

# 10 Word Formation

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## 0 Introduction

A long-standing debate in generative grammar concerns the Lexicalist Hypothesis, the strongest form of which demands complete separation of morphology from syntax, thereby disallowing active interactions of word formation and syntactic operations (Di Sciullo and Williams 1987). Such a hypothesis confronts serious challenges from an agglutinative language like Japanese, where one suffix after another is productively added to a verb stem to give rise to more and more complex predicates, as in *tabe-hazime(-ru)* “eat-begin” = “begin to eat,” *tabe-hazime-sase(-ru)* “eat-begin-cause” = “make (someone) begin to eat,” and *tabe-hazime-sase-ta(-i)* “eat-begin-cause-want” = “want to make (someone) begin to eat.” This chapter will review issues in Japanese word formation which directly pertain to the evaluation of the Lexicalist Hypothesis. Included in my discussion are Verb+Verb compounds, Noun+Verbal Noun compounds, and Verbal Noun+*suru* compounds. Space limitations prevent me from looking into other topics of theoretical interest in the realm of lexical morphology, such as N–N compounding (e.g. *inu-goya* “dog-house”), A–N compounding (e.g. *aka-boo* “redcap”), nominalization (e.g. *ame-huri* “rainfall”), lexical prefixation and suffixation (e.g. *sai-kakunin* “re-assure,” *niga-mi* “bitterness”), clipping (e.g. *siritu-daigaku* “private universities” → *si-dai*), and reduplication (e.g. *(biiru-o) nomi-nomi* “while drinking beer”). For the topics that are not included in this chapter as well as the basics of Japanese morphology, the reader is referred to Kageyama (1982), Shibatani (1990: chapter 10), and Tsujimura (1996b: chapter 4).

## 1 Lexicalism and Transformationalism

Unlike European languages which chiefly employ affixation in deriving new predicates, Japanese makes extensive use of compounding to produce a rich variety of complex predicates as exemplified in (1).

- (1) a. Noun-Verb: *tabi-datu* "set out on a journey"  
 b. Verb-Verb: *tobi-dasu* "jump out," *tabe-sugiru* "eat too much"  
 c. Noun-Adjective: *te-atui* "cordial," *sio-karai* "salty"  
 d. Verb-Adjective: *musi-atui* "steaming hot," *yomi-nikui* "hard to read"  
 e. Verbal Noun-*suru*: *kyuukei-suru* "take a rest," *huka-oi-suru* "chase too far"  
 f. Verb-*te* Verb: *tabe-te miru* "try eating," *arat-te oku* "finish washing"

In the history of Japanese generative grammar, the approaches to such complex predicates have been split between transformationalism and lexicalism. On the lexicalist side, Miyagawa (1980, 1989b), Farmer (1984), Miyara (1982), Y. Kitagawa (1986), Grignon (1990), Sells (1995), and others attempt to reduce the formations of all or most of the complex predicates to the lexicon. Works in Lexical-Functional Grammar (LFG: A. Ishikawa 1985, Y. Matsumoto 1996) and Head-driven Phrase Structure Grammar (HPSG: Gunji 1996) are also classified under the broad rubric of lexicalism. The approach that has enjoyed more popularity since the inception of transformational grammar, however, is a syntactic one in which causatives and other grammatical-function-changing suffixes are set up as independent predicates taking syntactic complement structures (Kuroda 1965a, Kuno 1973, Shibatani 1973c, K. Inoue 1976a).

While there are radical lexicalists who extend a lexical treatment to all kinds of complex forms including tense inflections and case particles, there does not seem to be anyone who espouses a purely syntactic approach to word formation. Those who recognize causative *-sase* and desiderative *-ta(i)* "want" as syntactic predicates do not deny that certain kinds of complex words are due to lexical formation. Mixed positions along these lines, which grant the word formation capacity to both lexicon and syntax, have been articulated by Shibatani (1975), Sugioka (1984), Shibatani and Kageyama (1988), and Kageyama (1977, 1982, 1989, 1993).

Since the lexicon is an indispensable component for any theory of grammar, the null hypothesis will hold that the principal locus of word formation is the lexicon. Nonetheless, Japanese presents quite a few phenomena which are hard to explain unless word formation is executed directly on syntactic structure. Before we delve into them, however, it is first necessary to pinpoint the notion "word."

## 2 Lexical Integrity

A hallmark of words is that no part of them can be separated, moved, or deleted by rules of syntax. This universal property, variously referred to as "lexical integrity," "syntactic atomicity," or "lexical island," is illustrated for Japanese by two phenomena.

- (2) *Focus particles cannot intrude into a word.*
- a. \*Watasi-wa [inu-sae-goya]<sub>N</sub>-o kat-ta.  
I-Top [dog-even-house]-Acc buy-Past  
“I bought even a doghouse.”
- b. \*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.”
- (3) *Backward gapping cannot delete part of a word.*
- a. Ken-wa sukiyaki-o ~~tabe~~, Naomi-wa susi-o tabe-ta.  
Ken-Top sukiyaki-Acc eat Naomi-Top sushi-Acc eat-Past  
“Ken ate sukiyaki, and Naomi sushi.”
- b. Ken-wa Furansu-no ~~kuruma-o kai~~, Naomi-wa Itaria-no  
Ken-Top France-Gen car-Acc buy Naomi-Top Italy-Gen  
kuruma-o kat-ta.  
car-Acc buy-Past  
“Ken bought a car made in France, and Naomi, one made in Italy.”
- c. \*Ken-wa [inu-goya]-o ~~tukuri~~, Naomi-wa [usagi-goya]-o  
Ken-Top [dog-house]-Acc make Naomi-Top [rabbit-house]-Acc  
tukut-ta.  
make-Past  
“Ken made a doghouse, and Naomi a rabbit-house.”
- d. \*Ken-wa [nomi-hazime], Naomi-wa [tabe-hazime]-ta.  
Ken-Top [drink-begin] Naomi-Top [eat-begin]-Past  
“Ken began to drink, and Naomi began to eat.”  
(This is grammatical on the reading “Ken drank, and Naomi began to eat.”)

Focus particles like *sae* “even,” *mo* “also,” and *dake* “only,” which have the function of focusing or topicalizing a phrase, cannot be attached to part of a word, in much the same way that *wh*-movement in English cannot affect only a portion of a word (*He likes baseball.* → \**What does he like \_\_\_ball?*). The ungrammaticality of (2a–b) thus shows that *inu-goya* “doghouse” and *tabe-hazime(ru)* “begin to eat” qualify as words.

Another test for lexical integrity is Gapping. As shown in (3), Gapping in Japanese deletes one consecutive string (not necessarily one syntactic constituent) from the end of a clause (Kageyama 1989; *pace* J. D. McCawley and Momoi 1986). Particularly remarkable is the fact that only the head of an NP may be deleted, leaving the genitive modifier stranded (3b). Even so, the deletion cannot encroach on the territory of a compound word (3c–d), as is also the case in English (\**John outran Bill and Mary out-swam Pat.*: Bresnan and Mchombo 1995).

These tests help us grasp the general traits of complex expressions in Japanese: a noun–verb combination without any case particle, as in (2a) and (3c), constitutes a word, and so does a combination of two verbs in the infinitive

(traditionally called the *ren'yoo* form), as in (2b) and (3d). In contrast, complex forms with case particles do not count as words by the criteria at hand. Consider honorific verbs as in (4).

- (4) a. yase-ru (plain) → o-yase-ni                      nar-u (honorific)  
           get thin-Pres            Hon-get thin-Dat become-Pres
- b. Sensei-wa o-yase-ni-sae                      nat-ta.  
    teacher-Top Hon-get thin-Dat-even become-Past  
    “My teacher even got thin.”
- c. Sensei-wa o-yase-ni                      nari,      okusan-wa o-hutori-ni  
    teacher-Top Hon-get thin-Dat become, wife-Top    Hon-get fat-Dat  
    nat-ta.  
    become-Past  
    “My teacher got thin, and his wife got fat.”

(4a) shows the general pattern of honorification, where a verb stem is sandwiched by the honorific prefix *o-* (or *go-*) and the dative particle *ni* and the verb *naru* “become” is supplemented after it. Although the whole *o-V-ni naru* is pronounced with one stretch of accent just like ordinary words and *o-...ni-naru* is sometimes treated as a single morpheme, yet the applicability of Particle insertion (4b) and Gapping (4c) reveals that the sequence actually comprises two phrases: *o-V-ni* and *naru*.

I have taken the trouble to delineate procedures for identifying a word. This is significant because in lexicalist works, we sometimes encounter confusing claims which insist that honorific verbs and other complex expressions which ought to fall into the domain of syntax should be derived by word formation rules in the lexicon (as witnessed in Y. Kitagawa 1986 and Grignon 1990 for honorific verbs, and Sells 1995 for case particles and inflections). Such claims seem to stem from lack of a well-articulated concept of “word.” The fundamental tenet of the theory of lexical phonology is that phonological rules are divided into lexical and postlexical rules, and that the lexical ones apply exclusively in the lexicon. Under this assumption, causatives and other syntactic suffixes are inevitably relegated to the lexicon, because the complex predicates comprising them undergo phonological rules which normally apply word-internally (Miyara 1982, Y. Kitagawa 1986, Clark 1987, Grignon 1990). However, phonological behavior is not a reliable criterion for identifying a morphological word. Since what is crucial to the Lexicalist Hypothesis is the notion of lexical integrity, primary importance should be attached to syntactic clues in deciding whether a given element is a word or not.

We now set out to survey the whole gamut of syntax-related word-formation processes in Japanese. Sections 3 and 4 will respectively deal with compounding in syntax and compounding after syntax. While these two types of compounding create morphological words, section 5 will introduce composite predicate formation which does not involve morphological words.

### 3 Word Formation in Syntax

As an archetypal case of word formation in syntax, this section will take up Verb–Verb compounds, with particular emphasis on their derivations.

#### 3.1 *Lexical and syntactic compound verbs*

Japanese has vast numbers of V–V compound verbs, probably on the order of several thousands. These can be classified into two groups (Kageyama 1989, 1993).

- (5) Type A (lexical compounds): *uti-korosu* “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”

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,” *tasuke-au* “help-join = help each other,” *tabe-sokoneru* “eat-miss = miss eating,” *tabe-sugiru* “eat-pass = overeat,” *ii-wasureru* “say-forget = forget to say,” *tabe-tukusu* “eat-exhaust = eat up”

Having the same composition of “infinitive (V1) + infinitive (V2)”, the two groups of compounds are equally qualified as words (cf. (2b) and (3d)).

The two groups display discrepancies in semantic transparency, productivity, and ordering (Kageyama 1989). Type A compounds tend to have lexicalized or conventionalized meanings while type B compounds are semantically transparent. Type A compounds are by and large limited to lexically specified combinations of V1 and V2, whereas type B compounds basically have no lexical idiosyncrasies on the combinations of two components. Additionally, a strict ordering relation is observed between the two types of compounds: type B appears outside type A, but not vice versa.

These discrepancies are not sufficient to establish one group as lexical and the other as syntactic, because proponents of level-ordered morphology could accommodate them in terms of difference of levels within the lexicon. In fact, Grignon (1990) proposes to locate type A compounding at level I and type B compounding, alongside causative and desiderative suffixations, at level II.

It is also difficult to circumscribe the two groups in terms of meanings. Many of the V2s in type B, such as *-oeru* “finish,” *tuzukeru* “continue,” and



A sharp demarcation is drawn between (a) and (b) in each set. The crux of this observation is that the elements used in the four diagnoses are syntactically motivated: passivization is traditionally treated as syntactic; honorific verbs and the proform *soo su-* “do so” are not words but phrases; VN-*suru* originates from syntactic structure (section 4.2). Naturally, their syntactic character is incompatible with genuine instances of lexically derived words, as shown in (cf.) above. Since type A compounds reject the syntactic elements, they are judged lexical. In contrast, type B compounds, which can accommodate them, call for syntactic derivation.

Akmajian and Kitagawa (1976–7) also noticed contrasts like (7) and (8). However, they postulated a biclausal syntactic structure for both groups, trying to attribute the difference to the feature  $[\pm\text{Aux}]$ . The antithesis of this unitary syntactic account is Grignon’s (1990) unitary lexical analysis mentioned above. Apparently, neither analysis could adequately elucidate the nature of the disparities observed above.

While the preceding discussion has been devoted to V–V compounds, I hasten to add that the same diagnoses serve to distinguish compound adjectives of the form V–A. For example, compound adjectives with desiderative *-ta(i)* (e.g. *iki-tai* “eager to go”), *tough*-adjectives (e.g. *yomi-yasui* “easy to read”), and negative *-nai* (e.g. *tabe-nai* “do not eat”) are syntactic, while *koge-kusai* “burn-smelly = smell burning,” *musi-atui* “steam-hot = sultry,” and other fixed compounds are lexical.

### 3.2 Complementation structures in syntactic compounds

Provided that type B compounds are syntactic, we now ask exactly what structures they are associated with. In the early transformational model, Shibatani (1973c), M. Nakau (1973), K. Inoue (1976a), and Kuno (1983) postulated two kinds of complementation, as in figures 10.1 and 10.2.

The structural distinction is primarily motivated by the selectional restrictions on the main subject. *Oeru* “finish” and other verbs which select volitional agents as their subjects are accorded a transitive structure, whereas *dasu* “begin” and others which are not limited to voluntary actions are construed in the intransitive structure.

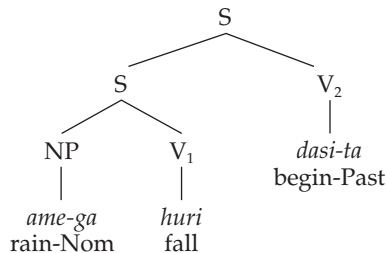


Figure 10.1 Intransitive structure

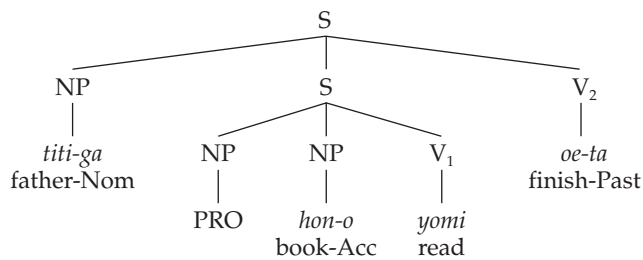


Figure 10.2 Transitive structure

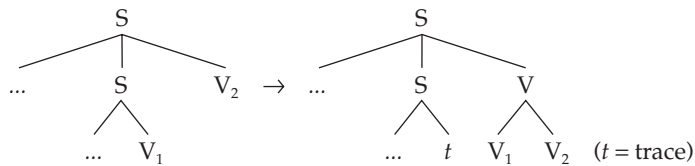


Figure 10.3 Verb Raising

Structures like the above were associated with the rule of Verb Raising, which adjoined the embedded V1 to the main V2 to produce a compound verb, as in figure 10.3.

Later, when clauses were uniformly represented as CP, K. Inoue (1989), in the spirit of M. Baker (1988), hypothesized that head-movement or Incorporation would apply cyclically to raise the complement verb through I and C up to the main verb. Such structures are refuted by Y. Li (1990), who proposes a principle to rule out the incorporation chain of V–I–C–V with functional categories (I, C) intervening between lexical categories (V).

On the basis of the VP-internal subject hypothesis, Nishigauchi (1993) sets up raising (i.e. intransitive) and control (i.e. transitive) structures without I and C, and Kageyama (1993) proposes a further elaboration by dividing transitive structures into two types, one taking a VP complement (figure 10.4) and the other a V' complement (figure 10.5). This leaves us with a total of three types of complement structures instead of the traditional two.

Kageyama's (1993) primary motivation for distinguishing the two structures resides in the passivization of a whole compound verb or what Nishigauchi (1993) calls "long-distance passive."

- (10) a. *VP-complement*: -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: *-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."

The head verbs in (10a) are assumed to select a subject NP and a complement VP. Then, in figure 10.4, passivization in the matrix clause cannot move the embedded object ("dinner") to the matrix subject position because the complement subject PRO would cause a violation of Rizzi's (1991) Relativized Minimality Condition. The head verbs in (10b), on the other hand, select *V'* complements. Since the structure in figure 10.5 lacks PRO in the embedded subject, no violation of the Relativized Minimality Condition ensues.

The VP/*V'* distinction has semantic repercussions. According to Kageyama, the embedded object in *V'* complements is theta-marked not only by the

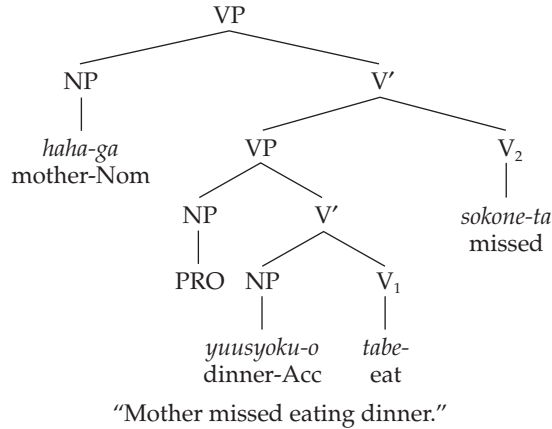


Figure 10.4 Transitive VP complement

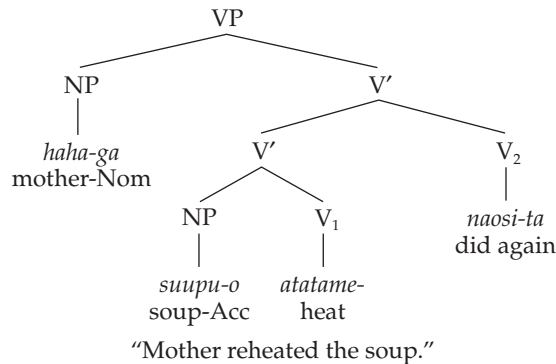


Figure 10.5 Transitive *V'* complement

embedded V but also by the matrix V – double theta-marking which is made possible by M. Baker's (1989) idea that the theta-marking of internal argument is done within the projection of V'. Put in plain terms, the embedded object of V' structure is predicated jointly by V1 and V2. This is manifested clearly in the meaning of passive sentences.

- (11) a. koozan-o hori-tukus-u → koozan-ga hori-tukus-are-ru  
mine-Acc dig-exhaust mine-Nom dig-exhaust-Pass.  
"to deplete the mine"  
b. \*okane-o moti-tukus-u  
money-Acc have-exhaust

The passive in (11a) means that the mine is exhausted as a result of digging it. The double predication explains why sentences like (11b) are illformed: money cannot be exhausted as a result of possessing it.

In contrast, the V2s that select VP complements predicate the whole embedded clause rather than the embedded object alone. For example, *yuusyoku-o tabe-sokoneru* "miss eating dinner" means that the act of eating dinner is not accomplished, without entailing that the dinner itself is spoiled (*sokoneru* "spoil"). In other words, the categorial distinction of VP and V' represents different degrees of semantic affinity between the main verb (V2) and the embedded object. Kageyama further observes that the VP/V' distinction is correlated with variations in honorification: with V'-type compounds, the honorific marker attaches more readily to the entire compound than to V1 alone (*o-kaki-naosi-ni naru* "Hon-write-do again-Dat become" vs. *?o-kaki-ni nari-naosu*), but the reverse is true of VP-type compounds (*?o-kai-kane-ni naru* "Hon-buy-be reluctant-Dat become" vs. *o-kai-ni nari-kaneru*) (cf. Kuno 1983).

Long-distance passives have been studied by other researchers as well. Sugioka (1984) regards the V2s of syntactic compounds as syntactic suffixes that are invariably attached to V', whereas Nishigauchi (1993) puts forth a syntactic analysis based on the assumption that the transitive V2s uniformly select a VP complement. Kageyama's analysis integrates the merits of these predecessors. Those syntactic analyses should be contrasted with Miyagawa's lexical approach. Working under a strong Lexicalist Hypothesis, Miyagawa (1989b) tries to account for long-distance passives by the notions of case-absorption and morphological adjacency: the passive *-rare* absorbs the case feature of the verb it directly attaches to.

- (12) a. (\*hon-ga kodomo-ni) yom -ase -rare (-ta)  
book-Nom children-Dat read Cause Pass. Past  
lit. "The book was made children read."  
from "He made children read the book."  
b. (Tegami-ga) okuri- tuzuke- rare (-ta)  
letters-Nom send continue Pass. Past  
lit. "Letters were continued sending."  
from "He continued sending letters."

In (12a), the passive is debarred from absorbing the case of the main verb (*yom-* “read”) by the intervening causative *-sase*. This, argues Miyagawa, accounts for the ungrammaticality of passivized causative sentences. For aspectual verbs which permit passivization of the embedded object, Miyagawa stipulates that those verbs are “transparent” so that case absorption can ignore their existence. It is not clear why aspectual verbs are transparent; he only suggests that “an aspectual marker does not assign an external thematic role of its own at any time” (1989b: 185). This suggestion is at odds with the fact that the V2s that allow long-distance passives, as in (10b), are transitive verbs taking their own subjects.

Recently Y. Matsumoto (1996) has arrived at a three-way classification which is essentially identical to Kageyama’s. Aside from the verbs of intransitive complementation, two groups of transitive-type verbs are distinguished in Matsumoto’s LFG framework in terms of a(rgument)-structure and f(unctional)-structure. What Matsumoto calls type II verbs, such as *oe-ru* “finish” and *naos-u* “do again,” take Agent and SUBEVENT in a-structure and create a “monoclausal” f-structure, whereas type III verbs, such as *kane-ru* “be reluctant” and *sokone-ru* “miss,” take Agent and EVENT in a-structure and have a “biclausal” f-structure. Y. Matsumoto (1996: 19) characterizes SUBEVENT as being “semantically interwoven with the situation described by the upper, embedding argument structure, so that SUBEVENT and its upper structure together represent one complex event,” as opposed to EVENT, which is “semantically independent of the situation described by the upper structure.” It is not hard to see that these functional characterizations of EVENT and SUBEVENT are tantamount to the semantic effects brought about by Kageyama’s VP and V’ structures, respectively.

An objection Matsumoto raises to Kageyama’s syntactic analysis concerns the interpretation of adjuncts. Y. Matsumoto (1996: 181) points out that in examples like (13), the time adverbial refers unambiguously to the matrix event alone.

- (13) Yuusyoku-wa gozi-to rokuzi-no aida-ni tabe-hazime-rare-ta.  
 supper-Top five-and six-Gen middle-in eat-begin-Pass.-Past  
 “Supper was started between 5 and 6.”  
 \*“The eating of supper between 5 and 6 was begun.”

Since this example involves a passivized compound verb, it corresponds to Kageyama’s V’ structure. That syntactic structure, argues Matsumoto, would wrongly predict that the time adverbial should be ambiguous between the reading in which it is attached to the matrix V’ and the one in which it is attached to the embedded V’. In Matsumoto’s analysis, the time adverbial necessarily designates the matrix event, because V1’s SUBEVENT is subsumed under it.

However, given the parallel relations between VP and EVENT on the one hand, and between V’ and SUBEVENT on the other, it may be said that the

two analyses are notational variants. As mentioned above, the embedded object in Kageyama's V' structure is predicated by V1 and V2, so that the two verbs describe a single event in tandem. Such being the case, it is semantically inappropriate to make only V1 have relations with a time adverbial. Setting aside such semantic problems, the crucial difference between the two authors boils down to the morphological treatment of the syntactic compounds. For Kageyama, they are two separate verbs at D-structure and are amalgamated in syntax; for Matsumoto, the compounds are represented as single verbs in c-structure. For the latter, then, the occurrence of VN-*suru* as V1 in syntactic compounds (9) will pose a new problem.

### 3.3 *Semantic and morphological conditions on lexical compounds*

Unlike syntactic compounds, lexical compounds are formed by mere concatenation of two verbs. Accordingly, previous investigations have been centered on what sorts of restrictions govern the concatenations.

The semantic relations holding between two component verbs have been a popular topic of research, and different authors give different classifications (see Nagashima 1976, Tagashira 1978, Tagashira and Hoff 1986, among others). Y. Matsumoto (1996), for example, distinguishes 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").

Another vexed problem is how the argument structure of an entire compound is determined (Yamamoto 1984, Kageyama 1993, Y. Matsumoto 1996). In the majority of instances, V2 determines the argument structure of an entire compound, in conformity with the Righthand Head Rule (Williams 1981).

- (14) a. Inu-ga doroboo-o/\*ni kan-da.  
 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."

The verb *kamu* "bite" calls for an accusative object (14a), but when it is compounded with *tuku* "stick" (14b), the whole compound takes a dative object, reflecting the dative marking of V2 *tuku*. While Y. Matsumoto (1996) contends that lexical compound verbs are strictly righthanded as regards the percolation of argument structure, Kageyama (1993) gives examples in which V1 and V2 jointly contribute to the creation of a complex argument structure.

Lexical compounding is also constrained by the morphological properties of component verbs. Typically observed are combinations of two intransitive verbs (*ukabi-ageru* “float-rise = float up”) or two transitive verbs (*hiki-ageru* “pull-raise = pull up”), whereas mixtures of a transitive and an intransitive verb are generally unacceptable, as in *\*ukabi-ageru* “float-raise” or *\*hiki-ageru* “pull-rise.” Jacobsen (1992) calls this phenomenon “transitive parity.”

Kageyama (1993) makes refinements to Jacobsen’s transitive parity by formulating the Transitivity Harmony Principle, based on two types of intransitive verbs.

(15) *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: ( $x < >$ )
- (c) unaccusative intransitive verbs:  $< y >$

In the argument structures above,  $x$  represents external argument, and  $y$  internal argument. Since both transitive and unergative verbs have external argument, their argument structures are deemed of the same type, while unaccusative verbs, lacking external argument, are assumed to constitute a separate type. Kageyama argues that the formation of lexical compound verbs is contingent upon the argument-structure types, on the grounds that in addition to the combinations of transitive–transitive and unergative–unergative, mixed combinations of transitives and unergatives are attested while unaccusatives may be compounded only with unaccusatives.

- (16) 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”
- (17) 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-mageru “fold-bend”)
- c. \*unergative V1 + unaccusative V2  
      (me-ga) \*naki-hareru “(eyes) cry-get swollen” (cf. (16b))
- d. \*unaccusative V1 + unergative V2  
      \*koroge-oriru “tumble-step down” (cf. unacc.+unacc.: koroge-otiru “tumble-fall”)

Kageyama conceives of the Transitivity Harmony Principle as a morphological constraint on the formation of lexical V–V compounds, arguing that this compounding takes place at the level of argument structure. He further

points out that this condition is peculiar to Japanese lexical V-V compounding. Thus, combinations of transitive and unaccusative verbs (like \**naguri-taoreru* “strike-fall” or \**osi-aku* “push-open”) are not permitted in Japanese but are attested in Chinese V-V compounds (Y. Li 1993) and Bantu serial verb constructions (M. Baker 1989). Interestingly enough, the resultative constructions in English, such as *to strike a person down* or *to push the door open*, also employ the pattern “transitive verb + (unaccusative) adjective/particle.”

The Transitivity Harmony Principle is not without exceptions. Kageyama himself notes examples whose first members appear to have turned into prefixes because of “semantic bleaching,” or whose second members have almost become suffixes like *-komu* “go in.” Y. Matsumoto (1996), however, questions the general feasibility of the THP by adducing examples like (18).

- (18) 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)

These consist of unaccusatives and transitives, or unaccusatives and unergatives. It seems to me, however, that these counterexamples are only apparent.

Pinker and Prince (1991) explicate the distinction in the productivity of word formation between fully productive, rule-governed morphology like the English regular inflection (*walked, laughed*) and semiproductive analogical morphology like the English irregular tense (*sang, caught*), and Sugioka (1995–6) shows the significance of the rule/analogy distinction in analyzing Japanese N-V compounds. Considerations of this sort should be brought to bear on lexical V-V compounds as well.

Regarding Matsumoto’s counterexamples in (18), I find the compounds in (18a) are not listed in dictionaries. Perhaps some of them are idiosyncratic, not commonly accepted. The examples in (18b), albeit commonly used, are due to back-formation from their transitive counterparts. This is suggested by the fact that the intransitive versions are semantically handicapped in comparison with the transitive counterparts. For example, while the transitive *musubi-tukeru* “tie together” can be applied to both concrete and abstract objects, the intransitive *musubi-tuku* (fasten-be attached) is used only metaphorically: compare the nonliteral *Hutatu-no ziken-ga musubi-tuite-iru* “The two cases are mutually related” with the literal \**Nihon-no roopu-ga musubi-tuite-iru* “Two ropes are tied together.” There are also reverse cases in which transitive verbs (e.g. *mai-ageru* “flutter-raise”) appear to be back-formed from the intransitive counterparts (*mai-agaru* “flutter-rise = soar”).

Note finally that the rule/analogy distinction, which characteristically applies to the word formation whose output is listed in the lexicon, does not come into play with syntactic word formation: all syntactic compounds are formed by rule. This confirms the validity of our distinction between lexical and syntactic compounds.

## 4 Word Formation after Syntax

The kinds of syntactic compounds that we saw in section 3 have the same morphological and phonological shape as lexically derived compounds. The complex predicates to be addressed in this section are markedly different in that they exhibit phrasal rather than compound accents.

### 4.1 Postsyntactic compounds

Japanese has a special syntactic category of Verbal Noun (VN: S. Martin 1975, Kageyama 1976–7, 1982, 1993). Like Nouns, VNs are not inflected in tense, but like verbs they have their own argument structure and are classified into transitives (simple transitives like *benkyoo* “study;” ditransitives like *kihu* “donate”) and intransitives (unergatives like *undoo* “exercise;” unaccusatives like *hassei* “occur”).

Opinions diverge as to the exact nature of VNs. Many researchers, including Miyagawa (1987a), Iida (1987), Grimshaw and Mester (1988), Terada (1990), Tsujimura (1990b), and Sato (1993), regard VNs as no different from Nouns except that they are equipped with argument structure. This is primarily because they are normally combined with *suru* “do” to realize their arguments with Case particles.

There are, however, syntactic contexts in which VNs appear to directly Case mark their argument NPs.

- (19) *kyoozyu-ga Ainu-go-o kenkyuu-tyuu-ni . . .*  
 professor-Nom Ainu-language-Acc research-during-Dat . . .  
 “while the professor was doing research on Ainu”

In (19), the VN *kenkyuu* “research” takes a nominative subject and an accusative object (for the syntax of this construction, see Iida 1987, Saiki 1987, Tsujimura 1992). While Iida (1987) claims that the aspectual feature of the conjunctive morpheme *-tyuu* “in the middle of” enables the VN to execute its Case marking, Kageyama (1993) observes other syntactic environments without an aspectual morpheme.

- (20) a. [*sanka-o go-kiboo*] *no kata-wa . . .*  
 [participate-Acc Hon-wish] Gen person-Top  
 “Those who wish to participate . . .”  
 b. *Suiyoobi-made-ni [repooto-o teisyutu] no koto.*  
 Wednesday-by-Dat [report-Acc submit] Gen thing  
 “Submit your term paper by Wednesday.”

In view of these and other examples, Kageyama (1993) concludes that in those specific constructions, VNs can Case mark their arguments without the aid of

*suru*. N. Hasegawa (1991b) and Manning (1993) also analyze VNs as functioning either as Ns or as Vs. An alternative will be to postulate a zero verb corresponding to *suru*, as Sato (1993) does.

We now observe that an interesting thing happens in these constructions.

- (21) a. *Incorporation of direct object*  
 Sooseki-ga Rondon-o hoomon no ori . . .  
 Soseki-Nom London-Acc visit Gen occasion  
 "when Soseki visited London"  
 → Sooseki-ga [Rondon:hoomon]<sub>VN</sub> no ori . . .  
 Soseki-Nom [London:visit] Gen occasion
- b. *Incorporation of intransitive (unaccusative) subject*  
 Zisin-ga hassei no sai wa . . .  
 earthquake-Nom occur Gen occasion Top  
 "in case an earthquake occurs"  
 → [dai-zisin:hassei]<sub>VN</sub> no sai wa . . .  
 [earthquake:occur] Gen occasion Top

Shibatani and Kageyama (1988) discovered that in these adverbial constructions, the predicate VN may incorporate its internal argument to form a compound word (given in the brackets). In (21a), for example, the direct object is adjoined to the VN to yield a compound predicate [*Rondon:hoomon*] "London visit." This type of compound is characterized by the phonological property that the two components (N and VN) are separated by a slight pause (indicated by the colon (:)) and retain their respective lexical accents rather than being unified into one accent. Because of this, Shibatani and Kageyama called this type of compound "postsyntactic compounds."

Shibatani and Kageyama carefully demonstrate that such expressions are not results of mere particle ellipsis but make up genuine words, and that they are constructed from syntactic structure. Like Noun Incorporation in other languages (M. Baker 1988), postsyntactic compounding applies only to NPs which are structurally governed by the predicate, and not to inherently Case-marked PPs such as NP-*kara* "from NP" or NP-*de* "with NP." The syntactic nature is further shown by the fact that the head VN can have an honorific prefix *go-*, as in [*Yooroppa:go-ryokoo*] *no ori* "when traveling in Europe," which is impossible with the lexical counterpart, \**yoOROPPA-GO-RYOkoo* "a European tour." Naturally, the same compounding is applicable to the bracketed parts in the nontime adverbial clauses in (20) above. (But see Sato (1993) for a different analysis of these compounds.)

Subsequently, Kageyama and Shibatani (1989), Kageyama (1989, 1993), and Yumoto (1990) uncovered evidence that this compound formation has a wider range of application, extending to noun phrase structures and to "Adjectival Nouns [AN]" (S. Martin 1975, Kageyama 1982, Miyagawa 1987a). For lack of space, I show only examples involving unaccusative subjects.



(22) *Postsyntactic compounding with VN in Noun Phrase*

Nihon-niokeru zisin-no hassei  
 Japan-in earthquake-Gen occurrence  
 “the occurrence of earthquakes in Japan”  
 → Nihon-niokeru [zisin:hassei]<sub>VN</sub>  
 Japan-in [earthquake:occurrence]

(23) *Postsyntactic compounding with AN*

singi-ga huzyuubun ni tuki . . .  
 discussion-Nom insufficient Dat because  
 “because the discussion is insufficient”  
 → [singi:huzyuubun]<sub>AN</sub> ni tuki  
 [discussion:insufficient] Dat because

In the light of the phonological peculiarity, Spencer (1991: 454) suggests that postsyntactic compounds might be regarded as “phonological words.” However, I should like to maintain the view that they are *bona fide* morphological words. The wordhood is demonstrated by the inapplicability of Gapping, as in (24a). This should be contrasted with the grammaticality of (24b), where only the Case particle is gapped in a phonological word of noun–particle sequence.

- (24) a. \*Tookyoo-de [oo-zisin: ~~hassei~~], Yokohama-de [oo-kazi: hassei]  
 Tokyo-in [big earthquake occur] Yokohama-in [big fire: occur]  
 no nyuusu  
 Gen news  
 “the news that a big earthquake occurred in Tokyo and a big fire  
 broke out in Yokohama”
- b. Kyoo-wa [Ken-ga]—yasumi, asita-wa  
 today-Top Ken-Nom have a day off, tomorrow-Top  
 [Naomi-ga] yasumu.  
 Naomi-Nom have a day off  
 “Today Ken takes a day off, and tomorrow, Naomi.”

In the next two subsections, we will see that the phrasal accent is not unique to the postsyntactic compounds.

## 4.2 VN-suru compounds

In the postsyntactic compounding introduced above, VNs incorporate their internal argument. Because of their dual character as predicates and nouns, VNs can themselves be targets of incorporation into a predicate, yielding compounds like *undoo-suru* “exercise-do” and *zyoohatu-suru* “evaporate-do.” The incorporating hosts in this case are limited to the verb *suru* “do” and its suppletions like the potential *dekiru* “can do” and the honorific *nasaru* (Kageyama 1976–7).

- (25) undoo-o suru → undoo-suru  
 exercise-Acc do exercise-do “take exercise”  
 undoo-ga dekiru → undoo-dekiru  
 exercise-Nom can do exercise-can do “can take exercise”

In the literature, there are two competing views on the derivation of such VN-*suru* compounds. The lexical approach (K. Inoue 1976a, Miyagawa 1987a, 1989a, Grimshaw and Mester 1988) holds that *suru*, as a verbalizer, is attached to VNs in the lexicon, whereas the syntactic approach (Kageyama 1976–7, 1982, 1993, Tsujimura 1990b, Terada 1990, Sato 1993, Dubinsky 1994) maintains that VN and *suru* are generated as separate constituents and get amalgamated in syntactic structure (although the exact syntactic structures from which incorporation takes place differ from author to author). Needless to say, these two analyses are grounded on the premise that VN-*suru* makes up a compound word. However, Poser (1989, 1992) and Y. Matsumoto (1996) challenge this premise, claiming that the sequence VN-*suru* is a periphrastic expression rather than a word. Before contesting the lexical and syntactic analyses, it is therefore urgent that we clarify the morphological status of VN-*suru*.

The by-now familiar tests yield apparently contradictory results. First, focus particles may be interpolated between VNs and *suru*.

- (26) a. sanpo-sae suru            b. bidoo-dani si-nai  
 walk-even do                    budge-even do-not

There are many other syntactic contexts in which the lexical integrity of VN-*suru* is lost (Poser 1989, Kageyama 1993: 259, Y. Matsumoto 1996: 40).

- (27) a. seihu-an-ni                    sansei mo            hantai mo            si-nai  
 government-plan-Dat approve-also disapprove-also do-not  
 “neither approve nor disapprove the governmental plan”  
 b. seikoo-site-mo si-nakute-mo  
 seikoo-do-also do-not-also  
 “no matter whether you succeed or not”  
 c. – Ronbun-o teisyutu-si-masi-ta    ka?  
     paper-Acc submit-do-Polite-Past Q  
     “Did you submit your paper yet?”  
     – Hai, si-masi-ta.  
     yes do-Polite-Past  
     “Yes, I did.”

In (27a), the coordinated parts are obviously phrases since they contain the particle *mo*. In (27b), while the first conjunct involves VN-*suru*, the second one has only *suru* without a VN. If *seikoo-suru* “succeed-do” were to count as a single word, it would have to be assumed that the VN in the second conjunct was deleted, destroying the lexical integrity. The dialog in (27c) presents a

similar pattern in which the second person responds only with *suru*. It is important to note that since the Japanese *suru* does not function as an auxiliary verb like the English *do*, the *suru* in the answer of (27c) directly corresponds to the *suru* of *teisyutu-suru* in the question.

The detachability of *suru* and VNs as exemplified above leads Poser (1989, 1992) and Y. Matsumoto (1996: 40) to deny the morphological wordhood of *suru* compounds. They are right as far as examples like (26) and (27) are concerned: VNs and *suru* are discrete constituents in those particular constructions. However, this by no means entails that the simple juxtaposed form (VN-*suru*) is also a phrase. On the contrary, there is evidence that VN-*suru* without any element inside truly makes up a word. Observe how Gapping works (Kageyama 1993).

- (28) a. \*Tuma-wa daietto-si, otto-wa kin'en-si-ta.  
 wife-Top diet-~~do~~, husband-Top quit smoking-do-Past  
 "The wife went on a diet, and the husband quit smoking."  
 b. Tuma-wa daietto-sae si, otto-wa kin'en-sae si-ta.  
 wife-Top diet-even ~~do~~, husband-Top quit smoking-even do-Past  
 "The wife even went on a diet, and the husband even quit smoking."

As shown by (28a), it is not possible to delete only the *suru* part, leaving behind the VN *daietto* "diet." Here we disagree with Poser (1989, 1992), who regards similar examples to (28a) as grammatical. In our view, (28a) cannot be interpreted as resulting from Gapping of *suru*; if it is accepted at all, its first clause ("The wife went on a diet") will have to be construed as an incomplete tenseless clause like a newspaper headline. This point is confirmed by comparing (28a) with (28b). Gapping of *suru* applies perfectly in this latter sentence, where VN and *suru* are presented as separate constituents. The contrast in (28a-b) will be sufficient to argue against the view of Poser and Matsumoto. Although the VNs and *suru* separated by particles or other syntactic material are phrases, the combined form of VN-*suru* definitely constitutes a morphological word. When VN and *suru* are separated by syntactic material, the VN can stand by itself – technically, Case particles and focus particles (which Sato 1993 assumes to assign oblique case) enable the VN to eschew the Case filter. Without such syntactic support, the VN must lean on the verb *suru* for incorporation.

So far we have seen that VN-*suru* compounds originate from a phrase like VN-*o suru*. The data given above also argue for the syntactic derivation of *suru* compounds. Consider again the examples in (27) where *suru* stands alone in the second conjunct of a clause or the answer part of a discourse. Were the whole VN-*suru* derived in the lexicon, as claimed by Miyagawa (1987a), it would be extremely difficult to explain such cases, because only the VN portion of the compound word would have to be deleted in outright violation of the lexical integrity. In the syntactic analysis (Kageyama 1993), these examples do not involve deletion of VN but have pro in lieu of a lexical VN.

**Table 10.1** Syntactic V–V compounds and VN-*suru* compounds

Differences in:	Syntactic V–V compounds	VN- <i>suru</i> compounds
Nominalization	OK ( <i>ne-sugi</i> “sleep excessively”)	*( <i>suimin-si</i> “sleep-doing”)
- <i>kata</i> suffixation	OK ( <i>kaki-hazime-kata</i> “the way one begins to write”)	?*( <i>undoo-si-kata</i> “the way one takes exercise”)
Reduplication	*( <i>tasuke-ai-ai</i> “help-Recipr”)	OK ( <i>undoo-sii-sii</i> “taking exercise repeatedly”)

Since this pro is generated as a separate constituent from *suru* (in a non-incorporated structure), no infringement of lexical integrity results.

Provided that VN-*suru* compounds are syntactic, the question we must now ponder is whether they are syntactic in the same way as syntactic V–V compounds are. In point of fact, the two groups of complex predicates exhibit substantial differences with respect to nominalization (Y. Matsumoto 1996), suffixation of *-kata* “the way” (Kageyama 1993, Y. Matsumoto 1996), and verb reduplication (Kageyama 1976–7), as summarized in table 10.1.

Syntactic V–V compounds, like lexical compounds, are readily amenable to nominalization and *-kata* suffixation, while VN-*suru* compounds resist them. On the other hand, reduplication can apply only to the *suru* portion of VN-*suru*, but never to the V2s of syntactic as well as lexical V–V compounds. In addition, as Poser (1989) observes, *suru* compounds have a phrasal accent. These discrepancies indicate that syntactic V–V compounds make up morphologically “tighter” units than VN-*suru*.

The phrase-like character of VN-*suru* compounds will be most reasonably attributed to their formation at the postsyntactic level (s-structure) (Kageyama 1993). The unavailability of nominalization and *-kata* suffixation with VN-*suru* is then accounted for by saying that these rules operate at the levels prior to s-structure (namely, in the lexicon and syntactic cycle: cf. Sugioka 1984, 1992). The state of affairs involving the word-formation processes discussed so far will be schematically represented as in figure 10.6.

In the model sketched in figure 10.6, word-formation rules apply at three different levels of grammar: the lexical component, the syntactic component, and s-structure (i.e. postsyntax). Some rules apply exclusively at a specific level, while others may be spread over different levels. In particular, nominalization and *-kata* suffixation straddle the boundary of the lexical and syntactic components, while verb reduplication as well as VN-*suru* and postsyntactic compounding is situated at the postsyntactic level (this rule is inapplicable to N–VN postsyntactic compounds, since it calls for the V category). The word formation processes at the three levels are globally constrained by an independent module of Morphology Theory which identifies their outputs as morphological words. Kageyama (1993) calls this model of grammar “Modular

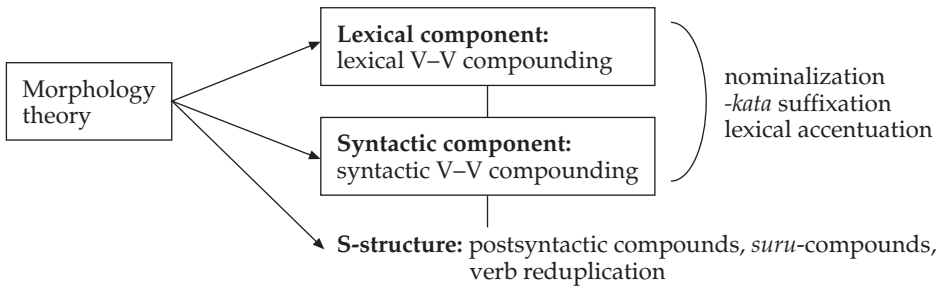


Figure 10.6 Modular Morphology

Morphology.” Since Gapping, a rule in the phonological component, applies after all these complex predicate formations are completed, it serves as the infallible test for morphological integrity.

Now the place of the lexical accentuation rule in figure 10.6 deserves special attention. As mentioned earlier, the distinction of lexical and postlexical rules in the framework of lexical phonology is said to mirror the distinction of the lexical and the syntactic component. We have seen, however, that compound words derived from syntactic structure exhibit the same phonological behavior as lexically derived words. A reasonable way to maintain the division of syntax and lexicon while at the same time incorporating the insight of lexical phonology will be to expand the domain of lexical phonology from the lexicon to the syntactic component, as schematized above. What lexical phonologists call “lexical accentuation” now covers word formation in both lexical and syntactic components, and what they call “postlexical phonology” will designate the postsyntactic (s-structure) level.

### 4.3 *V-te compounds*

Complex predicates involving the gerund (*-te*) form of verbs, such as *V-te morau* “receive the favor of doing,” *V-te hosii* “want (someone) to do,” *V-te oku* “finish doing, leave done,” and *V-te miru* “try doing,” are always a nuisance in Japanese grammar. Observe the conflicting results of the two tests.

- (29) a. Sono husigi-na buttai-o, Ken-wa ket-te-sae mi-ta.  
 that strange object-Acc Ken-Top kick-Te-even try-Past  
 “Ken even tried kicking the strange object.”
- b. \*Sono husigi-na buttai-o, Naomi-wa [tatai-te mi], Ken-wa  
 that strange object-Acc Naomi-Top hit-Te try, Ken-Top  
 [ket-te mi-ta].  
 kick-Te try-Past  
 “Naomi hit and Ken kicked the strange object.”

On the one hand, the detachability of the *V-te* portion as in (29a) has forced Sugioka (1984), Ishikawa (1985), Y. Matsumoto (1996), and others to deny the wordhood of *V-te* forms; on the other hand, the inapplicability of Gapping (29b) and other phenomena have led M. Nakau (1973), Kuno (1973), Shibatani (1978), Miyagawa (1989b), and others to identify them as complex predicates. Faced with the conflicting sets of data, J. D. McCawley and Momoi (1986) proposed a special syntactic representation in which *V-te* is dominated simultaneously by the embedded clause and by the matrix verb.

It is evident that *V-te* complexes have the same amphibious nature as *VN-suru* compounds: they originate from phrases and end up with words at the postsyntactic level. This accounts for why *V-te* complexes are pronounced with a phrasal accent just like *VN-suru* compounds. Furthermore, like *VN-suru* compounds, they show resistance to nominalization and *-kata* suffixation.

- (30) a. \*tabe-te mi  
eat-Te trying  
b. ?\*ronbun-no [kaite-mi-kata]  
paper-Acc [write-try-way]

This suggests that the formation of *V-te* complex predicates takes place at the same postsyntactic level as *VN-suru* compounding (Kageyama 1993). In fact, verb reduplication seems applicable to *V-te miru*, as in *tabete mii-mii* “try eating little by little.”

## 5 Nonmorphological Word Formation in Syntax

We have hitherto reviewed word-formation processes applying at three levels: in the lexicon, in syntax, and after syntax. Regardless of the difference in levels, all the complex predicates created by these rules share the fundamental property of being morphological words. However, there are phenomena where composite expressions which are not morphologically identified as words exhibit the same syntactic behavior as words.

### 5.1 *Light verb constructions with suru*

Let us start with the analysis of the “light verb constructions” with VNs and *suru* proposed by Grimshaw and Mester (1988) (henceforth G&M). The crucial data will be summarized in (31).

- (31) a. John-wa murabito-ni [[ookami-ga kuru-to]-no  
John-Top villager-to wolf-Nom come-Comp-Gen  
keikoku]-o sita.  
warn-Acc did  
“John gave the villagers a warning that the wolf was coming.”

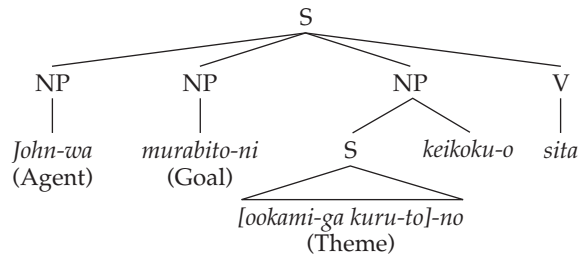


Figure 10.7 Partial argument transfer

- b. John-wa murabito-ni [ookami-ga kuru-to] keikoku-o sita.  
 John-Top villager-to [wolf-Nom come-Comp] warn-Acc did  
 "John warned the villagers that the wolf was coming."

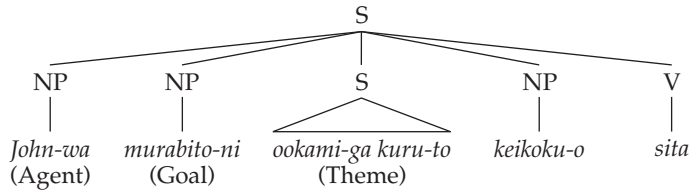


Figure 10.8 Total argument transfer

- c. John-wa murabito-ni [ookami-ga kuru-to] [keikoku-sita]<sub>v</sub>.  
 John-Top villager-to [wolf-Nom come-Comp] warn-did  
 "John warned the villagers that the wolf was coming."

What interests us is that the argument relations of the whole sentences are determined by the VN *keikoku* "warning," rather than the main verb *suru* "do." In particular, the content clause "that the wolf was coming" and the indirect object "villagers" are associated with the ditransitive VN "warning," as is clear from the fact that (31a) and (31b) become unacceptable if the VN is deleted (Sato 1993).

- (32) \*John-wa murabito-ni ookami-ga kuru-to(-no) sita.  
 John-Top villagers-Dat wolf-Nom come-Comp-Gen did

It appears that the *suru* in such sentences serves no purposes other than just carrying the tense inflection. For this reason, G&M call this *suru* "a light verb."

G&M postulated that the light verb *suru* has an accusative case but is devoid of argument structure as shown in (33a), while the VN *keikoku* has an argument structure like (33b).

- (33) a. light *suru*:  
 argument structure ( ) case feature <acc>  
 b. *keikoku* “warn”:  
 argument structure (Agent (Goal (Theme)))

Two points should be noted. First, *suru* is held responsible for marking the VN (*keikoku*) with the accusative *-o*. Second, the empty argument structure of *suru* serves as a relay point for transferring the undischarged theta-roles of the VN to the argument NPs in the main clause. Thus in (31a), while the Theme role (i.e. content clause) is satisfied within the NP headed by the VN, the other roles (Agent and Goal) are transferred via the empty argument structure of *suru* to the subject “John” and the indirect object “villagers.” This may be called partial argument transfer (Sato 1993). (31b), on the other hand, illustrates a case of total argument transfer, where all of the arguments of *keikoku* appear to be licensed in the main clause. Whether the argument transfer is partial or total, it appears that *suru* works in conjunction with the VN in determining the argument relations of a whole sentence. Although the VN and *suru* in these examples do not make up a morphological word because the VN bears the accusative marker, yet they together function as a composite predicate of the sentences. Of course, precisely the same theta-relations are observed with the incorporated VN-*suru* (31c).

G&M’s analysis was immediately subjected to critical examinations and modifications by various researchers. Two major issues can be sorted out: (i) accusative case on VN and (ii) argument transfer. As to the first issue, while G&M stipulate that *suru* automatically assigns accusative case to the preceding VN, Miyagawa (1989a), Dubinsky (1989), Tsujimura (1990b), and Kageyama (1991) discovered, totally independently of each other, that there is a significant correlation between the transitivity-type of a VN and the availability of accusative marking on it: transitive and unergative VNs can be marked in the accusative but unaccusative VNs cannot.

- (34) a. transitive VN: *kenkyuu-o suru* “do research”  
 b. unergative VN: *undoo-o suru* “do exercise”  
 c. unaccusative VN: *\*sikyo-o suru* “pass away”

The unavailability of accusative marking on unaccusative VNs is attributed to Burzio’s generalization, which essentially says that predicates which take external argument can assign accusative case to the object NP. Given the argument transfer account, the main verb *suru* can implement accusative marking only if the VN from which it inherits argument structure is transitive or unergative. On this view, the accusative case on VNs in the light verb construction directly reflects the transitivity property of the VNs themselves.

There are researchers who try to account for the accusative marking of VNs without resorting to Burzio’s generalization (Terada 1990, Ahn 1990, Isoda 1991, Uchida and Nakayama 1993). According to them, the instance of *suru* which



accompanies the accusative-marked VN is not a light verb but merely an ordinary, “heavy” verb meaning “do;” in other words, argument transfer takes place only when VN is morphologically combined with *suru* as in (31c). This analysis misses the fact that argument transfer does occur when VN and *suru* are clearly separated by focus particles (Sells 1989, Sato 1993, Kageyama 1993, Y. Matsumoto 1996, Dubinsky 1994).

- (35) a. Inseki-ga Taiheiyoo-ni rakka-wa si-ta ga ...  
 meteorite-Nom Pacific-ocean-Dat fall-Top do-Past but ...  
 “A meteorite fell in the Pacific ocean, but ...”  
 b. Keisatu-wa yoogisya-o taiho-wa si-ta ga ...  
 police-Top suspect-Acc arrest-Top do-Past but ...  
 “The police arrested the suspect, but ...”

Note that *rakka* “fall” in (35a) is an unaccusative VN, so that it would have to be incorporated into *suru* unless accompanied by a focus particle; *taiho* “arrest” in (35b), though transitive and hence compatible with accusative marking, cannot take agentive modifier (*\*yoogisya-no taiho-o suru* lit. “make an arrest of the suspect”) because of certain aspectual conditions on “genitive + VN” phrases (see Tanomura 1988, Kageyama 1991, 1993, Uchida and Nakayama 1993, Dubinsky 1994).

Examples like (35) present unequivocal evidence that argument transfer occurs even when VNs are morphologically distinct from the main verb *suru*. Whether or not VNs are marked in the accusative is a separate matter from the issue of argument transfer. Although linguists normally avoid double accusative marking on VN and theme NP in examples like (35b), Kageyama (1991, 1993) attests actual examples from spontaneous speech which carry accusative markers on both VN and object NP (36a).

- (36) a. Kabu-o zyooto-sita gawa-wa, nanraka-no mikaeri-o  
 stocks-Acc sell-did side-Top some-Gen recompense-Acc  
 kitai-o site, ... (TV news)  
 expect-Acc do  
 “The man who sold the stocks expected some recompense or other”  
 b. Zyookyaku-no uti, 19-nin-ga kyuuzyo-o  
 passengers-Gen among 19-people-Nom rescue-Acc  
 s-are-masi-ta. (TV news)  
 do-Pass.-Polite-Past  
 “Of the passengers, nineteen were rescued.”

Even more illuminating are passive sentences like (36b) in which the Theme NP is subjectivized with the accusative-marked VN left behind. Of course the same result obtains if a focus particle is added to the VN-*o*, as in *19-nin-ga kyuuzyo-wa s-are-ta*.

While Uchida and Nakayama (1993) assume that only CP can be floated away from NP in non-passive sentences (as in (31b) above), the fact is that

ordinary NP objects can also be dissociated from the NP of which the VN is the head, as in (35b) and (36). And when the arguments are embodied outside the VN phrase, an unexpected phenomenon is observed: the VN in such syntactic environments is rendered “syntactically inert.” By this I mean the VN resists all sorts of syntactic operations: scrambling (37a), passivization (37b), replacement by *pro* or a pronoun (37c), and modification (37d) (see Sells 1989, Dubinsky 1990, Kageyama 1991, 1993, Sato 1993).

- (37) a. \**Taiho-wa<sub>i</sub> keisatu-ga yoogisya-o t<sub>i</sub> si-ta.*  
 arrest-Top police-Nom suspect-Acc do-Past  
 lit. “As for the arrest, the police did of the suspect.”
- b. \**Taiho-ga<sub>i</sub> keisatu-niyotte yoogisya-o t<sub>i</sub> s-are-ta.*  
 arrest-Nom police-by suspect-Acc do-Pass.-Past  
 lit. “The arrest was done the suspect by the police.”
- c. \**Keisatu-ga yoogisya-o sore-o/pro si-ta.*  
 police-Nom suspect-Acc it-Acc/pro do-Past  
 lit. “The police did it of the suspect.”
- d. \**Keisatu-ga yoogisya-o kinkyuu-no taiho-o/wa si-ta.*  
 police-Nom suspect-Acc on-the-spot-Gen arrest-Acc/Top do-Past  
 lit. “The police did an on-the-spot arrest of the suspect.”

These effects are reminiscent of the lexical integrity of morphological words. In other words, *VN-o/wa suru*, albeit formally a phrase, is nonetheless endowed with the same quality as a morphological word. We will call such an expression “a composite predicate.”

Researchers have been seeking possible ways to capture, as it were, the “non-morphological” wordhood of the composite predicate *VN-o suru*. Figures 10.9 and 10.10 show two of them (where we ignore tense inflection).

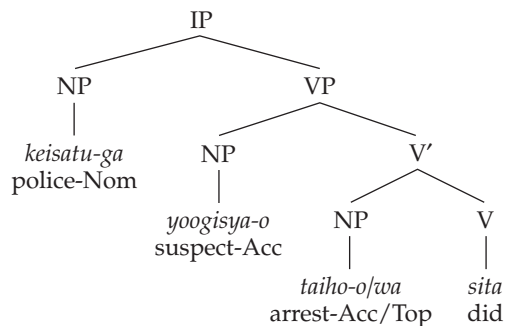


Figure 10.9 Complex *V'* predicate

In figure 10.9, Sato (1993) postulates that VN and *suru* form a complex predicate *V'*. In figure 10.10, Kageyama (1991, 1993) adopts M. Baker’s (1988) idea of Abstract Incorporation (something like “reanalysis”), arguing that VN and *suru* are functionally, though not morphologically, identified as a word

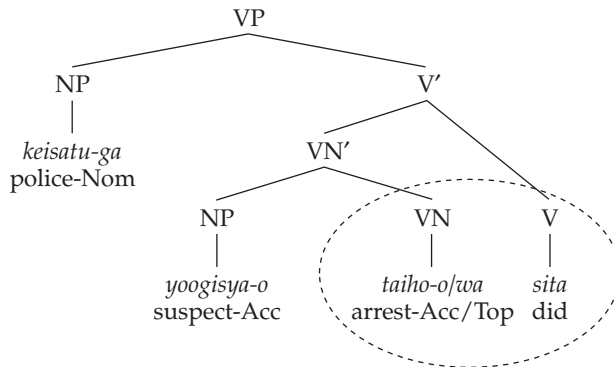


Figure 10.10 Abstract Incorporation

(represented by the dotted circle). Alternative approaches are proposed by Dubinsky in *Relational Grammar* (1990) and in the *Minimalist Program* (1994).

## 5.2 Light verb constructions with other verbs

Y. Matsumoto (1996) makes an interesting observation that *suru* is not alone in exhibiting the “argument transfer” effects. According to him, *hazimeru* “begin,” *kokoromiru* “attempt,” *tsuzukeru* “continue,” *kurikaesu* “repeat,” and others also behave as light verbs in that they allow arguments of a VN to show up in the matrix clause.

- (38) Karera-wa Tookyoo-e bussi-no yusoo-o hazime-ta/kokoromi-ta.  
 they-Top Tokyo-to goods-Gen transport-Acc begin/attempt-Past  
 “They began/attempted to transport the goods to Tokyo.”

Matsumoto further points out syntactic parallelisms of these constructions with syntactic complementation structures with *-te morau* “receive the favor of -ing.” We can extend Matsumoto’s observation a step further to the complementation structures involving syntactic V–V compounds. (Matsumoto does not make this extension because for him, light verb constructions and *-te morau* constructions have syntactically complex structures, while the syntactic V–V compounds are represented as single verbs in the syntactic c-structure.) This will reveal a striking uniformity across different types of complex and composite predicates, as shown in the general schema in figure 10.11.

In figure 10.11, Pred1 represents V1 in syntactic V–V compounds, V–*te* in *-te* complex predicates, and VN in light verb constructions; and Pred2 designates V2 in syntactic V–V compounds, *morau* and other verbs in *-te* complex predicates, and *suru* and other light verbs in light verb constructions.

Given this common structure, the differences between particular constructions are reduced to how the complement and matrix predicate are made into complex or composite words. The differences may be tabulated as in table 10.2.

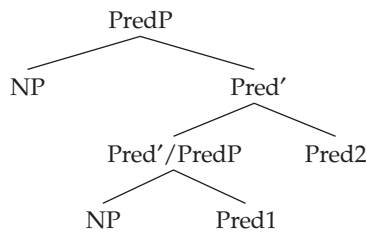


Figure 10.11 General schema of complex and composite predicates

Table 10.2 Predicate and word-formation types

<i>Construction</i>	<i>Types of predicate</i>	<i>Types of word formation</i>
a	Syntactic V–V compounds	Incorporation in syntax
b	<i>-te</i> complex predicates	Incorporation at postsyntax
c	VN– <i>suru</i> compounds	Incorporation at postsyntax
d	VN– <i>o suru</i> construction	Abstract Incorporation in syntax
e	VN– <i>o hazimeru</i> as in (38)	(No word formation)

The first three rows (a, b, c) in table 10.2 involve morphological words, and the fourth (d), a composite predicate. In contrast, the last group (e) undergoes neither morphological compounding nor Abstract Incorporation, because the VN remains syntactically active (39a) and the Theme object rejects accusative marking (39b).

- (39) a. John-ga sono supai-to kokoromi-ta no-wa sessyoku-da.  
 John-Nom the spy-with attempt-Past Comp-Top contact-Copula  
 lit. “What John attempted with the spy was contact.”
- b. \*Karera-wa Tookyoo-e bussi-o yusoo-sae  
 they-Top Tokyo-to goods-Acc transport-even  
 hazime-ta/kokoromi-ta.  
 begin/attempt-Past  
 “They even began/attempted to transport the goods to Tokyo.”

It is not clear how this last type of light verb construction can be accounted for.

## 6 Conclusion

This chapter has reviewed several different types of complex and composite predicates which are motivated by syntactic structure. The existence of these syntactically derived words indicates that the strong form of the Lexicalist

Hypothesis is not appropriate for Japanese. Any theory of word formation and morphology must account for the differences and similarities among the varied types of complex and composite predicates in a systematic way. Our discussion in this chapter has been based on a rather traditional view of syntax, where the lexicon and syntax have a balanced division of labor. It remains to be seen how the data that have motivated the distinction between lexical and syntactic word formation can be explicated in a more revealing way in the Minimalist framework or other grammatical models which recognize only one level of syntactic structure. Whatever theory one may adopt, Japanese will surely present challenging problems.

Another fruitful area for future research is the semantics of compound and complex predicates. While lexical semantics tends to be concentrated on lexicalized words, extensive research will be necessary not only in lexical words but also in syntactically derived words, as is hinted at by our discussion on V'-type compounds in section 3.3. Furthermore, while this chapter has been devoted to compounding, semantic effects caused by prefixes and suffixes will pose even more intriguing problems (see Kageyama 1996 for concrete examples).

All those problems emerge from the complex nature of "words." Words constitute the interfaces of syntax, semantics, and phonology (Jackendoff 1997). Because of the multifaceted nature of words, research in word formation should itself be multifarious, and that is why this area is formidably difficult to manage and at the same time endlessly fascinating.