

## Manner Conflation in v/√Root Partition\*

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### Abstract

Non-lexicalist approach to Argument Structure has been gathering much interest with a strong argument against Chomskyan lexicalist approach (Halle and Marantz 1993, Marantz 1997). In this paper, I put a focus on how a Manner Component is encoded across languages. Harley (2005, 2007) assumes an operation of Manner Conflation\* (in her original term Manner Incorporation), which makes it possible to derive productive denominal verbs (e.g. *hammer*, *anchore*, *nail*, etc...). I argue that the operation of Manner Conflation can apply to a root which results in semi-productive compound verbs in Japanese (e.g. *naki-harasi-ta* ‘cry-cause swollen’). Furthermore, I propose a Symmetry Condition which describes a symmetrical branching of a terminal node where Manner Conflation (\*) applies. Assuming distinction of the nature of an acategorial root and a category-determining functional head in Distributed Morphology, the parametric realizations of Manner Conflation (to a functional v or to a root) can be explained straightforwardly. Finally, I argue that a new light can be shed on the cross-linguistic difference in terms of Manner and Path (Talmy 1991, 2001) by the mechanism of Manner Conflation(\*) and Symmetry Condition.

*Key Words: Acategorial Root, Distributed Morphology, Manner Conflation, Symmetry Condition, Syntactic/Lexical Compound Verbs.*

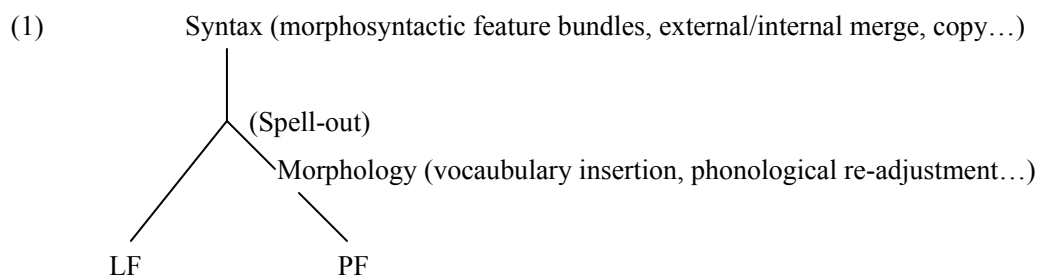
### 1. The Framework of Distributed Morphology

Since the dawn of syntactic theory Chomskyan linguists have always kept a concept of “Lexicon” as a universal mental dictionary. Later, the concept of “Lexicon” has been extended to be a nest of lexical operations which handle from an affixation to a verbal head including both an attachment of inflectional morpheme and an attachment of derivational morpheme (eg. *walk-walked*, *run-ran*, *run-runs*, *nominal-nominalize-nominalization*) to an idiomatic interpretation of a particular syntactic phrase (eg. *The cat is out of the bag*, *Once in a blue moon*, and so on). Chomskyan linguists, who are now called Lexicalists, have kept “Lexicon” as a huge black box which can both store thousands of semantic and also pragmatic information of words and idiomatic phrases and handle powerfully both operations, inflectional/derivational morphology. In the early 1990s, Chomsky (1993, 1995, 2001, and sequential works) starts a new project called Minimalist Program

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(henceforth, MP) which tries to define a narrow syntactic domain and restrict a derivational cost minimum as possible, but the value of lexical operation still keeps its integrity (see Chomsky 1995 for his treatment of introduction of inflected verbs in the syntactic numeration). Almost at the same timing, a new stream of theory, which is called Distributed Morphology (henceforth DM) emerges in the necessity of uncovering the huge black box of “Lexicon” (Halle and Marantz 1993, Harley and Noyer 1999, Marantz 1997). DM, which is called a non-Lexicalist approach, is a piece-based theory and all derivation of words and phrases are operated in syntax exploiting widely assumed operations (External/Internal Merge, Copy, and so on). In DM the traditional notion of a huge “Lexicon” and “Word” are abandoned. The lexical operations, assumed to happen all in Lexicon in lexicalist theory, are distributed into several stages of syntactic derivation. As simplified model (1) shows, syntax handles morphosyntactic feature bundles and  $\sqrt{\text{Root}}$  to construct a syntactic configuration, and after the operation of Spell-out Vocabulary Insertion for each root and phonological re-adjustment are operated at the stage called Morphology.



In the framework of DM, the traditional concept of “Word” is reconsidered, and non-lexicalists assume that there is no “Word” in a traditional sense and what is calculated in syntax is acategorical  $\sqrt{\text{Root}}$  and its categoral feature are determined by merging with a category-determining functional head (v, n, a...) as summarized in (2).

## (2) Terminals

- a. **Functional Morphemes:** There are composed exclusively of non-phonetic features, such as [past] or [pl], or the feature (or features) that make up the determiner node D of the English definite article the.
- b. **Roots:** These make up the open-class or ‘lexical’ vocabulary. They include items such as  $\sqrt{\text{Cat}}$ ,  $\sqrt{\text{OX}}$ ,  $\sqrt{\text{SIT}}$ .

(Embick and Marantz 2006)

Embick and Marantz (2006) assumes that only the functional head is a target for the Morphological operation as demonstrated below.

(3) Vocabulary Items for Past Tense (T[past])

|         |         |        |           |
|---------|---------|--------|-----------|
| T[past] | -t/___  | √LEAVE | √BEND...  |
| T[past] | -□/___  | √HIT   | √QUIT,... |
| T[past] | -ed/___ |        |           |

(Embick and Marantz 2006)

After Spell-out, the feature complex(√Root + v + [past]) acquires its morphophonological realization. √LEAVE + [past], for example, is realized as *left* following the morphophonological rule shown in (3). On the other hand, √PLAY + [past] is realized as *played* following the elsewhere condition. Based on piece-based theory of DM, Embick and Marantz (2006) also provides an excellent explanation for a morphological distribution of comparative/superlative morpheme (e.g. smarter/\*more smart, \*intelligenter/ more intelligent). In the previous analysis of comparative/superlative morphology, Poser (1992) proposes a mechanism of Poser Blocking which essentially assumes a competition of a word and a phrase. Embick and Marantz (2006) assumes that a competition of a word and a phrase is unnecessary and the morphophonological restriction on comparative/superlative forms is not a result of word & word (needless to say, word & phrase) competition. They propose that the morphophonological restriction that a blocking can be treated not as a competition of words but as the way that the DegP + √Root is realized at Morphology (see Embick and Marantz (2006) for a complete discussion of a blocking).

Finally, I introduce Marantz's (1997, 2001) logic for abandoning the traditional sense of a big "Lexicon" and close this section. Marantz (1997, 2001) reconsider an argument for idiom chunks in Chomsky (1970) which has been assumed to be a landmark of Lexicalism and Marantz argues that Chomsky (1970) actually argues against the Lexicalism (see Marantz 1997 for more detailed discussion). Here, I demonstrate one example of Marantz's argument against Lexicalist assumption referring Marantz (2001). Jackendoff (1996) argues that the "Lexicon" should be extended to include larger units than phrases showing the idiomatic interpretations of the following examples in (4).

- (4)a. any friend of yours is a friend of mine
- b. a breath of fresh air
- c. may the force be with you
- d. etc. for tens of thousands of examples

(Jackendoff 1996 and the Wheel of Fortune corpus cited in Marantz 2001)

Marantz (2001), however, takes Jackendoff's argument as actually discarding the notion of

“Lexicon” as below.

- (5) *Jackendoff’s observations call into question the notion that we don’t store information about structures unless the structures have special linguistic properties. None of the examples in (4(in his example (0))) have special structure --- none involve special connections between sound and meaning. Rather than arguing for an extended lexicon, Jackendoff is actually arguing that we should abandon the notion of a “lexicon” (of items with internal structure) entirely.* (Marantz 2001: 2)

In the following sections, I demonstrate that DM does not only exhibit a theoretical excellence but also gains empirical support. The next section will focus on the derivation of denominal verbs exploiting a mechanism of Manner Conflation(henceforce, MC) which is allowed in terms of Underspecification (Harley 2005,2007, Usuki 2006), and argue the fact that the denominal verbs show excentric behaviors in various configuration can be explained elegantly in DM.

## **2. Manner Conflation to v**

Harley (2005) proposes the mechanism of Manner Conflation(in her term Manner Incorporation) with respect to the derivation of denominal verbs. In this section, I show the system of Manner Conflation (henceforce, MC) and provide a justification of MC as a possible option in DM reviewing the arguments of Harley (2005) and Usuki (2006). As shown in (6), in English denominal verbs are productive.<sup>1</sup>

- (6)a. Sue hammered the metal (Harley 2005)  
b. Ross nailed up a window.  
c. Ross saddled the horse.  
d. Ross buttered the bread.  
e. Ross whiten the shirt.

As noted in Usuki (2006), subclasses of denominal verbs can appear in Double Object Construction(henceforth, DOC).<sup>2</sup> The instruments of communication as in (7a), which are

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<sup>1</sup> See Clark and Clark (1976) for more data of denominal/de-adjectival verbs. Also see Hale and Keyser (1993) for a syntactic derivation of denominal/de-adjectival verbs.

<sup>2</sup> The fact that denominal verbs can be compatible with DOC casts a serious problem for Hale and Keyser’s (1993, 2002, and sequential works) l-syntax. In the theory of l-syntax, denominal verbs are derived syntactically governed by purely syntactic constraint, Head Movement Constraint(henceforth, HMC). They assume that a cognate object in ‘laughed a big laugh’ shows the place where the surface verb is derived. In the case of DOC example (7a), the cognate object appears at direct object position from which the incorporation to the higher verb is prohibited by HMC. See Usuki (2006) for a complete discussion and treatment of the seemingly exceptional example.

collected in (8), and the name of delivery-service-company as in (7b) are particularly productive options in DOC.

- (7)a. Ross e-mailed me a heartwarming e-mail.
- b. John FedExed her the package.

(Usuki 2006)

- (8) (Verbs of Instrument of Communication): cable, e-mail, fax, modem, netmail, phone, radio, relay, satellite, semaphore, sign, signal, telephone, telecast, telex, wire, wireless. (Levin 1993)

Harley (2005) observes that instrumental denominal verbs shows quite different character from other denominal and de-adjectival verbs. She notices that the derived verbs inherit their (un-)boundness from their base nouns or adjectives. As the aspectual *for/in* test in (9)-(10) clearly reveals, the instrumental denominal verbs, however, do not inherit their (un-)boundness from their corresponding nouns.

- (9)a. Sue danced                                      for five minutes/ # in five minutes.
- b. Sue cleared the table                      # for five minutes/ in five minutes.
- c. John hammered the metal    for five minutes/ in five minutes.

(Harley 2005)

- (10) John e-mailed the message for an hour/ in an hour. (Usuki 2006)

In the example (9a), nominal *dance* is a semantically unbounded root, and the derived verb inherits its unboundedness and it is incompatible with *in*-phrase. In (9b), the adjective *clear* itself is a bounded event, and its boundedness is inherited to the verbal counterpart and it is compatible only with *in*-phrase. The instrumental verb, on the other hand, their boundness of the events are not inherited from their base nominals as the flexibility of *in-/for*-phrases implies in (9c) and (10).

Furthermore, the derived verbs do not necessarily imply the actual use of the corresponding tools. As exhibited in (11) and (12), the events can be conducted without using the corresponding tools.<sup>3</sup>

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<sup>3</sup> There is a problematic example, certain types of instrumental denominal verbs do imply the use of a corresponding tool as in (i). The example is taken from Arad (2003) and slightly modified.

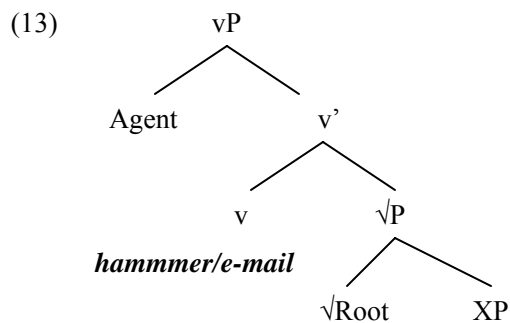
- (i) \*John nailed the paper with a pushpin.

For the analysis and treatment of this type of instrumental denominal verbs, see Usuki (2006).

- (11) a. I paddled the canoe with a copy of the New York Times. (Arad 2003)  
 b. String him up with a rope! (ibid.)  
 c. She anchored the ship with a rock. (ibid.)  
 d. He hammered the nail with a rock. (Kiparsky 1982 cited in Arad 2003)
- (12) There is no greater glory than becoming a verb. Font maven Kathleen Tinkel bestowed that honor on me after I gave her the world's best garlic press: she later told me she no longer presses garlic, she "Blatnerizes" it. It happens with products, too. People *xerox* important papers, even on Canon copiers, and later *FedEx* them, even if they use Airborne or another overnight delivery service. (Blatner 2000 cited in Barner D. and A. Bale 2002)

As the example (11d) shows *hammering the nail* can be true by using not a hammer but a rock. In the same way, *FedExing something* can be true even when the agent uses Airbone or another delivery service as proved in (12).

Taking all the special behaviors of instrumental denominal verbs, Harley (2005) proposes the mechanism of MC.



As shown in (13), an abstract  $\sqrt{\text{Root}}$  whose manner is not specified moves to a higher little  $v$ , and the manner components or *hammer/e-mail* are inserted at the higher little  $v$  then the little  $v$  get its name directly via a mechanism of MC, and the morphophonological realization of the verb *hammer/e-mail* is ensured by an encyclopedia.<sup>45</sup> As the result, the boundness of the  $\sqrt{\text{Root}}$  is not reflected to the whole configuration and the actual use of *a hammer/an e-mail/a FedEx* is not specified in the

<sup>4</sup> Here I use a term "little  $v$ " instead of a widely accepted representation "light  $v$ ". In MP, a light verb is assumed to be a locus of a semantic primitive [CAUSE], but in DM, it is assumed that a higher category-determining  $v$  can have various flavors as [CAUSE], [BECOME], [BE], and etc. (see Harley 2002 and Harley and Noyer 2000a)

<sup>5</sup> In fact, the spirit of this proposal is not new, but has been proposed by Hale and Keyser where they assume a certain type of verb which denotes a specific manner is derived not by an incorporation via head movement from a lower argument structure, but by putting a tag [hammer], for example, to the verbal head.

configuration and only their manner of action is specified.

In this section, I have briefly demonstrated how the instrumental denominal verbs get their names. Following Harley (2005), Usuki (2006), I will assume the operation of MC which is ensured under the condition of Underspecification. The productivity of instrumental denominal verbs is due to the applicability of MC at the functional little *v* in English.<sup>6</sup> Now, the question is whether the operation of MC is universal and can be operative cross-linguistically. In the following section, I will observe compound verbs and propose that MC apply to  $\sqrt{\text{Root}}$  in Japanese.

### 3. Manner Conflation to $\sqrt{\text{Root}}$

In the previous section, I have briefly demonstrate how MC apply to the syntactic configuration in English. Now the question is whether the MC is universal option available cross-linguistically. Undoubtedly, Japanese lacks denominal verbs completely as the ungrammatical examples in (14) show.

- (14)a. \*Ross-wa sono kugi-o hanmaa.  
           Ross-Top that nail-Acc hammer  
       b. \*Ross-wa sono kugi-o hanmaa-shi-ta.  
           Ross-Top that nail-Acc hammer-do-Past  
       c. \*Ross-wa sono kugi-o hanmaa-o shi-ta  
           Ross-Top that nail-Acc hammer-Acc do-Past  
           (14a-c) ‘Ross hammered the nail.’  
       d. Ross-wa sono kugi-o hanmaa-de tatai-ta.  
           Ross-Top that nail-Acc hammer-with hit-Past  
           ‘Ross hit the nail with a hammer.’

As shown in (14a)  $\sqrt{\text{Root}}$  cannot be verbalized without any verbal morphology in Japanese. Furthermore, the instrumental nominals cannot be verbalized by merging a light *v* as demonstrated in (14b).<sup>7</sup> The (14c) is ruled out by an independent filter Double-*o* restriction, which says in one

<sup>6</sup> Harley (2007) proposes that a single  $\sqrt{\text{Root}}$  has a possibility to be inserted in a *v* or a  $\sqrt{\text{Root}}$  position. Harley, for example, assumes that in the case of Dative Construction *give* is inserted in  $\sqrt{\text{Root}}$  position, and in the case of Double Object Construction *give* is inserted in a higher *v*. This theoretical shift might be a big enterprise to know the nature of Constructions in general. See Harley (2007) for more detailed discussion. See also Usuki (forthcoming) for the discussion of the relations between (un-)marked words and (un-)marked constructions and the theoretical implication for DM.

<sup>7</sup> On the other hand, *meere* ‘e-mail’ in Japanese shows rather interesting distribution as below(i).

- (i)a. \*Ross-wa Mary-ni juuyo-na fairu-o meer-u.  
           Ross-Top Mary-Dat important file-Acc e-mail.  
       b. Ross-wa Mary-ni juuyo-na fairu-o meer-shi-ta.  
           Ross-Top Mary-Dat important file-Acc e-mail-do-Past

clause only one accusative case appears. In Japanese, a particular manner accompanied by using a certain tool must be expressed using *-de* “with” as in (14d). In this section, I will observe the distribution of compound verbs in Japanese (Kageyama 1993, 1999) and reconsider the derivation of both syntactically/lexically derived compound verbs. The reanalysis of Japanese compound verbs in DM and the fact that Japanese do not have denominal verbs inevitably leads to one conclusion that in Japanese MC applies not to a little *v* but to a  $\sqrt{\text{Root}}$  position, which follows that parametric differences between English-type language and Japanese-type language can be induced from the parametric application of MC.

### 3.1 Compound Verbs in Japanese

Kageyama (1993, 1999) observes that there are two types of compound verbs in Japanese. One is called lexical compound verbs, and the other is called syntactic compounds as shown in (15) below.

- (15)a. Type A (lexical compounds): *uti-korusu* “shoot-kill = shoot to death,” *nomi-aruku* “drink-walk = tour bars,” *si-nokosu* “do-leave = leave undone,” *kiki-kaesu* “ask-return = ask back,” *oi-dasu* “chase-take-out = send out,” *nage-suteru* “throw-abandon = throw away,” *tobi-agaru* “jump-rise = jump up,” *naki-yamu* “cry-stop = stop crying,” *naki-sakebu* “cry-shout = cry and scream”
- b. Type B (syntactic compounds): *kaki-hazimeru* “write-begin = begin to write,” *tabe-oeru* “eat-finish = finish eating,” *hanasi-tuzukeru* “speak-continue = continue speaking,” *ugoki-dasu* “move-begin = begin to move,” *tabe-kakeru* “eat-set = be about to eat,” *tabe-sugiru* “eat-pass = overeat,” *ii-wasureru* “say-forget = forget to say,” *tabe-tukusu*

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(1a-b) ‘Ross e-mailed Mary an important file.’

- c. Ross-wa Mary-ni juuyo-na fairu-o pasokon-de meer-shi-ta.  
 Ross-Top Mary-Dat important file-Acc computer-de e-mail-do-Past.  
 ‘Ross e-mailed Mary an important file with his computer.’
- d. Ross-wa Mary-ni juuyo-na fairu-o meeru-de okut-ta  
 Ross-Top Mary-Dat important file-Acc e-mail-with send-Past.  
 ‘Ross sent Mary an important file with e-mail.’

The acceptable examples (ib-c) imply that *meeru* ‘e-mail’ behaves just like a Verbal Noun (henceforth, VN) in so-called Light Verb Construction in Japanese (Grimshaw and Mester 1988, Miyagawa 1989, and among others). In the example (ib) above, *meeru* ‘e-mail’ seems to have its own argument structure and *meeru* ‘e-mail’ is verbalized by merging a light *v* –*suru* ‘do’. I will tentatively leave the detailed analysis of *meeru-suru* ‘do e-mail’ for the future work. In Japanese VN shows rather interesting features. Essentially VN exhibits both nominal and verbal properties. For the systematic and rather elegant explanation of the derivation of VN in terms of configurationally theta-theory see Tada (2003).



“eat-exhaust = eat up”

(Kageyama 1999, 301)

As the names of each class imply, Kageyama (1993, 1999) assumes that lexical compound verbs are derived at D-structure, and syntactic compound verbs are derived at S-structure in the framework of Principle and Parameter Theory (henceforth, P&P theory). In the MP and also in DM, however, the independent statuses of D-/S-structure are discarded, and we only have a syntax and two interfaces, namely, LF and PF. Now, how can we explain the differences of both types of compound verbs keeping their significant differences. As Kageyama (1993, 1999) clearly shows, both of compounds show the lexical integrity. Fous particle *–sae* ‘even’ cannot intrude into a word as the examples (16a-b) exhibite.

- (16)a. \*Ueta hitobito-wa zassoo-o [tabe-sae-hazime]<sub>V</sub>-ta  
starved people-Top weed-Acc [eat-even-begin]-Past  
‘The starved people even began to eat weeds.’ (Kageyama 1999, 299)
- b. \*Takuya-wa me-o [naki-sae-harashi]<sub>V</sub>-ta  
Takuya-Top eyes-Acc [cry-even-swollen]-Past  
‘Takuya cried (and as a result he) made his eyes swollen’

The ungrammaticality of the examples above clealy indicates that both syntactically derived compound verbs as in (16a) and lexically derived compound verbs exhibit a wordhood. The theoretical problem and interest here is what a word is, what can be counted as a word (see Marantz 2001 for the discussion of a wordhood). The main issue of this paper is revealing the nature of lexically derived compound verbs. I argue that they are actually derived in a syntactic configuration exploiting MC. Before getting into the issue of the derivation of lexically derived compound verbs, in the following subsection I will briefly reconsider the derivation of syntactically derived compound verb in DM, and argue the wordhood is accomplished when the category-defining functional head *v* merges to the  $\sqrt{\text{Root}}$ .

### 3.2 Syntactic Compound Verbs in DM

Kageyama (1993,1999) argues that syntactically derived compound verbs can be derived in three distinct configurations. The following configurations are modified as fit with the framework of DM making no radical changes of Kageyama’s original observation. Kageyama (1993,1999) assumes that transitives can be classified into two groups. One is the type the internal *vP* (in his original term *VP*) projects its specifier and has a control structure, and the other is that the second verb takes a *V'* complement whoes head does not project its specifier internally. In the framework

of MP and also of DM, the bar-level projection is not theoretically tenable. The bar-level is just a representation of the derivational steps and itself does not have any syntactic status. Therefore, in the necessity of the modification to fit with the framework of DM and MP, I tentatively assume the modified configuration (17b) for the control type configuration, and (17c) for the latter type of transitive structure.<sup>8</sup> The non-trivial differences between Kageyama's original structure and the configuration presented below is that the existence of acategorical root, and also I assume the second verb *sokone*-‘miss’ is in the terminal node of AspP which project its specifier and then the compound element *tabe-sokone* ‘eat-miss’ moves to a higher terminal node of category-determining functional v to supply it with a p-signature or morphophonological feature.<sup>9,10</sup> Kageyama's (1993,1999) primary motivation for distinguishing the two types of transitive structures is whether a ‘long-distance passive’ can be compatible with or not as shown in the examples (18a-b).

(17)a. **Intransitive structure (modified)**

vP

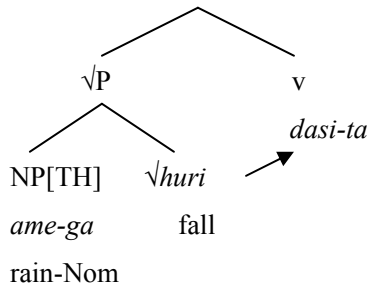
b. **Transitive type 1 (modified)**

vP

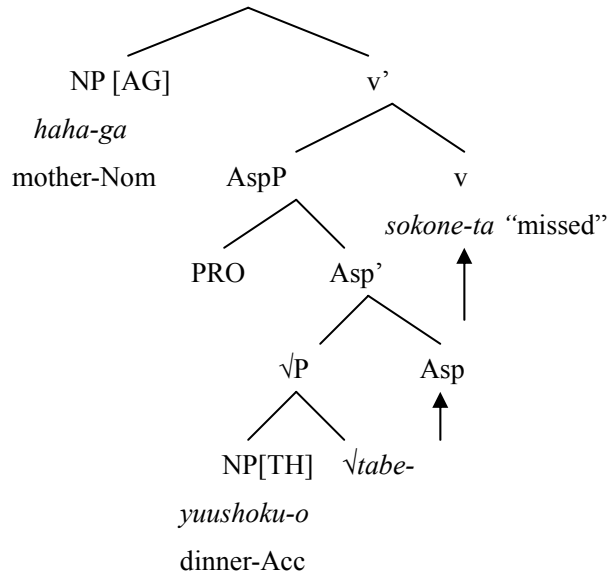
<sup>8</sup> There is a possibility that the second verbal head or the aspectual head in (17) may have more complex internal structure; [*v-naosi*] ‘did again’ might be a complex of a  $\sqrt{naosi}$  and a category-determining functional v. If it is, the syntactically-derived compound verbs consists of separate v's and it may trigger a need for the lexical integrity which both lexically-derived compound verbs and syntactically-derived compound verbs show. This is not a trivial issue to explore, but in this paper my main interest is how to reinterpret the derivation of lexically-derived compound verbs without D-structure in the framework of DM, so here I leave it for the future work.

<sup>9</sup> The existence of AspP between VP and vP has been assumed among many linguists (see Hiraiwa 2005). Here I tentatively assume that the terminal node of AspP is a locus of the second element in compound verbs. The justification for the existence of AspP and whether the second element is, in fact, a realization of the AspP must be elaborated further in detail, but these are beyond the scope of this paper, so I leave it for the future work.

<sup>10</sup> The blanketed [AG](=Agent) and [TH](= Theme) represent theta-roles which are interpreted at each edge. I assume that a theta-role is not something assigned by a verbal head, and a theta-role is reduced to purely configurational relationships; a distinct edge is interpreted as having a distinct theta-role(see Tada 2003).

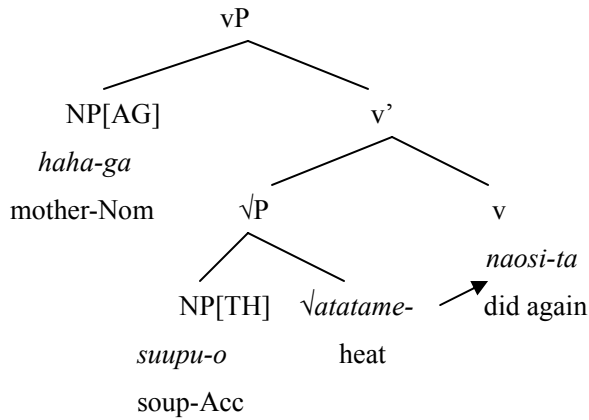


‘The rain began to fall.’



‘Mother missed eating dinner.’

c. **Transitive type 2 (modified)**



‘Mother reheated the soup.’

- (18)a. VP-complement (17b type): -sokoneru “miss,” -sobireru “miss the chance,” -okureru “be late,” -akiru “become weary,” -tukeru “be accustomed,” -kaneru “hesitate”

yuusyoku-o tabe-sokone-ta → \*yuusyoku-ga tabe-sokone-rare-ta  
 dinner-Acc eat-miss-Past dinner-Nom eat-miss-Pass.-Past  
 “He missed eating dinner.” “(lit.) Dinner was missed eating”

- b. V'-complement (17c type): -naosu “do again,” -wasureru “forget,” -oeru “finish,” -tukusu “exhaust, do thoroughly”

suupu-o atatame-naosi-ta → suupu-ga atatame-naos-are-ta  
 soup-Acc heat-do again-Past soup-Nom heat-do again-Pass.-Past  
 ‘She reheated the soup.’ ‘The soup was reheated.’

As demonstrated above in (18), the verbal compounds (18a) are not compatible with a passive morpheme *-rare*. Kageyama proposes the control structure which has a PRO in the inner VP-Spec which corresponds to the modified configuration (17b). Kageyama assumes that the passivization of the (18a)-type verbs is ruled out since the VP internal PRO blocks the movement of the object inducing a violation of Relativized Minimality (Rizzi 1991). Kageyama's argument for control structure can be maintained in the modified configuration (17b) on the assumption that the Locality condition for the movement blocks moving out of the object to the subject position in passive structure. In the modified version (17b), I assume that a root  $\sqrt{tabe-}$  merges with a head of AspP and the complex element moves to the higher category-determining functional v *-sokone* 'miss' to provide it with a morphophonological feature and get its wordhood as a verb. Notice that in the configuration (17b) the AspP projects its specifier and takes an external argument PRO. Therefore, the passivization from this configuration is prohibited with the same reason with Kageyama's original argument. On the other hand, as observed by Kageyama, the acceptability of the long passive construction in (18b) can be explained assuming that when a passive affix *-rare* attaches to the complex verb *atatame-naosi* 're-heat', the external argument of v is absorbed and nothing prevents the object from moving to the subject position. In the configuration (17b) I assume that an Asp head must associate with the higher category-determining functional v projection to get its wordhood and also must project its specifier as a locus of PRO.<sup>11</sup> There is an interesting contrast in more complex compound verb formation shown in the examples (19) below.

- (19)a. Takuya-wa    suupu-o    atatame-naosi-sokone-ta.  
           Takuya-Top   soup-Acc    heat-re-miss-Past  
           'Takuya missed reheating the soup.'
- b. \*Takuya-wa    suupu-o    atatame-sokone-naosi-ta  
           Takuya-Top   soup-Acc    heat-miss-re-Past.  
           'Takuya re-missed heating the soup.'

The (un-)grammaticality of the sentences in (19) seem to cast a serious problem for the proposed configurations in (17) since as far as the configurations are concerned, there seems no explanation for the ungrammaticality of (19b). Here I tentatively assume that *-naosi-* in (19) is not a verbal head but it is like a prefix and the derivation of *atatame-naosi-sokone-ta* might have a distinct process from *atatame-naosi-ta* and *tabe-sokone-ta*. The more extensive research, however, is

<sup>11</sup> Whether the configuration (17c) does not include AspP as depicted above or does include but it is defective is another issue to be explored. Here I tentatively assume that there might be AspP between a functional v and a root but its defectiveness allows it to be deleted.

needed to justify the derivation of *atatame-naosi-sokone-ta*, and I leave it open here.

Finally, Marantz (1997, 2001) and Arad (2003) assume an acategorical root, and when it merges with a category-determining functional head, its semantic and phonological features are closed-off and it becomes inaccessible from the outside of the word. Notice in the presented configurations in (17b-c), both types of transitive compound verbs are assumed to be derived by merging a root with a category-defining *v*, it follows that the “Woodhood” of the compound verb as a verb is established and its internal structure of the word becomes inaccessible from the outside which induces a lexical integrity demonstrated in the examples (16).<sup>12</sup>

In this subsection, I have briefly reconsidered the derivation of syntactically-derived compounding verbs in terms of Kageyama (1993, 1999). In this paper, my focus of the topic is idiosyncratic nature of lexically-derived compound verbs, so I tentatively propose the modified configuration of syntactically-derived compound verbs following essentially Kageyama’s observation. In the following subsection, I will focus on lexically-derived compound verbs and argue that they are actually derived in syntax and that this unified and also the simplest derivational analysis of two types of compound verbs in Japanese is only possible in the framework of DM which assumes an acategorical root and piece-based derivation in syntax.

### 3.3 Lexical Compound Verbs as a Manner Conflation at $\sqrt{\text{Root}}$

Kageyama’s argument for syntactically-derived compound verbs, as demonstrated in the previous subsection, can be reinterpreted in the framework of DM without a drastic change in its spirit. Lexically-derived compound verbs in Kageyama’s terms cast non-trivial problems on the present theory of DM. DM is a non-lexicalist approach which does not postulate any kind of lexical operation, and every piece of derivation from word-formations to phrasal configuration is operated by a single derivational engine, Merger. Kageyama (1993,1999) assumes that lexically-derived compound verbs are derived in D-structure in the framework of Principle and Parameter theory (henceforth, P&P theory). In DM, however, no distinctions of D-/S-structure is assumed, and in fact, any immediate stages get no place in syntax, but rather we assume that the syntax is a stage where the syntactic configuration is constructed by a cyclic application of merge. In this subsection, I observe the idiosyncratic behaviors of lexically-derived compound verbs following Kageyama’s guideline, then argue that they are not, in fact, derived in D-structure but both syntactically-derived compound verbs and lexically-derived compound verbs are derived invariantly in syntax by a single operation of merge. Furthermore, I propose that they are derived by the application of MC to  $\sqrt{\text{P}}$  in Japanese, which creates a parametric difference between languages.

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<sup>12</sup> Here, I tentatively assume that the nature of a head of AspP and that of  $\sqrt{\text{P}}$  must be distinguished to capture the differences between syntactically-derived compound verbs and lexically-derived compound verbs, which is discussed in the next subsection. The complete justification needs a further elaboration, so I leave it open here.

Lexical compound verbs listed in (15a) repeated here as (20) exhibit a semantic idiosyncrasy and morphological conditions, which Kageyama assumes to be a motivation for proposing a lexical operation of the derivation of this type of compound verbs.

- (20) Type A (lexical compounds): uti-korusu “shoot-kill = shoot to death,” nomi-aruku “drink-walk = tour bars,” si-nokosu “do-leave = leave undone,” kiki-kaesu “ask-return = ask back,” oi-dasu “chase-take-out = send out,” nage-suteru “throw-abandon = throw away,” tobi-agaru “jump-rise = jump up,” naki-yamu “cry-stop = stop crying,” naki-sakebu “cry-shout = cry and scream”  
(Kageyama 1999, 301)

First, as Kageyama observes, all compound verbs inherit the argument structure of the second verb in conformity with the Right Head Rule (Williams 1981).

- (21)a. Inu-ga doroboo-o/\*-ni kanda.  
dog-Nom burglar-Acc/\*Dat bite-Past  
‘The dog bit the burglar.’  
b. Inu-ga doroboo-ni/\*-o kami-tui-ta  
dog-Nom burglar-\*Dat/-Acc bite-stick-Past  
‘The dog bit at the burglar.’

(Kageyama 1999)

The transitive verb *kamu* ‘bite’ takes an accusative case particle as shown in (21a), but when it is compounded, as in (21b), its feature is not percolated and the compound verb *kami-tuk-u* ‘bite-stick’ takes a dative case particle following the dative marking of the second verb *tuku* ‘stick’.

Second, lexically-derived compound verbs show a lexical selectional restriction which Kageyama (1993) proposes as The Transitivity Harmony Principle (henceforth, THP).

(22) *The Transitivity Harmony Principle*

Given the three argument structures below, lexical compound verbs are built by combining two verbs of the same type of argument structure.

- (a) transitive verbs: (x <y>)
- (b) unergative intransitive verbs: (x <y>)
- (c) unaccusative intransitive verbs: <y>

THP represents that two verbs in lexical compounds must take the same type of argument structure, so a transitive verb can be compounded with a transitive verb or a unergative verb which takes an external argument as depicted in the examples (23a-b), on the other hand, both transitive and unergative verbs cannot be compounded with a unaccusative intransitive verb which does not take an external argument as shown in (24a-d). Unaccusative intransitive verbs can be compounded only with unaccusative intransitive verbs (unacc. + unacc.: koroge-otiru “trumble-fall”).

- (23)a. transitive V1 + unergative V2  
       (teki-o) mati-kamaeru “(enemies) wait-be prepared”  
       b. unergative V1 + transitive V2  
       (me-o) naki-harasu “(eyes) cry-cause swell”

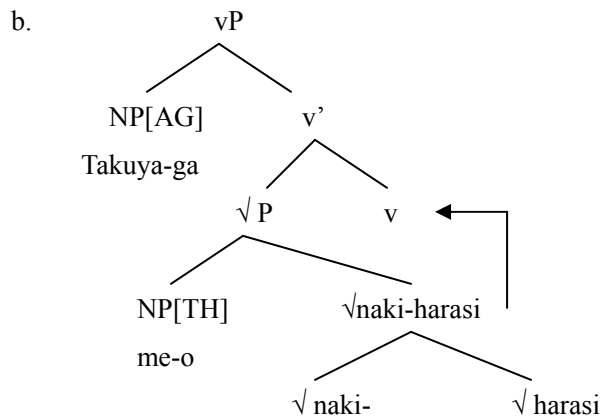
(Kageyama 1999, 309)

- (24)a. \*transitive V1 + unaccusative V2  
       \*tuki-otiru “push fall” (cf. tr. + tr.: tuki-otosu “push-make fall”)  
       b. \*unaccusative V1 + transitive V2  
       \*ore-mageru “snap-bend” (cf. tr. + tr.: ori-magaru “fold-bend”)  
       c. \*unergative V1 + unaccusative V2  
       (me-ga) \*naki-hareru “(eyes) cry-get swollen” (cf. (23b))  
       d. \*unaccusative V1 + unergative V2  
       \*koroge-oriru “trumble-step down” (cf. unacc. + unacc.: koroge-otiru “trumble-fall”)

(Kageyama 199, 309)

Kageyama (1993) considers THP as a morphological constraint on the formation of lexically-derived compound verbs, arguing that the derivation takes place at the level of argument structure. Notice that the level of argument structure itself is discarded in DM and also even in MP, and the LF and PF are the only interface levels in the recent stream of syntax. In DM, the argument structure is reduced to purely configurational relations between each argument, and a distinct syntactic position is invariantly interpreted as playing a role as a distinct thematic role. Now, a question is how we can explain Kageyama’s generalization of THP in the framework of DM without the level of argument structure which is assumed to link a lexical semantic structure of a verb with a syntactic position. Kageyama assumes that THP is a morphological restriction which is on the level of argument structure, but it is not, in fact, explanatory. I argue that the lexically-derived compound verbs are not derived through a lexical operation but they are actually derived in syntax by exploiting MC at  $\sqrt{P}$ . I assume this type of compound verbs, which is exemplified in (25a), is derived by an application of MC at  $\sqrt{P}$  as shown in (25b).

- (25)a. Takuya-ga me-o naki-harasi-ta  
 Takuya-Nom eyes-Acc cry-cause swell-Past  
 “Takuya cried (and as a result he) made his eyes swollen”



MC applies to  $\sqrt{\text{harasi}}$  “swell” and derives the complex root  $\sqrt{\text{naki-harasi}}$ , and then the complex root internally-merges to a higher category-determining  $v$  to supply it with a morphophonological feature and at the same time get a wordhood.<sup>13</sup> The key to recover the nature of THP is a lexical compatibility of a particular verb with an external argument. Therefore, before reinterpreting the THP in DM, let me introduce how (i) the external argument is treated and (ii) the wordhood is achieved in DM.

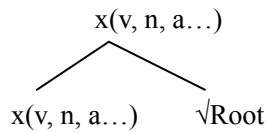
First, Marantz (1997), following Levin and Rappaport (1995), assumes that whether a particular verb takes its external argument is determined by whether the event denoted by the verb is an externally caused change of state or an internally caused change of state. Marantz (1997) convincingly argues that the external argument appears outside of  $\sqrt{P}$  and it is the specifier of a category-determining functional  $v$ , and whether a category-determining  $v$  takes an external argument is determined by Encyclopedia (see Marantz 1997).

Second, Marantz (2001) assumes two types of derivations of words as in (26), which is based on the hypothesis that the word is, in fact, decomposed into an acategorical root and a category-determining functional head (see Marantz 2001 for more detailed discussion).

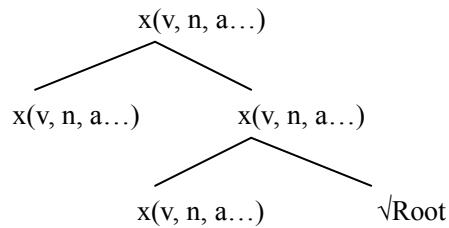
<sup>13</sup> Matsumoto (1996) cited in Kageyama (1999) classifies lexically-derived compound verbs into four types; (i) pair compounds (V1 and V2: *hikari-kagayaku* “shine-sparkle = shine brightly”), (ii) cause compounds (V2 because of V1: *obore-sinu* “drown die = be drowned to death”), (iii) manner compounds (V2 while V1: *nagare-otiru* “flow fall = flow down”) and (iv) means compounds (V2 by V1-ing: *naguri-korosu* “strike-kill = strike (someone) to death”). In this paper, I assume all semantic types of the lexically-derived compound verbs are derived uniformly by the application of MC and the semantic difference of the created compound verbs are a side effect determined by associations of compounded roots and Encyclopedia.



(26)a. Merger with root



b. Merger above a category-determining morpheme



Marantz (2001) summarizes the characteristics of two types of word-formations as cited here as (27a-b) below.

(27)a. Merger with root implies:

- (i) negotiated (apparently idiosyncratic) meaning of root in context of morpheme
- (ii) apparent semi-productivity (better with some roots than others)
- (iii) meaning of construction cannot be an operation on “argument structure” but must depend on root semantics independent of argument structure (see Barker 1988 and Sugioka 1998, among others, on this distinction)
- (iv) corollary of the above: cannot involve the “external argument” of the verb.

b. Merger above a category-determining morpheme

- (i) compositional meaning predicted from meaning of stem
- (ii) apparent complete productivity
- (iii) meaning of structure can involve apparent operation on argument-structure
- (iv) can involve the external argument of a verb

(Marantz 2001, 15)

Now, it is a time to give an explanation for Kageyama’s THP and provide a justification for the proposed syntactic derivation of lexically-derived compound verbs in (25b) above. Assuming the configuration (25b) with the application of MC to  $\sqrt{\text{Root}}$  and the way the external argument is projected as Marantz (1997) suggests, the THP is explained rather straightforwardly. In the derivation depicted in (25b), the MC applies to the  $\sqrt{\text{Root}}$  and the complex root is composed, then it internally merges with a higher category-determining v. Whether the v projects its external argument must be determined by a choice that the complex root is interpreted as an externally caused event or an internally caused event in Encyclopedia. I assume that the expended interpretation of (27a)-(i) to root compounds is possible and propose that when the MC applies to a root, each root

must negotiate not to create any semantic contradiction.<sup>14</sup> Therefore, the THP can be reduced from a selection of an argument structure to a negotiation of compounded root semantics interpreted in Encyclopedia.

Matsumoto (1996) points out the examples in (28) as exceptions for THP. As Kageyama notices, the examples (28a) can be a kind of dialect spoken in a particular region.<sup>15</sup>

- (28)a. (\*) ori-magaru (fold-bend), sui-agaru (suck-go up), tumi-agaru (pile-go up), tatakai-horobiru (battle-be ruined), kui-tubureru (eat-collapse)  
 b. uti-agaru (hit-go up), hari-tuku (paste-be attached), yaki-tuku (burn-be attached), musubi-tuku (fasten-be attached)

(Kageyama 1999, 310)

The examples in (28b) seem to be real counter-examples for THP since these compound verbs are commonly used and they are composed of prohibited combination; unacc. + tr. and unacc. + unerg. Kageyama suggests that the compound verbs in (28b) are results of back-formation from their transitive counterparts. He notes that the intransitive version of the back-formed compound verbs are semantically handicapped in the selection of the direct object as shown in the examples (29) below.<sup>16</sup>

- (29)a. Hutatu-no ziken-ga musubi-tuite-iru.  
 two-Gen cases-Nom fasten-attach-Present  
 ‘Two cases are tied together.’  
 b. \*Nihon-no roopu-ga musubi-tuite-iru.

<sup>14</sup> Marantz (1997, 2001) does not assume the mechanism of root compounds as shown above. In the framework of DM, however, I assume that the root compounding or a application of MC to a root is a possible option.

<sup>15</sup> In fact, I do not accept any of these compound verbs as grammatical.

<sup>16</sup> Not all the compound verbs may show the semantic handicap in comparison with their transitive counterparts.

- (i)a. Iyana omoide-ga nouru-ni yaki-tuite-iru.  
 Bad memory-Nom mind-Dat burn-attach-Present  
 ‘Bad memory is in my mind.’  
 b. ? Hidoi yakedo-no ato-ga ude-ni yaki-tuite-iru.  
 Terrible burn-Gen stain-Nom arm-Dat burn-attach-Present  
 ‘A terrible stain of burn remains on my arm.’

In the example (i), the compound verb takes an abstract argument *omoide* ‘memory’, and as shown in example (ii) the compound verb can also take a concrete argument *hakedo* ‘burn’. To justify Kageyama’s argument, a complete investigation of the distribution of compound verbs with a concrete/abstract argument in is needed, which is beyond the scope of this paper. Therefore, I leave it for the future work.

two-Gen ropes-Nom fasten-attach-Present

‘Two ropes are tied together.’

According to Kageyama (1999), the compound verbs which are derived by a back-formation exhibit a semantic idiosyncrasy and cannot take a concrete object as the ungrammaticality of the example (29b) indicates. There, however, still remains a mysterious question why the compound verbs derived by a back-formation essentially show the semantic idiosyncrasy and a selectional restriction on the argument. Kageyama’s (1999) observation might not provide any explanation for the question but merely state that it is derived by a back-formation and it has somehow special status. The proposed derivation of lexically-derived compound verbs in (25) can provide an explanation for the semantic idiosyncrasy of them. With the extended interpretation of Marantz’s observation of two types of derivations of words in (27), I propose that when MC applies to root, the each root must negotiate to meet each semantics and the idiosyncrasy is created. Further, I assume that the selectional restriction on the argument is not syntactic one, for the grammatical example (29a) indicates the example (29b) must be syntactically well-formed. I propose the example (29b) is ruled out by Encyclopedia since in a real world the concrete object ropes cannot move by themselves, so the event denotes the existence of Agent strongly (see Harley 2000 for a discussion of syntactically ill-formed nominalizations and pragmatically ill-formed nominalizations). When the Agent appears (or a category-determining *v* project its specifier) as below (30), the compound verb gets a transitive morphological realization and the sentence turns out to be grammatical.

(30) Kaizoku-ga Nihon-no roopu-o musubi-tukete-iru.

Pirate-Nom two-Gen ropes-Acc fasten-attach-Present

‘A pirate tied two ropes together.’

Therefore, the apparent counterexamples for Kageyama’s THP in (28b) are not problematic in the analysis of compound verbs in the framework of DM, but rather they are presumed option as I argue above.

Furthermore, the proposed configuration (25b) is further supported empirically. First, there is a syntactic evidence which supports the configurations in (25b) and (17). As the comparison of (31a) and (31b) shows that a lexically derived compound verb in (31a) is not compatible with a “do so” replacement, but a syntactically derived compound verb in (31c) can be replaced by “do so”.

(31)a. \*Takashi-wa me-o naki-harasi, Chie-mo so-si-harasi-ta.

Takashi-Top eye-Acc cry-cause swell Chie-even so-do-swell-Past

‘Takashi cried (and as a result he) made his eyes swollen, and Chie did so too’

- b. Takashi-wa me-o naki-harasi, Chie-mo so-si-ta.  
 Takashi-Top eye-Acc cry-cause swell Chie-even so-do-Past  
 ‘Takashi cried (and as a result he) made his eyes swollen, and Chie did so too’
- c. Takashi-wa asa-made utai-tuzuke, Chie-mo so-si-tuzuke-ta.  
 Takashi-Top morning-until sing-continue Chie-even so-do-continue-Past.  
 ‘Takashi kept singing till the morning, and Chie did so too.’

I assume that the “so” in “do so” is a pronominal element which has a reference to the presupposed event and that not vP but a  $\sqrt{P}$  is a verbal event denoter in a narrow semantic sense since the nature of the vP is dependent of Encyclopedia as I argue above. Therefore, the configuration (25b) clearly indicates that the subpart of the complex root  $\sqrt{\text{naki-harasi}}$  cannot be replaced by “so” which result in an ungrammatical example (31a), but, as shown in (31b), the whole complex  $\sqrt{\text{naki-harasi}}$  can be replaced by “so” as expected. On the other hand, the free replacement of “do so” in syntactically derived compound verbs is expected in the proposed configuration (17) since in this type of compound verbs the second element in the compound is clearly outside of  $\sqrt{P}$ .

The (un-)grammaticality of an honorific form in two types of compound verbs provides further supports for (17) and (25) though it might be rather weak or indirect.

- (32)a. sensei-wa nimotu-o moti-kaet-ta  
 teacher-Top stuffs-Acc bring-go back-Past.  
 ‘The teacher brought back the stuffs.’
- b. \*sensei-wa nimotu-o o-moti-ni-nari-kaet-ta  
 teacher-Top stuffs-Acc Hon-bring-Ni-become-go back-Past.  
 ‘The teacher brought back the stuffs.’
- c. sensei-wa nihonsyu-o nomi-hajime-ta.  
 Teacher-Top Japanese sake-Acc drink-begin-Past.  
 ‘The teacher began drinking *sake*.’
- d. sensei-wa nihonsyu-o o-nomi-ni-nari-hajime-ta.  
 Teacher-Top Japanese sake-Acc Hon-drink-Ni-become-begin-Past.  
 ‘The teacher began drinking Japanese *sake*.’

(Kayageya 1993)

The first verb of a syntactically-derived compound verb is compatible with an honorific form as shown in (32d). On the other hand, the first verb of a lexically-derived one is incompatible with an honorific form as the example (32c) indicates. It is controversial when and how the honorific form morpheme attaches to the base verbal element. It is clear, however, that the honorific morpheme

cannot attach to the first element of the lexically-derived compound verbs, which indicates that the internal structure of the lexically-derived compound verbs is not penetrable. Assuming acategorical root and the configuration (25) for the derivation of lexically-derived compound verbs, the impenetrability of the honorific morpheme is explained. In the process of the derivation (25), MC applies to the root, which constitutes a complex root, and it merges with the category-determining functional v. According to Marantz (1997, 2001) and Arad (2003), when an acategorical root merges with a category-determining head, the semantics and morphophonological information is closed-off and it becomes impenetrable from the outside of the functional projection. Therefore, the impenetrability of the honorific form in lexically-derived compound verbs is a natural consequence in DM.

Finally, the idiosyncrasy and the semi-productivity of the lexically-derived compound verbs can be taken as further empirical evidence to support the application of MC to  $\sqrt{P}$ . It is possible to replace the first verb *naki-* ‘cry’ of the syntactically-derived compound verbs with a Verbal Noun *goukyuu-* ‘cry hard’ which has a similar meaning with the first verb in the compound as the grammatical example (33d) shows. On the contrary, the replacement of Verbal Noun *goukyuu-* ‘cry hard’ with the first verb *naki-* ‘cry’ in the lexically-derived compound verbs is ruled out as shown in (33b).

- (33)a. *naki-harasi-ta*  
 cry-cause swell-Past  
 ‘to cried (and as a result he(she)) made his(her) eyes swollen’
- b. \**goukyuu-si-harasi-ta*  
 cry hard-do-swell-Past  
 ‘to cried hard (and as a result he(she)) made his (her) eyes swollen.’
- c. *naki-hajime-ta*  
 cry-begin-Past  
 ‘began to cry.’
- d. *goukyuu-si-hajime-ta*  
 cry hard-do-begin-Past  
 ‘began to cry hard.’

Assuming that the second verbal element has its verbal categorial feature (or an aspetuctal feature in the case of (17b)), it is natural to assume that the first verbal element is changeable since the second verbal element has its own status as a verb (or an aspectual head). In the case of lexically-derived compound verbs both roots has no status as a verb and they are dependent each other. Therefore, the first root in lexically-derived compound verb cannot be replaced freely,

which results in a semi-productivity of the lexically-derived compounds. Furthermore, the semantics of lexically-derived compound verbs must be negotiated between two roots in the process of the derivation, which leads to the idiosyncrasy of the lexically-derived compound verbs.

In this section, I argue both syntactically-/lexically-derived compound verbs are derived in syntax by a single operation merger. Re-examining the observation of compound verbs by Kageyama (1993, 1999) in the recent framework of DM, we can get closer to more simple and elegant explanation of word-formation. I propose that the application of MC to  $\sqrt{P}$  can make Japanese possible to idiosyncratic compound verbs. The parametric application creates idiosyncratic words in both languages. In the following section, the condition where MC applies is justified.

#### 4. On the Nature of MC(\*)

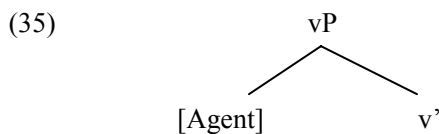
In the previous sections, I propose that MC\* applies to a higher  $v$  in English which results in a productivity of denominal verbs which denotes a particular manner of action, and MC applies to  $\sqrt{P}$  in Japanese which results in a productivity of compound verbs.<sup>17</sup> Here, I propose the Symmetry Condition on MC (henceforth, SC) as summarized in (34). I assume that when the MC applies at a terminal node  $\alpha$ , the application of MC creates a symmetrical configuration at the terminal node  $\alpha$ .

##### (34) *The Symmetry Condition on MC*

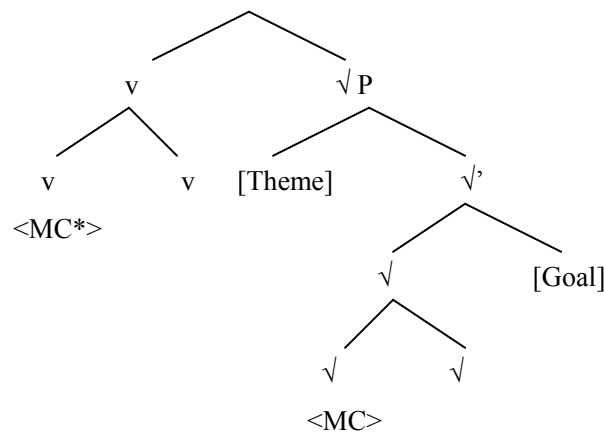
The application of MC creates a symmetrical configuration at the terminal node  $\alpha$  where the MC applies.

- (i) MC\*; the inserted element is an abstract functional head  $v$  which is a locus of various flavors and its morphophonological feature is provided to the verbal complex at the stage of Morphology.
- (ii) MC; the inserted element is a  $\sqrt{\text{Root}}$  which has its semantic and phonological features.

As demonstrated in (35), when MC\* applies to a category-determining functional head  $v$ , it results in a symmetrical  $[v-v]$  complex. In the same fashion, when MC applies to a  $\sqrt{\text{Root}}$ , it creates a symmetrical  $[\sqrt{\text{Root}} - \sqrt{\text{Root}}]$  complex.



<sup>17</sup> Here the term MC\* represents a MC applied to a higher  $v$ . I assume the nature of MCs which applies to a higher  $v$  and a root is fundamentally the same, but for the representative reason I use the term MC\* to distinguish it from MC applied to a root.



The SC provides a theoretical explanation for a question why the application of MC\* in English results in a single verb and the application of MC creates a compound verb in Japanese. Embick and Marantz (2006) assumes that the only functional morphemes are subject to Underspecification, and its morphophonological feature is provided to the terminal node and re-adjusted at the stage of Morphology.

#### (36) Terminals

- a. **Functional Morphemes:** There are composed exclusively of non-phonetic features, such as [past] or [pl], or the feature(or features) that make up the determiner node D of the English definite article the.
- b. **Roots:** These make up the open-class or 'lexical' vocabulary. They include items such as √Cat, √OX, √SIT.

(Embick and Marantz 2006)

Assuming the distinct characters of a functional head and a root with Embick and Marantz, we can get to the answer for the question; in the case of MC\* a symmetrical terminal node consists of functional v complex whose morphophonological feature is underspecified and provided at the stage Morphology. On the other hand, when MC creates a symmetrical terminal node which is a √Root complex, each root has its own independent morphophonological feature.

The lack of phonological feature of v leads to a creation of a single verb whose morphophonological feature for the symmetrical v-v complex is provided at Morphology when MC\* is operated. When MC applies to √Root, in the created symmetrical √Root complex each √Root has its distinct morphophonological feature, which results in a formation of compound verbs. Essentially, the difference of MC\* and MC is the timing of insertion. Therefore, MC\* and MC are fundamentally the same operation except the timing of insertion. Assuming the two distinct timing of SC, we can explain why the application of MC\* results in a single verb in English and that of MC

results in a compound verb. Now the question is what causes a certain language the choice among the options of MC\* or MC, in other words, what determines the timing of the insertion of <Manner Component> to the syntactic configuration. Another question which must be concerned is whether a language exists which allows both MC\* and MC at the same time. The former must be related to the canonical nature of building a configuration in a language, which causes thematic order in it. Another possibility of the explanation can be a difference in the semantic nature of  $\sqrt{P}$ . There can be parametric difference in the contents of root in comparison of English and Japanese. The investigation of the semantics of a root, however, is getting more and more important in the recent stream of DM. The justification of a particular content in root is beyond the scope of this paper, so I leave it open here. For the latter question, an exclusive cross-linguistic investigation is still in need. Therefore, I will leave them for the future work (see Usuki 2007, forthcoming).

In the following section, I will observe a cross-linguistic typology focusing on the distribution of manner expression.

## 5. An Implication for Satellite-framed/Verb-framed Languages

Talmy (2000) proposes that world languages can be classified into two types; (i) in Verb-framed Languages (e.g. Japanese, Spanish, and etc.) a Path is incorporated into a verb and a Manner expression is realized as an adjunct. (ii) in Satellite-framed Languages (e.g. English and etc.) a Manner is incorporated into a verb and a Path is realized as an adjunct.

- (36)a.    botoru-wa    doukutu-kara    uite       dete-ki-ta  
           the bottle-Top the cave-from    floating       come-out-Past  
           <Figure>    <Ground/Path>    <Manner/Cause>    <Motion/Path>  
           ‘The bottle came out of the cave floating.’
- b.    Ross-wa    hanmaa-de    sono-kinzoku-o    pechanko-ni    tatai-ta  
       Ross-Top    hammer-with    that-metal-Acc    flat-Ni    hit-Past  
       <Figure>    <Instrument/Manner>    <Thing>    <Manner>    <Motion>  
       ‘Ross hammered the metal flat.’

A Verb-framed language such as Japanese exemplified above (36) incorporates a Path as <dete-ki-ta> ‘come-out’ in (36a) and expresses a Manner as an adjunct as <uite> ‘floating’ in (36a) and <hanmaa-de> ‘with a hammer’ and <pechanko-ni> ‘flat’ in (36b). On the other hand, Satellite-framed Language such as English incorporates a Manner as <floating> in (37a) and <hammering> in (37b) and expresses a Path as an adjunct as <out of> in (37a) and <being flat> in (37b).



- (37)a. The bottle floated out of cave.  
           <Figure>   <Motion/Manner/Cause>   <Path>   <Ground>  
 b. Ross hammered the metal flat.  
           <Figure>   <Motion/Manner/Cause>   <Thing>   <Path(Result)>

Assuming that Talmy's observation and crosslinguistic classification are on the right track, a non-trivial question emerges; what causes the crosslinguistic differences? More, specifically what causes the differences of Verb-framed Languages and Satellite-framed Languages? It is true that as Talmy observes there is a clear division between two types of languages. Notice, however, each language exhibits a complementary option. In English a single verb may fail to express a Path, but it can express a Path compositionally in a combination with a particle as shown in (38a). Furthermore, what is interesting about particle constructions is its idiosyncrasy as shown in (38b). In (38b), *look up* is interpreted as 'respect'.<sup>18</sup>

- (38)a. John looked up to the sky.  
       b. John looked up to the teacher.

In Japanese, compound verbs can express a Manner compositionally as discussed in the previous section. The distribution that each language expresses a Manner and a Path is summarized as a following list (39).

(39)

|             | <English>              | <Japanese>               |
|-------------|------------------------|--------------------------|
| a. 'Manner' | a single v (MC*)       | compound verbs (MC)      |
| b. 'Path'   | particle constructions | a single V <sup>19</sup> |

<sup>18</sup> How the idiomatic meaning is accomplished in particle constructions is a rather interesting issue. One of the possibilities is assuming they are actually a sub-type of root compounds  $\sqrt{\text{look}}$  and an aspectual head *up*, then the complex *look up* merges with a category-determining functional head *v*. The idiomatic reading of *look up* is determined by the interpretation of complex *look up* in Encyclopedia. The structure of particle constructions, however, is controversial issue, so I leave it open here (see den Dikken 1995 for the discussion of particle constructions).

<sup>19</sup> The verb which is shown as expressing a Path in (36a) is, in fact, a compound verb which seems to be a combination of *dete-* 'out of' plus *ki* 'come'. However, a simple verb as (i) also expresses a Path, so it may not pose a difficulty for the classification of Verb-framed Languages and Satellite-framed Languages.

- (i) Takuya-wa mise-o de-ta.  
     Takuya-Top the shop go out of- Past.  
     <Figure>   <Ground> <Motion/Path>  
     'Takuya went out of the shop.'

Whether the Manner is expressed in a single verb is determined by a timing of application of MC(\*). Harley (2007) also proposes the crosslinguistic difference of Manner expression is whether a root is inserted directly at *v* or a lower  $\sqrt{P}$  in the comparative study of English and Spanish. Now the question is whether we have a Path Conflation which expresses a Path for a single root in Japanese and particle constructions in English. It would be possible to assume that the single root which expresses a Path is derived by PC\* (PC which applies to *v*), and particle constructions derived by PC(PC which applies to  $\sqrt{P}$ ). If it were right track, we can have a complete explanation for the distribution for the Talmy's Verb-framed languages and Satellite-framed languages. We can reduce the difference of the crosslinguistic distribution to a timing of merger where Manner and Path elements are inserted into the configuration (see Usuki forthcoming).

### Concluding Remarks

In this paper, I argue that syntactically-/lexically- derived compound verbs are uniformly derived in syntax by a single derivational engine Merger. Assuming acategorial roots and a cyclic derivation of compound verbs, we can obtain the simplest explanation for idiosyncratic behaviors of lexically-derived compound verbs. Furthermore, I propose that the timing of the application of MC(\*) causes cross-linguistic difference between English and Japanese. The distinct natures of a category-determining functional head and a root emerges in the result of application of MC(\*) at the distinct timing. When MC\* applies to a category-determining functional *v*, the *v-v* complex created by SC is subject to the Underspecification and its morphophonological feature is provided at the stage of Morphology. On the other hand, in the case of MC which applies to a root, SC provides a symmetrical root-root complex where each root has its own morphophonological feature, which results in a compound verb. The remained mystery is what causes the parametric choice of MC\* or MC. For now, I tentatively assume the keys for the mystery lies on the semantics of a root.<sup>20</sup> This is non-trivial issue to be explored, but it is far beyond the scope of this paper and I leave it for the future work. Finally I hope that the preliminary investigation of Japanese compound verbs in the light of the application of MC(\*) would invoke a further fruitful research in the calm dawn of DM.

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<sup>20</sup> English has productive denominal/de-adjectival verbs, but Japanese does not have any of them. The derivation of denominal/de-adjectival verbs is explored in the framework of I-syntax (Hale and Keyser 1993, 2002). The fact that Japanese lacks denominal/de-adjectival verbs may shed a new light on the parametric application of MC(\*). See Usuki (forthcoming) for the derivation of denominal verbs and its relations to argument structure and the timing of Late Insertion.

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