess-ta
 pottery-NOM potter-by slowly 2-CL yuyaku-NOM paint-INF-get-PAST-DECL
 ‘Literally: Two pots were slowly painted paint by the potter’ (Miura 2011: 75, (77))

Jung and Miyagawa (2004) propose a double object structure for Korean multiple accusative constructions involving *cwu* ‘give’ verbs, which is evidenced by the fact that the multiple passive is allowed with this type of verbs. Other things being equal, the multiple accusative *cwu* construction and that of *chilha* construction may involve the identical double object structure under consideration of the passive data. The multiple passive is permitted with Japanese *nuru* verbs as shown in (51a), in contrast to the hopeless *give* case in (51b). This further supports my proposal that Korean double accusative *chilha* and Japanese *ni*-variant of *nuru* verbs are double object structure.

- (51) a. ?Sono osara-ga tougeika-niyotte yukkuri enogu-ga nur-are-ta
 the plate-NOM potter-by slowly paint-NOM smear-PASS-PAST
 ‘The plate(NOM) was smeared paint(NOM) by a potter slowly’
- b. *Sono yuujin-ga sensei-niyotte tegami-ga okur-are-ta
 the friend-NOM teacher-by letter-NOM send-PASS-PAST
 ‘The friend was sent a letter by the teacher’

VP-preposing can target the maximal projection (Yatsushiro 1998). By this assumption, I claim that the Location in the *de*-variant of Japanese *spray/load* verbs is the single complement of the verb. The following example shows this point:

- (52) a. Sono kabe-o nuri-sae Taro-ga aka penki-de si-ta
 the wall-_{ACC} paint-even Taro-_{NOM} red.paint-with do-PAST
 ‘Literally: Even paint the wall, Taro did with red paint’
- b. *Aka penki-de nuri-sae Taro-ga sono kabe-o si-ta
 red.paint-with paint-even Taro-_{NOM} the wall-_{ACC} do-_{PAST}
 ‘Literally: Even painting with red paint, Taro did onto the wall’

In (52a), the Location *sono kabe* ‘the wall’ can be preposed alone with the verb *nuri* ‘paint’. In contrast, the Material *aka penki* ‘red paint’ and the verb cannot be fronted to the exclusion of the Location as in (52b).

The same holds true with Korean *lo*-variants. As in (53a), the fronting of the Location *ku pyuk* ‘the wall’ and the verb to the exclusion of the Material is allowed, whereas that of the Material *peyintu-lo* ‘with paint’ and the verb alone to the exclusion of the Location is disallowed as (53b) shows. Thus, I propose that in the *lo*-variant in Korean *chilha* construction, the Location is the single complement of the verb.

- (53) a. Ku pyek-ul chilha-nun kes-kkaci(to) Chelswu-ka ppalkan peyintu-lo
 the wall-_{ACC} paint-_{RL} fact-even Chelswu-_{NOM} red paint-with
 ha-ess-ta
 do-_{PASS}-_{DECL}
 ‘(lit.): Even paint(ing) the wall, Chelswu did with red paint’
- b. *Ppalkan peyintu-lo chilha-nun kes-kkaci(to) Chelswu-ka ku pyek-ul
 red paint-with paint-_{RL} fact-even Chelswu-_{NOM} the wall-_{ACC}
 ha-ess-ta
 do-_{PAST}-_{DECL}
 ‘(lit.) Even paint(ing) with red paint, Chelswu did the wall’

5 Conclusion/Implications

In this paper, I have demonstrated that the two variants of the *spray/load* alternation in Japanese syntactically differ from one another. Thus, each one is derived from a different numeration arrays, respectively. The reason why *spray/load* verbs can participate in argument alternation is captured by the proposed syntactic condition: the locational element must be merged within VP and accusative-valued. Neither condition is satisfied by the Goal

of *give* verbs, since it is introduced by the Appl and dative-marked. My proposal accounts for whether or not verbs can participate in argument alternation in terms of syntax, which has never been seriously tackled in the literature. I have also suggested that my proposal can be extended to the same alternation phenomenon in Korean. Further testing this hypothesis, however, remains as a future work. A further discussion is also necessary to demonstrate how *ni* 'onto' is assigned to the Location in the *ni*-variant of Japanese *spray/load* verbs. The same question goes to Korean *ey*-variants. I hope that this will help us see the similarity of *spray/load* verbs in the two languages.

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