



## ČLANCI – ARTICLES – ARTIKEL

UDC 811.521'367.625=111

Original scientific article

Received on 28. 01. 2017

Accepted for publication on 29. 04. 2017

**Kazuhiko Fukushima**

Kansai Gaidai University

Hirakata, Osaka

### **Negation as an empirical/conceptual tool: A case study with V-V compounds**

This case study with Japanese lexical V-V compounds reveals descriptive and conceptual utility of negation. The compounds are a very popular and controversial target of research where headedness plays a significant role. However, so far, NO independent empirical criterion exists for headedness. It is pointed out that negation turns out to be such a criterion. In addition, negation is interesting theoretically in that it guides us to favor lexical approaches over syntactic ones. Negation offers independent criteria empirically and conceptually, which eventually enable more solid testing and construction of predictions and hypotheses.

**Key words:** lexical compounds; headedness; negation; Japanese.

#### **1. Introduction: Lexical V-V compounds**

This paper points out the empirical and conceptual/theoretical utility of negation focusing on lexical V-V compounds in Japanese. The emphasis of the paper is on a methodological aspect rather than an analytical one. According to Aikhenvald (2006) and Haspelmath (2016), these compounds constitute a sub-type of more general ‘serial verb constructions’ (SVCs). Though not very common in European languages (cf. limited English examples like *crash land*, *kick start*, *sleep walk*, and *stir fry* listed by Aikhenvald), they are widely observed in the languages of West Africa, East Asia, Amazonia, Oceania, New Guinea, and Creole languages. Gener-



ally, a SVC “is a monoclausal construction of multiple independent verbs with no element linking them and with no predicate-argument relation between the verbs” (Haspelmath 2016: 296). Aikhenvald states that SVCs divide into two types, namely, one-word vs. multi-word constructions, based on whether component verbs form an independent grammatical word or not. Lexical V-V compounds in Japanese belong to the former type.

Lexical V-V compounds in Japanese are a very popular but controversial target of research in the domain of Japanese linguistics (Kageyama 1993/2009; Matsumoto 1996; Nishiyama 1998/2008; Himeno 1999; Fukushima 2005/2008; Yumoto 2005, just to mention major ones).<sup>1</sup> Among the controversies we find the matter of ARGUMENT SYNTHESIS (or argument matching) where the separate argument structures of the component verbs are synthesized into a single argument structure of the whole compound. (Other controversial issues are introduced below.) For example, the subject arguments of  $V_1$  *odori* and  $V_2$  *tukare* are matched in (1a). Or subject-to-subject and object-to-object matching are observed in (1e), respectively. [N.B.: The headedness characterization in (1) reflects what has generally been observed and assumed in the literature of lexical V-V compounds.]

(1) Right-headed compounds (with the head V boldfaced):

- a. *Hanako-ga odori-tukare-ta.*  
Hanako-NOM dance-**get.tired**-PAST  
‘Hanako **got tired** from dancing.’ ( $V_1$  = cause)  
[N.B.:  $V_1$  ending [i] (or [e] below) is ‘continuative’ verbal morphology.]
- b. *Tama-ga koroge-oti-ta.*  
ball-NOM roll-**fall**-PAST  
‘The ball **fell** down rolling.’ ( $V_1$  = manner)

Left-headed compounds:

- c. *Taroo-ga gake-o mi-orosi-ta.*  
Taroo-NOM cliff-ACC **look**-lower-PAST  
‘Taroo **looked** down the cliff.’ ( $V_2$  = manner; ‘adverbialized’)

---

<sup>1</sup> There are the so-called ‘syntactic’ V-V compounds as well, e.g. *tabe-hazime* ‘begin eating’, displaying control structure where  $V_1$  (projecting an embedded VP) is a complement of  $V_2$ . Kageyama (1993) and Nishiyama (2008) offer several tests to separate the two types. For example, the verbal pro-form, *soo su* ‘do so’, can replace *tabe* in *tabe-hazime*: *soo si-hazime* ‘begin doing so’. But *odori* in *odori-tukare* ‘get tired from dancing’ (1a) cannot be: \**soo si-tukare* ‘(Int.) get-tired from doing so’. In this paper, syntactic V-V compounds are ignored.



- d. *Taroo-ga furue-agat-ta.*  
 Taroo-NOM **shiver**-rise-PAST  
 ‘Taroo **shivered** terribly.’ (V<sub>2</sub> = degree; ‘adverbialized’)

Dvandva (dual-headed) compounds:

- e. *Ziroo-ga Hanako-o koi-sitat-ta.*  
 Ziroo-NOM Hanako-ACC **love-adore**-PAST  
 ‘Ziroo **loved** and **adored** Hanako.’
- f. *Umi-ga hikari-kagayai-ta.*  
 ocean-NOM **shine-glitter**-PAST  
 ‘The ocean **shined** and **glittered**.’

Argument synthesis has dominated the research regarding lexical V-V compounds, generating a rich array of approaches and proposals even as we speak. Though Fukushima (2008) investigates the productivity of such compounds, the perspective remains heavily argument-centered. He demonstrates that the more complicated the process of argument synthesis, the less productive a given V-V compound becomes.

As demonstrated below, headedness plays a central role in determining how argument synthesis is accomplished or influencing other aspects of V-V compound formation, e.g. the aspectual property of a V-V compound as a whole depends on that of the head verb. However, there has not been an INDEPENDENT way by which we can determine what counts as head in these compounds. If argument synthesis (or other aspects for that matter) depends on (or driven by) the argument-taking property (or other properties) of a head verb, the absence of a solid criterion for headedness is rather disturbing. That would undermine many attempts assuming headedness as the central factor for V-V compound formation. Given this situation, it would be desirable to be able to single out a head verb independent of, for example, argument synthesis, and this paper shows how that is possible. Specifically, I demonstrate descriptive and conceptual/theoretical utility of negation in the research of lexical V-V compounds in Japanese. Negation offers an independent criterion for headedness and, further, provides conceptual/theoretical motivation for a lexical approach as opposed to a syntactic one in this domain of research. Additionally, the negation data introduced below are shown to be problematic to one of the criterion for SVCs supposed by Haspelmath (2016), namely, his reliance on negation to determine monoclausality.

In section 2, the importance of headedness is demonstrated regarding the pro-



cess of V-V compound formation including the matter of argument synthesis. A brief review of how other researchers have dealt with the matter of headedness is also included there. This is followed by the current observation regarding how negation proves to be helpful determining headedness. Conceptual/Theoretical implications of the current observation are taken up in section 3 in terms of different theoretical accounts proposed for the compounds and typological classification of SVCs. Section 4 concludes the paper with final remarks.

## 2. Headedness and V-V compounds

We first examine how headedness contributes to the formation of V-V compounds, which accentuates the need for solid identification of what counts as head(s). Second, negation is shown to be one important criterion in this regard.

### 2.1. *The roles of the head in V-V compound formation*

There are at least two ways in which headedness is a significant determinant in V-V compound formation reflected in the following domains: (i) argument synthesis and argument case-marking and (ii) aspectual determination for a compound as a whole.

#### 2.1.1. *Argument synthesis and argument case marking*

In many cases, the arguments of the component verbs are matched straightforwardly – subject-to-subject and object-to-object, respectively: e.g. (1a–b) and (1e–f). Case marking of the arguments is also transparent for many instances in that all the original case markers are retained after the arguments are matched.

However, this seeming simplicity breaks down for more complex cases. (2a) is one such instance where, while the subject argument NP<sub>ga</sub> (the wearer) of non-head V<sub>1</sub> *ki* is ignored (and existentially implicated), the object argument NP<sub>o</sub> (the worn) of V<sub>1</sub> is not. Further, this NP<sub>o</sub> and the subject argument of NP<sub>ga</sub> (the object getting out of shape) of head V<sub>2</sub> *kuzure* are identified (indicated by ‘†’) and inherited into the argument structure (ARG-ST) of the entire compound *ki-kuzure*. We also note that the original nominative case marking of NP<sub>ga</sub> of V<sub>2</sub> is retained and overrides that of NP<sub>o</sub> of V<sub>1</sub>. The result is an intransitive verb in (2d), despite the fact that V<sub>1</sub> is transitive. Thus argument synthesis and case-marking determination are head-driven.



- (2) a. *Sebiro-ga ki-kuzure-ta.*  
 suit.jacket-NOM wear-**get.out.of.shape**-PAST  
 ‘The suit jacket lost its original shape due to (someone’s) wearing it.’
- b. *ki* ‘wear’ (transitive; non-head): ARG-ST<NP<sub>ga</sub>, NP<sub>o</sub><sup>†</sup>>
- c. *kuzure* ‘get.out.of.shape’ (intransitive; head): ARG-ST<NP<sub>ga</sub><sup>†</sup>>
- d. *ki-kuzure* ‘wear-get.out.of.shape’ (intransitive): ARG-ST<NP<sub>ga</sub><sup>†</sup>>
- (3) a. (*Taroo-no*) *hoho-ga naki-nure-ta*  
 Taroo-GEN cheek-NOM weep-**get.wet**-PAST  
 ‘(Taroo’s) cheeks got wet due to (his) weeping’
- b. *nak* ‘weep’ (intransitive; non-head): ARG-ST<NP<sub>ga</sub>>
- c. *nure* ‘get.wet’ (intransitive; head): ARG-ST<NP<sub>ga</sub><sup>†</sup>>
- d. *naki-nure* ‘weep-get.wet’ (intransitive): ARG-ST<NP<sub>ga</sub><sup>†</sup>>

Basically the same point is demonstrated by (3) more drastically. This time the argument NP<sub>ga</sub> of non-head V<sub>1</sub> *naki* (corresponding to a crier indicated by the optional genitive marked NP or merely existentially implicated) is ignored and is not reflected in the ARG-ST of the compound *naki-nure* in (3d), which happens to be identical to that of the head V<sub>2</sub> *nure* in (3c).

The left-headed cases like (1c, d) above, where V<sub>1</sub> is the head, are also compatible with the observation here. In the compound verb *mi-orosi* ‘look-lower (down)’ in (1c), for example, the NP<sub>o</sub> argument of transitive non-head V<sub>2</sub> *orosi* are ignored. Taken literally, V<sub>2</sub> here indeed has a transitive ARG-ST like <NP<sub>ga</sub>, NP<sub>o</sub>> of which NP<sub>ga</sub> corresponds to a lowering agent and NP<sub>o</sub> to a lowered element (say, the direction of a gaze). Though we may identify the subject argument of V<sub>2</sub> with that of V<sub>1</sub>, it is semantically implausible to identify the object arguments of V<sub>1</sub> (an object to be seen) and V<sub>2</sub> (an object to be lowered). Consequently, the ARG-ST (including case marking) of the compound is based on head V<sub>1</sub> *mi* in this case. For (1d) with *hurue-agar* ‘shiver-rise (terribly)’, taken literally, there is no possibility for matching the subject arguments of V<sub>1</sub> (a person shivering) and V<sub>2</sub> (an element going up). Though both verbs are intransitive, this matching would yield semantic incongruity. Thus, again, only the argument of head V<sub>1</sub> *hurue* is retained by the whole compound. Also, for the dvandva examples (1e, f), it is not difficult to see that their ARG-STs are the result of simply merging the two ARG-STs attributed to both heads.



There seems to be no case where the arguments of a head verb are ignored altogether while only those of a non-head verb are retained exclusively. The head's argument structure is crucial when argument synthesis and argument case-marker determination take place.<sup>2</sup>

### 2.1.2. *Aspectual composition*

Possible aspectual combinations of verbs in lexical V-V compounds are demonstrated by Fukushima (2016) and shown to be head-driven as well. As demonstrated by (4–5), any combination of aspect (telic/atelic) of the component verbs is possible with one exception. When the head (underlined) is atelic, the non-head also has to be atelic.<sup>3</sup>

- (4) a. *Taroo-ga Hanako-o **koi-sitat-ta.*** (= (1e))  
Taroo-NOM Hanako-ACC **love(atelic)-adore (atelic)-PAST**  
'Taroo **loved** and **adored** Hanako.'
- b. *Hanako-ga odori-**tukare-ta.*** (= (1a))  
Hanako-NOM dance(atelic)-**get.tired(telic) -PAST**  
'Hanako got tired from dancing.'
- c. *Ziroo-ga obore-**sin-da.***  
Ziroo-NOM drown (telic)-**die(telic)-PAST**  
'Ziroo died from drowning'.

Both verbs are the heads in (4a), which is the dvandva type, and share the identical telicity. (The left headed examples (1c, d) are rather irrelevant here since non-head V<sub>2</sub>S, being an 'adverbial' modifier is devoid of aspectual properties.) In contrast,

---

<sup>2</sup> This paper does not show how argument synthesis and case marker determination are actually accomplished. One possibility is found in Fukushima (2005) who suggests that argument synthesis is head-driven and based on compatibility of thematic proto-roles entailed for arguments of verbs. Also consult the sources cited in the onset of this paper.

<sup>3</sup> Telicity here is simply determined based on the compatibility with duration expressions like *itikan* 'one hour' (among other tests seen in Vendler (1967) and Dowty (1979)). Though verbal telicity, as well-known, is affected by the presence of an incremental theme (e.g. *eat an apple* (telic) vs. *eat apples* (atelic)), for lexical V-V compound formation, such an argument (requiring the presence of VP) is absent. For this reason, we eschew more fine-grained Vendler-type classification of verbal aspect here (such as state, activity, achievement, and accomplishment). The exact mechanism for telicity determination for V-V compounds (based on the classification of verbal aspect by Dowty (1986)) is not given here. See Fukushima (2016).



those in (5) all have atelic heads ( $V_2$ ) and telic non-heads ( $V_1$ ), rendering them impossible compounds.

- (5) a. \**Taroo-ga terebi-o naosi-tukat-ta.*  
 Taroo-NOM TV-ACC repair(telic)-use(atelic)-PAST  
 ‘(Int.) Taroo repaired and (then) used a TV.’ or ‘(Int.) Taroo used a TV by repairing it.’
- b. \**hiroge-ur* ‘spread (telic)-sell(atelic), (Int.) sell after spreading (merchandise) or sell by spreading (merchandise)’
- c. \**koware-nokor* ‘break (telic)-remain(atelic), (Int.) remain after going out of order’
- d. \**taosi-fum* ‘knock.down (telic)-step.on(atelic), (Int.) step on after knocking (something) down’ or ‘(Int.) step on by knocking (something) down’

In this way, headedness is also a factor for the determination of telicity of lexical V-V compounds. Overall, then, headedness plays a significant role in the characterization of V-V compound properties.

## 2.2. *Negation and headedness*

The observations above accentuate the importance of the ability to determine headedness regarding lexical V-V compound formation. However, headedness so far is not determined INDEPENDENTLY—it depends solely on the intuitions of native speakers as to which verb counts as head. The lack of a solid criterion in this regard is disturbing because it compromises the strength of a system for characterizing and predicting (im)possible compounds.

### 2.2.1. *How headedness has been treated: a brief survey*

While there are some who are not concerned (at least explicitly) about headedness (Hasegawa 2000; Asao 2007, etc.), so far, many assume right-headedness (with head  $V_2$ ) for lexical V-V compounds, following Williams’ (1981) right-hand head rule (Kageyama 1993; Nishiyama 1998/2008; Gamerschlag 2002; Yumoto 2005; etc.). Left-headed examples like (1c, d) above, where  $V_1$  single handedly provides an argument to the whole compound, is treated with special mechanisms (distinct



from one account to another).<sup>4</sup> Though Nishiyama (2008: 324) states that “[t]here is a general agreement among researchers that  $V_2$  is the head in V-V compounds in Japanese”, he does not offer any independent criterion/criteria for headedness other than the fact that transitivity and argument synthesis are determined by the head echoing a similar observations in section 2.1.1. above. Kageyama (2009), on the other hand, indeed acknowledges and introduces right, left, and double headed (dvandva) V-V compounds, but again, without indicating how we can determine the head in each case.

Alternatively, following Di Sciullo & Williams (1987), Matsumoto (1986) relativizes headedness, stating that the right-most element supplying ‘significant semantic information’ (argument structures inclusive) is the head. The head in (1c, d) will be  $V_1$  since it contributes the argument-taking information. Or, as done by Fukushima (2005), headedness is determined by the ‘kind of’ test. For example, in (1a) the whole compound is a kind of getting tired but not of dancing, i.e.  $V_2$  is the head. In contrast, in (1c)  $V_1$  is the head since the compound is a kind of looking, not of lowering. Likewise for (1e) both Vs are the heads due to the fact that the compound is both a kind of loving and a kind of adoring.

The problem with Matsumoto’s and Fukushima’s approaches as well as Nishiyama’s supposition above is that their methods are *post hoc*; we have to know the property of a V-V compound as a whole to determine which verb is semantically significant or which verb counts as the sort-specifier for the compound. For example, following Matsumoto, to locate that special verb (the head) which makes a significant contribution to the argument structure of a compound, we need to grasp the argument structure (or transitivity) of the entire compound first and decide which argument (or transitivity) is attributed to the head. However, before the argument structure of the entire compound can be determined, we need to know which verb count as the head that significantly contribute to the argument structure (or transitivity) of the entire compound—a vicious circle. The same point can be made, *mutates mutandis*, regarding Fukushima’s assumption. Below I suggest that negation helps in this respect since negation is independent of information sharing between the head and the whole compound, avoiding the problems mentioned above. In particular, given a novel V-V compound, applying the negation test to it

---

<sup>4</sup> In addition to V-V compounds, the right-hand head rule cannot be maintained as is anyway. In the domain of nominal compounds in Japanese, in addition to (expected) right headed ones, left and double headed N-N compounds are wide-spread. For example, *oya-ko* ‘parent-child’ and *fuu-fu* ‘husband-wife’ are double headed and *doku-syo* ‘reading-book (i.e. book-reading)’ and *ken-satu* ‘checking-ticket (ticket-checking)’ are left-headed.





would determine the head. We can simply rely on the semantic properties of the component verbs separately to determine the head without granting one of them a special status.

### 2.2.2. *An independent criterion for headedness*

Negation yields different patterns of interpretation regarding  $V_1$  and  $V_2$  of lexical V-V compounds of the three different types seen above in (1). When negation is applied to sentences with these compounds, usually it ends up negating the states of affairs attributed to both verbs. But (i) when only one of the verbs is targeted by negation, either non-head  $V_1$  or head  $V_2$  can be negated in isolation for the right-headed examples as in (6). Under the same condition, (ii) only non-head  $V_2$  can be negated for the left-headed ones in (7). In contrast, (iii) neither head can be negated for the dvandva examples in (8). ('#' indicates semantic unacceptability of some affirmative continuations.)

#### (6) Right-headed compounds:

- a. *Hanako-ga odori-tukare-nakat-ta.* (cf. (1a))  
Hanako-NOM dance-**get.tired**-NEG-PAST  
'Hanako did not get tired from dancing.'
- a'. ... *demo odot-ta.* '... but she danced (without getting tired).' [only  $\neg V_2$ ]
- a''. ... *demo tukare-ta.* '... but she got tired (from walking afterwards).' [only  $\neg V_1$ ]
- b. *Tama-ga koroge-oti-nakat-ta.* (cf. (1b))  
ball-NOM roll-**fall**-NEG-PAST  
'The ball did not fall down rolling.'
- b'. ... *demo koroge-ta.* '... but it rolled (maybe without falling).' [only  $\neg V_2$ ]
- b''. ... *demo oti-ta.* '... but it fell down (maybe without rolling).' [only  $\neg V_1$ ]

#### (7) Left-headed compounds:

- a. *Taroo-ga gake-o mi-orosa-nakat-ta.* (cf. (1c))  
'Taroo did not **look** down the cliff.'
- a'. ... *demo mi-ta.* '... but looked (up).' [only  $\neg V_2$ ]



- a". ... #demo *orosi-ta*. '... but lowered. [verb] / it was downwards. [ad-verb]'
- b. *Taroo-ga furue-agara-nakat-ta*. (cf. (1d))  
Taroo-NOM **shiver**-rise-NEG-PAST  
'Taroo did not shiver terribly'
- b'. ... *demo furue-ta*. '... but he shivered (not so terribly).' [only  $\neg V_2$ ]
- b". ... #demo *agat-ta*. '... but he went up. [verb] / he did so terribly. [ad-verb]'

(8) Dvandva compounds:

- a. *Ziroo-ga Hanako-o koi-sitawa-nakat-ta*. (cf. (1e))  
Ziroo-NOM Hanako-ACC **love-adore**-NEG-PAST  
'Ziroo did not love and adore Hanako.'
- a'. ... #demo *kou-ta*. '... but he loved her.'
- a". ... #demo *sitat-ta*. '... but he adored her.'
- b. *Umi-ga hikari-kagayaka-nakat-ta*. (cf. (1f))  
Ocean-NOM **shine-glitter**-NEG-PAST  
'The ocean did not shine and glitter.'
- b'. ... #demo *hikat-ta*. '... but shined.'
- b". ... #demo *kagayai-ta*. '... but glittered.'

We note that there is no *a priori* intrinsic connection between negation and headedness. Nevertheless, the three different types (headedness) of V-V compounds introduced in (1) correspond to different patterns of interpretation in (6–8) involving negation. Thus taking advantage of such an outcome, we can INDEPENDENTLY determine headedness. Thus, so far, negation is shown to be an empirical tool that enhances a description of data.

### 3. Conceptual/theoretical implications

Now that we have examined the empirical utility of negation in conjunction with lexical V-V compound formation, let us now see the conceptual/theoretical implications next. Here negation is also shown to be (i) a useful tool helping us choose an adequate account of V-V compounds and (ii) a check on a typological criterion regarding SVCs. Specifically, it is suggested that lexical accounts are preferable



over syntactic accounts and negation is not a reliable factor deciding a monoclausal domain—a condition often imposed on SVCs as seen above.

### 3.1. *Negation and lexical vs. syntactic approaches to word-formation*

Lexical vs. syntactic opposition within the context of word-formation has existed since Chomsky (1970) who objects to the uniform syntactic treatment of derived vs. gerundive nominals advocated by Generative Semanticists (with the expressions like ‘derived’ and ‘gerundive’ to be understood in terms of the classical transformational grammar). The nature of word-formation has been controversial in many ways ever since. ‘Remarks on Nominalization’ gave rise to the so called ‘interpretive semantics’ (Jackendoff 1972) and ultimately to lexicalism of various strengths. Generative Semantics has been reincarnated as a ‘cartographical’ approach whose morphological adaptation is found in Hale and Keyser (1993) and versions of Distributive Morphology (Halle and Marantz 1993). As seen in Borer (1998) and Spencer (2005), one of the currently contentious issues in theoretical linguistics remains to be the opposition between lexical and non-lexical (particularly syntactic) means for word-formation.

Compounding in various languages does not escape this general theoretical disagreement regarding word-formation. Just for English, for example, we find lexical approaches (Lieber 1980/1983; Selkirk 1982; and Di Sciullo and Williams 1987) and syntactic (transformational) approaches (Fabb 1984; Sproat 1985; Roeper 1988; and Lieber 1992). More generally, Sadock (1998) suggests that, cross-linguistically compound formation is autonomous in such a way that it is not possible to define it with reference to properties external to its unique morphology. To this, Baker (1998) raises objections presenting alternative typological perspectives.

With regard to East Asian languages, we see that the compound debate is vibrant concerning, *inter alia*, V-V compounds. For example, Korean  $V_1$ -e- $V_2$  compounds receive a lexical treatment by Kim (1993) who, for the purpose of argument sharing between componential verbs, supposes a hierarchy of thematic roles and prominence-based (in terms of the hierarchy) one-to-one matching between the arguments of the componential verbs with identical thematic roles. Against this, Yi (1996) offers an alternative syntactic account employing a ‘serial verb’ approach where the VP with a lexical object headed by  $V_1$  is a complement of  $V_2$  which projects its own VP with a *pro* object. Syntactic incorporation of  $V_1$  into  $V_2$  combines the two verbs in to a compound. Co-indexing between the lexical object and the *pro* object establishes identification of arguments. This ‘serial verb’ assumption is

shared by Nishiyama's (1998) account introduced below following Collins (1997).

Looking at Chinese, for example, we find Li (1990/1998) who denies the applicability of transformation like incorporation. Li (1990) formulates a lexical account for Chinese resultative V-V compounds and defends it along with the concept of an autonomous word formation component (Li 1998) output of which is indecomposable lexical items regardless of how complex their appearance might be. Against this, a purely syntactic account for such compounds is proposed by Liu (2014) that supposes verb/NP movement as in  $[_{VP} \text{verb}_{1i} \text{-verb}_{2j} [_{VP1} \text{NP}_k t_i [_{VP2} t_j t_k]]]$ . We note that  $V_1$ - $V_2$  are separate verbs heading distinct VP constituents with  $VP_2$  being a complement of  $V_1$ . (Again, this is very similar to Nishiyama's (1998) account below.) After both  $V_1$  and  $V_2$  move to  $v$ , the two verbs form a compound. The object NP of  $V_2$  moves to SPEC- $V_1$  and thus assumes both semantic roles assigned by  $V_1$  and  $V_2$ .

Japanese is no stranger to the dispute regarding how best to treat V-V compounds and again we find both lexical and syntactic accounts for lexical V-V compounds. Among recent research on these compounds, we count Kageyama (1993), Matsumoto (1996/1998), Gamerschlag (2002), Fukushima (2005/2008), and Yumoto (2005) as examples of the former. Proponents for the latter include Nishiyama (1998), Hasegawa (2000), and Saito (2000). Though there are merits and demerits of either type of account (see Nishiyama 2008), the focus is on the aspects relevant to negation here.

In light of the data involving the compounds and negation seen above, we first consider Nishiyama's syntactic account as a representative, which is developed more extensively than others and is epitomized as in (9).

(9) Nishiyama's VP-embedding account:<sup>5</sup>

- a. Each verb in a V-V compound gives rise to a VP.
- b. A VP headed by the non-head (e.g.  $V_1$  of right-headed ones) is a 'complement' of the head (e.g.  $V_2$ ), indicating cause, manner, means, etc. That is to say that each V projects a syntactically independent PHRASAL constituent with the former acting as a modifier.

With the assumptions above, (10b) and (11b) are syntactic structures from which the compounds in (10a) and (11a) are derived. It is noted that the two verbs do not form a compound word at all at least at the point where interpretation is accom-

<sup>5</sup> Remarks on Nishiyama (1998) here are rather simplified. See Fukushima (2005) for an extensive review of his syntactic account.



plished based on the syntactic structures. (Later on, the non-heads are verb-raised to merge with the heads just to obtain the ‘surface’ word-hood of the compounds.) Instead, they are full-fledged independent VPs with one acting as a ‘modifier’ for the other. [N.B.: Only the relevant structural aspects are shown here.]

(10) Nishiyama-style structures for (1a) without/with negation

- a. *Hanako-ga odori-tukare-ta.* (= (1a))  
Hanako-NOM dance-**get.tired**-PAST  
‘Hanako got tired from dancing.’ (V<sub>1</sub> = cause)
- b. [<sub>TRP</sub> Hanako<sub>i</sub>-ga [<sub>TR</sub> [<sub>VP2</sub> [<sub>V2</sub> [<sub>VP1</sub> PRO<sub>i</sub> odori] **tukare**]] Tr]]
- c. [<sub>NegP</sub> [<sub>TRP</sub> Hanako<sub>i</sub>-ga [<sub>TR</sub> [<sub>VP2</sub> [<sub>V2</sub> [<sub>VP1</sub> PRO<sub>i</sub> odori] **tukare**]] Tr]] -nai<sub>Neg</sub>]  
[N.B.: Tr is ‘active’ (transitive) or ‘inactive’ (intransitive).]

(11) Nishiyama-style structures for (1d) without/with negation

- a. *Taroo-ga furue-agat-ta.* (= (1d))  
Taroo-NOM **shiver**-rise-PAST  
‘Taroo shivered terribly.’ (V<sub>2</sub> = degree)
- b. [<sub>TRP</sub> Taroo<sub>i</sub>-ga [<sub>TR</sub> [<sub>VP1</sub> [<sub>V1</sub> **furue** [<sub>VP2</sub> PRO<sub>i</sub> agat]]] Tr]]
- c. [<sub>NegP</sub> [<sub>TRP</sub> Taroo<sub>i</sub>-ga [<sub>TR</sub> [<sub>VP1</sub> [<sub>V1</sub> **furue** [<sub>VP2</sub> PRO<sub>i</sub> agat]]] Tr]] -nai<sub>Neg</sub>]

(10c) and (11c) are structures reflecting added negation. Since both of these are hierarchically (i.e. scope-wise) identical with syntactically independent VP-embedding, we would expect negation to have the same effect on both (10) and (11). Both should accommodate V<sub>1</sub> and V<sub>2</sub> negation in isolation. However, as we have seen in (6) and (7), their behavior vis-à-vis negation is not identical. The fact that V<sub>2</sub> in (11) acts as an ‘adverbial’ element should not make any difference since a semantic change has already taken place before the point where it is included in a syntactic structure. After all, it is treated as a regular modifier indicating degree. It should be just as negatable as V<sub>1</sub> indicating cause in (10) or manner in (6b) above.

According to a syntactic account, accommodating (10) requires the following: a complex array of V-movement and/or Neg-movement. V/Neg-raising and/or V/Neg-lowering have to be effected in intricate fashion to make all the structural possibilities in (12) available.

- (12) a. [VP<sub>1</sub> VP<sub>2</sub>] Neg
- b. [[VP<sub>1</sub> Neg] VP<sub>2</sub>]



c. [VP<sub>1</sub> [VP<sub>2</sub> Neg]]

On the other hand, for (11), only (12a, b) are needed. (12c) has to be excluded somehow. Now, as we saw above, since (10) and (11) share the identical hierarchical structure, it would be rather difficult (if not impossible) to exclude (12c) only for (11).

How would a lexical account fare in this regard? Abstracting away from technical differences among lexical accounts, we note that a lexical V-V compound would be a lexical unit, i.e. [<sub>word</sub> verb-verb]—‘one word’ in the sense of Aikhenvald (2006). When negation attaches to this morphologically, we can assume that it is able to interact with each morpheme independently or collectively as in (13) due to the lexical locality/adjacency—negation is another verbal affix after all. The same point can be independently demonstrated by the transparent nominal compound, *ao-singo* ‘blue (traffic) signal’ in (14a), where negation can affect both nouns (14b), only N<sub>1</sub> (14c), and only N<sub>2</sub> (14d). This takes care of the right-headed (1a,b) and dvandva examples (1e,f).

(13) a. [V<sub>1</sub> V<sub>2</sub>] Neg

b. [[V<sub>1</sub> Neg] V<sub>2</sub>]

c. [V<sub>1</sub> [V<sub>2</sub> Neg]]

(14) a. *ao-singo-de-nai*

blue-signal-COP-NEG

‘(It) is not a blue signal.’

b. ... *nanika mattaku betu-mono-da*. ‘... it is something else altogether.’  
[i.e. ¬(N<sub>1</sub> N<sub>2</sub>)]

c. ... *demo singo-da*. ‘... but it is a signal (of a different color).’ [i.e. only  
¬N<sub>1</sub>]

d. ... *demo ao-da*. ‘... but it is blue (say, a street sign).’ [i.e. only ¬N<sub>2</sub>]

The fact that dvandva (or coordinating) V-V compounds (1e, f) allow only (13a) is attributed to the semantic counterpart of the coordinate structure constrain (CSC), which in effect would rule out the cases where only one component of such compounds is affected by negation. Due to the (semantic) CSC, negation must take effect across the board.

But how about the left-headed examples (1c, d)? Here we note that non-head V<sub>2</sub> is a ‘deverbalized’ adverbial element that is COLLOCATIONALLY dependent on the head. This means that V<sub>2</sub> can exert its semantic effect only in conjunction with



head  $V_1$  but not independently, making it impossible to retain its non-literal meaning IN ISOLATION as in (13b). Note that such a collocational dependency is easy to state lexically.

Though what has been shown above is a simplified informal sketch, awaiting a formal lexical account, it is sufficient to show that a lexical account is arguably superior to a syntactic one at least when negation is involved. This is attributed to different ways by which the interaction of negation and the component verbs are handled. In a syntactic account, the interaction has to be regulated by a complex array of movement arrangements due to the fact that there are two independent VPs involved. In contrast, a lexical account can accommodate the interaction on the level of morphemes and their lexical interaction, which can simultaneously make a special provision for collocationally dependent (i.e. distributionally restricted) elements.

### ***3.2. Negation and its typological/classificational implication regarding SVCs***

Finally, let us consider another conceptual/theoretical implication of negation and lexical V-V compounds in the domain of typological classification of SVCs. As mentioned in section 1 above, monoclausality plays a central role in Haspelmath's (2016) definition of SVCs of which lexical V-V compounds in Japanese are examples per excellence (see his actual citation of Nishiyama's (1998) data on p. 298). To this end, Haspelmath states that

[m]y proposal here is to follow Bohnemeyer et al. (2007: 501), who 'rely on the criterion of lack of independent negation as a cross-linguistically applicable test for clausehood'. This means that in a serial verb construction, there is only one way to form the negation, usually with scope over all the verbs. (Haspelmath 2016: 299)

Given that he considers Japanese lexical V-V compounds instantiate a SVC, the range of interpretation involving negation seen in (6–7) above is quite unexpected. His system should predict that only (13a) is possible but not (13b, c). This means that either Japanese lexical V-V compounds are not part of SVCs or his definition employing monoclausality based on negation is misdirected. To get out of this situation, he can clarify what the expression "usually" means in the statement above. But such a move would obviously weaken the empirical strength of the monoclausality criterion.



#### 4. Concluding remarks

With lexical V-V compound data in Japanese, this paper has shown that negation offers an independent linguistic bench mark empirically and conceptually/theoretically, which eventually enables more solid testing of predictions and proper construction of hypotheses. In particular, we have seen that negation can motivate differences in headedness among lexical V-V compounds. Thus negation is not only an intriguing object of research, but also a useful descriptive as well as conceptual resource.

#### References

- Aikhenvald, Alexandra Y. 2006. In Aikhenvald, Alexandra Y. & Dixon, R. M. W. (eds.), *Serial verb constructions*, 1–68. Oxford: Oxford University Press.
- Baker, Mark. 1998. Comments on the paper by Sadock. In Lapointe, Steven & Brentari, Diane & Farrell, Patrick (eds.), *Morphology and its relation to phonology and syntax*, 188–212. Stanford: CSLI.
- Bohnenmeyer, Jürgen, & Enfield, Nicholas J. & Essegbey, James & Ibarretxe-Antuñano, Iraide & Kita, Sotaro, & Lüpke, Friederike & Ameka, Felix K. 2007. Principles of event segmentation in language: the case of motion events. *Language* 83: 495–532.
- Borer, Hagit. 1998. Morphology and syntax. In Spencer, Andrew & Zwicky, Arnold (eds.), *The handbook of morphology*, 151–190. Oxford: Blackwell.
- Chomsky, Noam. 1970. Remarks on nominalization. In Jacobs, Roderick & Rosenbaum, Peter (eds.), *Readings in English Transformational Grammar*, 184–221. Waltham: Ginn.
- Collins, Chris. 1997. Argument sharing in serial verb construction. *Linguistic Inquiry* 28. 461–497.
- Di Sciullo, Anne-Marie, & Williams, Edwin. 1987. *On the definition of word*. Cambridge, MA: MIT Press.
- Dowty, David. 1979. *Word meaning and Montague Grammar*. Dordrecht: Reidel.
- Dowty, David. 1986. The effects of aspectual class on the temporal structure of discourse: semantics or pragmatics? *Linguistics and Philosophy* 9. 37–61.
- Fabb, Nigel. 1984. *Syntactic affixation*. Cambridge, MA: MIT dissertation.
- Fukushima, Kazuhiko. 2005. Lexical V-V compounds in Japanese: lexicon vs. syntax. *Language* 81. 568–612.
- Fukushima, Kazuhiko. 2008. On the type-wise productivity of lexical V-V compounds in Japanese: a thematic proto-role approach. *Gengo Kenkyu* (Linguistic research) 134. 119–140.





- Fukushima, Kazuhiko. 2016. Telicity makes or breaks verb serialization. In Audring, Jenny & Masini, Francesca & Sandler, Wendy (eds.), *Quo vadis morphology? Mediterranean Morphology Meeting 10 On-line proceedings*, 55–63. [DOI: [http://www.lilec-mmm.it/wp-content/uploads/2016/07/MMM10\\_proceedings\\_BOOK.pdf](http://www.lilec-mmm.it/wp-content/uploads/2016/07/MMM10_proceedings_BOOK.pdf)]
- Gamerschlag, Thomas. 2002. Complex predicate formation and argument structure of Japanese V-V Compounds. In Akatsuka, Noriko & Strauss, Susan & Comrie, Bernard (eds.), *Japanese/Korean linguistics*, Vol. 10, 532–544. Stanford: CSLI.
- Hale, Kenneth, Samuel J. Keyser. 1993. On argument structure and the lexical expression of syntactic structure. In Hale, Kenneth & Keyser, Samuel J. (eds.), *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, 53–109. Cambridge, MA: MIT Press.
- Halle, Morris & Marantz, Alec. 1993. Distributed morphology and pieces of inflection. In Hale, Kenneth & Keyser, Samuel J. (eds.), *The view from Building 20: Essays in linguistics in honor of Sylvain Bromberger*, 111–176. Cambridge, MA: MIT Press.
- Hasegawa, Nobuko. 2000. Resultatives and language variations: Result phrases and VV compounds. In Nakayama, Mineharu & Quinn, Jr., Charles J. (eds.), *Japanese/Korean Linguistics 9*, 269–282. Stanford: CSLI Publications.
- Haspelmath, Martin. 2016. The serial verb construction: comparative concept and cross-linguistic generalizations. *Language and Linguistics* 17. 291–319.
- Himeno, Masako. 1999. *Hukugoodooshi-no kozo-to imiyooohoo* (Structure and semantic usage of compound verbs). Tokyo: Hitsuji.
- Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar*. Cambridge, MA: MIT Press.
- Kageyama, Taro. 1993. *Bunpoo-to gokeisei* (Grammar and word-formation). Tokyo: Hitsuji.
- Kageyama, Taro. 2009. Isolate: Japanese. Lieber, Rochelle & Štekauer, Pavol (eds.), *The Oxford handbook of compounding*, 512–526. Oxford: Oxford University Press.
- Li, Yafei. 1993. Structural head and aspectuality. *Language* 69. 480–504.
- Li, Yafei. 1998. Chinese resultative construction and the uniformity of theta assignment hypothesis. In Packard, Jerome L. (ed.), *New approaches to Chinese word formation*, 285–310. Berlin: Mouton de Gruyter.
- Lieber, Rochelle. 1980. *On the organization of the lexicon*. Cambridge, MA: MIT dissertation.
- Lieber, Rochelle. 1983. Argument linking and compounding in English. *Linguistic Inquiry* 14. 251–286.
- Lieber, Rochelle. 1992. *Deconstructing morphology*. Chicago: University of Chicago Press.
- Liu, Mingming. 2014. Mandarin resultative verb compound involves VP complementation. In Kwon, Soohyun, ed. *Proceedings of the 37th Annual Penn Linguistics Confer-*



- ence, Article 24. Philadelphia: The Penn Linguistics Club, University of Pennsylvania, [DOI: <http://repository.upenn.edu/pwpl/vol20/iss1/24/>].
- Matsumoto, Yo. 1996. *Complex predicates in Japanese: A syntactic and semantic study of the notion 'word'*. Stanford: CSLI.
- Matsumoto, Yo. 1998. Nihongo-no goiteki fukugoo dooshi-niokeru dooshi-no kumiawase (Combinations of verbs in lexical compounds in Japanese). *Gengo Kenkyu* (Linguistic research) 114. 37–83.
- Nishiyama, Kunio. 1998. V-V compounds as serialization. *Journal of East Asian Linguistics* 7. 175–217.
- Nishiyama, Kunio. 2008. V-V compounds. Miyagawa, Shigeru, ed. *The Oxford handbook of Japanese linguistics*, 320–347. Oxford: Oxford University Press.
- Roeper, Thomas. 1988. Compound syntax and head movement. *Yearbook of Morphology* 1. 187–228.
- Sadock, Jerold. 1998. On the autonomy of compounding morphology. In Lapointe, Steven, & Brentari, Diane & Farrell, Patrick (eds.), *Morphology and its relation to phonology and syntax*, 161–187. Stanford: CSLI.
- Saito, Mamoru. 2000. Predicate raising and theta relations. Proceedings of Seoul International Conference on Language and Computation 2000, 85–113.
- Selkirk, Elisabeth. 1982. *The Syntax of words*. Cambridge, MA: MIT Press.
- Spencer, Andrew. 2005. Word-formation and syntax. In Štekauer, Pavol, & Lieber, Rochelle (eds.), *Handbook of word-formation*, 73–97. Dordrecht: Springer.
- Sproat, Richard. 1985. *On deriving the lexicon*. Cambridge, MA: MIT dissertation.
- Vendler, Zeno. 1967. *Linguistics in philosophy*. Ithaca, NY: Cornell University Press.
- Williams, Edwin. 1981. On the notions 'lexically related' and 'head of a word'. *Linguistic Inquiry* 12. 245–274.
- Yumoto, Yoko. 2005. *Fukugodoshi/Haseidoshi-no imi-to togo: Mojuru keitairon-kara mita nichieigo-no doshi keisei* (The semantics and syntax of compound verbs/derived verbs: verb-formation in Japanese and English viewed from a modular morphological perspective). Tokyo: Hitsuji.

### The address of the author:

Kansai Gaidai University  
16-1 Nakamiya Higashino-cho  
Hirakata, Osaka 573-1001 JAPAN  
kaz.zisin@gmail.com



**NEGACIJA KAO EMPIRIJSKI/KONCEPTUALNI ALAT:  
STUDIJA GLAGOLSKIH (V-V) SLOŽENICA**

Ovo istraživanje japanskih leksičkih složenica s dva glagola (V-V) otkriva opisnu i konceptualnu korisnost negacije. Takve su složenice vrlo popularan, ali i kontroverzan predmet istraživanja, pri kojem određivanje glave igra značajnu ulogu. Ipak, sve do sada nije utvrđen NIJEDAN nezavisni kriterij za određivanje glave takvih složenica pa se stoga u radu naglašava da je upravo negacija takav kriterij. K tomu, negacija je zanimljiva i s teorijskog aspekta jer upućuje na to da su leksički pristupi prikladniji od sintaktičkih. Negacija nudi empirijski i konceptualno nezavisne kriterije, koji nam omogućavaju da na bolji način ispitujemo i osmišljavamo predviđanja i hipoteze.

**Ključne riječi:** leksičke glagolske složenice; svojstvo glave; negacija, japanski.