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The Serial-Verb Construction and Verbs of Motion in Japanese

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The present article describes the grammatical properties of the Japanese Serial-Verb Construction (SVC) (in partial comparison with the Korean SVC) and argues for the view that the semantics is compositionally read off the syntactic structure in the framework of l-syntax of Zubizarreta and Oh (2007). We also discuss the semantic relations between events encoded by the SVCs in Japanese.

0. Introduction

The present article describes the grammatical properties of the Japanese Serial-Verb Construction (SVC) (in partial comparison with the Korean SVC) and argues for the view that the semantics is compositionally read off the syntactic structure in the framework of l-syntax of Hale and Keyser (2001) and Zubizarreta and Oh (2007) in the Chomskyan syntax. We first discuss the grammatical characteristics of the SVCs and argue that the Japanese SVCs are not compounds (on a par with Korean ones). We then turn to the semantic relations between events encoded by the SVC in Japanese: Consequential SVC and the Simultaneous/coevents SVC and how such structures are generated.

1. Serial Verb Constructions (SVCs) in Japanese

1.1. The Grammatical Properties of the Japanese SVCs

Japanese serial verbs shares the characteristic grammatical properties of SVCs with those of Korean. The properties are

(1) a. All verbs are interpreted as having the same tense, aspect, mood, and polarity.

　　b. There is only one overtly expressed syntactic subject.

　　c. There is only one overtly expressed syntactic object. (Zubizzareta and Oh (2007: 57))

The present article exemplifies these properties briefly below. Following the traditions in the literature, we will translate the Japanese SVC examples with English coordinate sentences throughout this paper.

We note though that such translations are not accurate but they are only approximations of the meaning conveyed by the Japanese SVC. The abbreviations used in the glosses are as follows: Nom: nominative case, Acc: accusative case, Gen: genitive case, L: linker, Neg: negation, Past: past tense, Pres: present tense, Comp: complementizer, Conj: conjunction, Sub: subordination, Loc: locative, Hon: honorific marker, Cause: causative, Prog: progressive, Rel: relativizer, Resul: resultative marker, Ben: benefactive

Japanese SVCs allows for one single tense specification, which scopes over the entire sequence of Vs:

(1)　a.　John-wa supu-wo ni-(*ta) tume-ta
　　　　 John-NOM soup-Acc broil-Past evapolate-Past
　　　　 'John boiled the soup and evapolated to half of its volume.
　　 b.　cf. John-wa sakana-o ni-te ku-tta.
　　　　 John-NOM sakana-Acc broil-Past eat-Past.
　　　　 'John broiled and ate the fish.'

Japanese SVCs contain one and only one overt subject and at most one overt object, as exemplified below.

(2)　John-wa soup-wo (*Mary-ga) ni tume-ta

(3)　John-wa soup-wo (*sosu-wo) ni tume-ta

Japanese SVCs allow for one single polarity. This can be best understood in the case of negative polarity. Japanese has a single type of negation. It is realized as *nai* and immediately follows the verb.

(4)　John-wa ropu-wo nigira-naka-tta.
　　　John-Nom rope-Acc grip-Neg-Past

'John did not grip the rope'

In Japanese SVC, negation *nai* follows the last V.

(5)　John-wa supu-wo ni tume-naka-tta
　　　John-Nom soupe-Acc boil evapolate-Neg-Past

'John did not boil and evapolated the soupe'

While there are many similarities between the subordinate structure introduced by the subordinate marker *-kara* and the SVC, they are syntactically distinct. Japanese subordinate structures are biclausal, and therefore each clause has its own tense node on a parallel with Korean subordinate structures. This is illustrated in (6).

(6)　John-wa kinou sakana-wo nir-ta-kara kyou ku-tta
　　　John-Nom yesterday fish-Acc broil-Past-Sub today eat-Past
　　　'Because John broiled the fish yesterday, he/she ate it today.'

As shown in (7), the subordinate clause can carry its own negative morpheme.

(7)　John-ga sakana-wo nir-naka-tta-kara (sore-wo) kuwa-naka-tta
　　　John-Nom fish-Acc broil-Neg-Past-Sub (it-Acc) eat-Neg-Past
　　　'Because John didn't broil the fish, he/she didn't eat it today.'

In the subordinate structures, negation bears scope soley over the verb that immediately precedes it and it does not bear scope over both Vs in this construction.

(8)　a.　John-wa sakana-wo nir-naka-tta-kara (sore-wo) ku-tta
　　　　 John-Nom fish-Acc broil-Neg-Past-

Sub (it-Acc) eat-Past

'Because John didn't broil the fish, she ate it.'

 b. John-wa sakana-wo nir-naka-tta-kara (sore-wo) kuwa-naka-tta

John-Nom fish-Acc broil-Past-Sub (it-Acc) eat-Neg-Past

'Because John didn't broil the fish, she didn't eat it.'

Given the biclausal nature of the subordinate structures, it is unsurprising that each of the clauses can express its own subject and object as well:

(9) a. John-wa sakana-wo nir-ta-kara sore-wo ku-tta

John-Nom fish-Acc broil-Past-Sub it-Acc eat-Past

'Because John broiled the fish, she ate it.'

 b. John-wa sakana-wo nir-ta-kara Mary-ga sore-wo ku-tta

John-Nom fish-Acc broil-Past-Sub Mary-ga it-Acc eat-Past

'Because John broiled the fish, Mary ate it.'

The data of Japanese SVCs discussed above clearly show that the SVC is clearly different from the one involving subordination. While the subordinate structure is biclausal, the SVC is unambiguously monoclausal (Zubizarreta and Oh (2007: 60)).

SVCs are also distinct from coordinate structures in Japanese. In coordinated structures, each clause contains a tense marker (although the tense marker in the first clause can be deleted if identical to the tense

marker in the second clause with slight morphological modifications) and each clause can have a negative morpheme, as well as a distinct subject and object:

(10)John-wa sakana-wo nir-(ta)-ga (sore-wo) tabe-ta.

John-Nom fish-Acc broil-(Past)-Conj (it-Acc) eat-Past.

'John broiled the fish and/but ate it'

(11)John-wa sakana-wo nir-naka-tta-si (sore-wo) tabe-naka-tta. (or ... nir-nai-si (sore-wo) tabe-naka-tta.)

John-Nom fish-Acc broil-Neg-(Past)-Conj (it-Acc) eat-Neg-Past.

'John neither broiled nor ate the fish.'

The coordinate structure is also distinct from the SVC with respect to the scope of the negative morpheme in Japanese. In particular, negation can scope over the verb that immediately follows but cannot scope over the entire sequence of Vs. Thus, (12) can be associated with the meaning in (13a), but not with the meaning in (13b).

(12)John-wa sakana-wo nir-naka-tta-ga (sore-wo) tabe-ta.

John-Nom fish-Acc broil-Neg-Past-Conj (it-Acc) eat-Neg-Past.

(13) a. Although John did not broil the fish, he ate it.

 b. John did not broil and eat the fish (he threw it away).

Further evidence for the monoclausal property of Japanese SVCs is provided by several syntactic tests, namely, passivization, honorific agreement, and Negative Polarity Item (NPI) licensing along the lines explored

with regard to Korean SVCs in Zubizarreta and Oh (2007: 61ff.). We will discuss the NPI licensing test here because we will use it throughout this paper to distinguish the SVC from cases of covert subordination. NPIs in Japanese require a clause-mate negation, as illustrated by the examples below. This requirement is met in (14a-b), but not in (14c-d). In the latter cases, the NPI and the negative morpheme belong to different clauses. This distribution infringes the clause-boundedness condition on NPI licensing.

(14) a.　John-wa [*daremo* soko-ni ika-naka-tta-to] omotte-iru.

　　　　John-Top anyone there-Loc go-Neg-Past-Comp think-Pres.

　　　　'John thinks that no one went there.'

　　b.　*Daremo* [John-ga soko-ni ik-tta-to] omowa-nai.

　　　　Anyone John-Nom there-Loc go-Past-Comp think-Neg-Pres

　　　　'No one thinks that John went there.'

　　c.　?(?)John-wa [*daremo* soko-ni ik-tta-to] omowa-nai.

　　　　John-Top anyone there-Loc go-Past-Comp think-Neg-Pres

　　d.　**Daremo* [John-wa soko-ni ika-naka-tta-to] om-tteiru

　　　　Anyone John-Nom there-Loc go-Neg-Past-Comp think-Pres

　In the case of Japanese SVCs, negation can only follow the second verb. The situation is different in the case of Korean SVCs, where short-form negation can precede the first verb or long-form negation can follow the second verb (N.B. Zubizarreta and Oh (2007: 62)). In

any case, an NPI in subject and object position can be equally licensed. This suggests that the subject and object are in the same clause as the negative morpheme, when the negation does not immediately follows the first verb but immediately follows the second verb in Japanese.

(15) a.　John-wa *nanimo* ker-i taosa-naka-tta.

　　　　John-Nom anything kick-L throw-Neg

　　　　'John didn't kick and throw anything.'

　　b.　*John-wa *nanimo* kera-nai toashi-ta.

　　　　John-Nom anything kick-Neg throw-Past

　　　　'John didn't kick and throw anything.'

(16) a.　*Daremo* kanban-wo ker-i taosa-naka-tta.

　　　　Anyone signboard-Acc kick-L throw-Neg-Past

　　　　'No one kicked and throw the signboard.'

　　b.　**Daremo* kanban-wo kera-nai toashi-ta.

　　　　Anyone signboard kick-Neg throw-Past

　　　　'No one didn't kick and throw the signboard.'

　In the case of coordinate structures, if negation follows the first verb, it may only license an NPI in the first conjunct; if it follows the second verb, it may only license an NPI in the second conjunct. See the paradigm in (17).

(17) a.　John-wa *nanimo* kera-nai-de taosi-ta

　　　　John-Nom anything kick-Neg-Conj throw-Past

　　　　'John didn't kick anything and throw

it.'

b. John-wa kanban-wo ker-tte(mo) *nanimo* taosa-naka-tta

John-Nom signboard kick-Conj anything throw-Neg-Past

'John kicked the signboard and didn't throw anything.'

c. * John-wa kanban-wo kera-nai-de *nanimo* taosi-ta

John-Nom signboard kick-Neg-Conj anything throw-Past

b. *John-wa *nanimo* ker-tte (mo) taosa-naka-tta

John-Nom anything kick-Conj throw-Neg-Past

It is very important to bear in mind that the SVC should not be confused with the subordinate construction. Note that the subordinate marker -*node*/-*kara* cannot be deleted in Japanese in contrast to those in Korean (cf. Zubizarreta and Oh (2007: 63)). The subordinate construction contains two objects per clause and the SVC allows for only one subject.

2. The Question of Whether The Japanese SVs are Compounds or Not

Zubizarreta and Oh (2007: 39) assume both Korean and Japanese to be SVC languages. We support this position. However, there is a problem with Japanese SVCs. Namely, there is some evidence suggesting that they are compounds. The relevant phenomenon seems to follow from the head-final status of Japanese and some poorly understood

constraints on SVCs. We leave these issues for future research, merely pointing out the problems.

In this section, we review some evidence that apparently suggests that the SVs in Japanese constitute a compound. On the other hand, Zubizarreta and Oh (2007: 64ff.) provide evidence strongly suggests that SVs in Korean do not constitute a compund. Thus, a difference can be seen with regard to the status of SVs between two neighboring languages in Asia.

Firstly, in the case of a Japanese SVC whose first V is intransitive, it is not clear whether the scalar or contrastive marker -*dake* (only) and -*sae* (even) can be attached to the right of the first V and they take scope over the first V. See the contrast between (18a) and (18b).

(18) a. *John-wa douzou-ni hashiri-*sae* yor-tta.

John-Nom statue-Loc (to) run-even approach-Past

'John even approached the statue, even by running.'

b. John-wa gakkou-e hashir-tte-sae ik-tta.

John-Nom school-Loc (to) run-L-even go-Past

'John went to school, even by running.'

In the case of the Korean SVCs, the scalar or contrastive marker -*man* (only), -*to* (even) and -*num* (contrastive topic) can be attached to the right of the first V and in that case, they take scope over the first V (Zubizzaretta and Oh (2007: 65)).

(19)John-i hakkyo-ey talli-e-*to* ka-ss-ta

John-Nom school-Loc(to) run-L-even go-Past-Decl

'John went to school, even by running.'

(Zubizzaretta and Oh (2007: 65))

In the case of the Japanese SVCs, we note that if the first V is transitive, it does not seem to be the case that such scalar or contrastive markers can also take scope over V1 and its object. We illustrate this case below. Consider the following situation. John studies in the library, doing a paper and reading books. Among his studies (doing a paper and reading books), the one he avoids most is finishing a book. In the example below, -sae take scope over V1 and its object and give rise to interpretation in which John accomplished the least expected work, besides other works.

(19) *Kyou-wa John-wa repooto-wo kaku-youna koto nohokani hon-wo yomi-*sae* oer-ta.

today-Top John-Nom report-Acc write-Rel thing beside book-Acc read-even finish-Past

'Today, beside doing a paper, John even read a book and finished it.'

The SVs discussed above are in this respect identical with so-called lexical compounds, which are said to exhibit morphological integrity. Such forms do not allow delimiters or contrastive elements to intervene between verbs. The examples like the ones below are associated with an idiomatic, noncompostional meaning, and the fact that contrastive markers and delimiters cannot be attached to the first members of these forms could be ascribed to this semantic factor. Indeed, as

Zubizarreta and Oh (2007: 66) note, if the meaning of a subpart is dependent on the whole, it is not possible to generate a semantic contrast set for the subpart.

(20) a. chichi-wa ikir nokor-tta.

father-Nom (Hon) live continue-Past

'The father survived.'

b. chichi-wa ikir-*sae/*dake nokor-tta

father-Nom (Hon) live-even/only nokor-Past

3. Semantic Relations within the SVC: A Comparison with Coordinate and Subordinate Structures

Another essential property of the serial-verb construction is that the Vs it contains must be understood as denoting events that are intrinsically connected (Zubizarreta and Oh (2007: 67)). In this section, we discuss the semantic relation between the events in the Consequential SVC (CSVC) and in the Simultaneous or coevents SVC (SSVC) in Japanese SVCs.

In the case of the CSVC, the event expressed by the first V happens before the event expressed by the second V and the first event must be perceived as enabling the second event to happen (Zubizarreta and Oh (2007: 67)). Indeed, they cannot be understood as two unrelated sequential events (*ibid*.). To illustrate this point, consider the relation between the SVs in the Japanese examples below.

(21) a. John-wa ine-wo kar-i tor-tta.

John-Nom rice-Acc reap-L harvest-Past

'John cut/reaped and (then) harvested

the rice.'

   b. John-wa Mary-wo osh-i taoshi-ta

     John-Nom Mary-wo push-L throw-Past

     'John pushed and (then) threw Mary.'

   c. John-wa ropu-wo tsukam-i tor-tta.

     John-Nom rope-Acc grip-L seize-Past.

     'John gripped and (then) seized the rope.'

Zubizarreta and Oh (2007: 68) argues that this perceived ordering is pragmatic in nature. Indeed, given our knowledge of the world, it must be the case that the event "reaping rice/pushing Mary" precedes the event 'harvesting rice/throwing Mary' and the event "gripping the rope" precedes the event "seizing the rope." "Interestingly, the surface ordering of the SVs reflects this (pragmatically determined) temporal ordering (Zubizarreta and Oh (2007: 68))." The ordering of the above examples observes this condition, but the opposite ordering does not, as illustrated below.

(22) a. *John-wa ine-wo tor-i ka-tta

     John-Nom rice-Acc harvest-L reap-Past

     'John harvested and (then) cut/reaped the rice.'

   b. *John-wa Mary-wo taosh-i oshi-ta

     John-Nom Mary-wo push-L throw-Past

     'John threw and (then) pushed Mary.'

   c. ??John-wa ropu-wo tor-i tsukam-da.

     John-Nom rope-Acc seize-L grip-Past.

     'John gripped and (then) seized the rope.'

According to Zubizarreta and Oh (2007: 68), the temporal-ordering constraint seen in the SVC also applies to coordinated VPs, provided that the VPs denote temporally ordered events. This temporal ordering is indicated in the surface order of the verbs in such coordinate structures (*ibid.*). To be sure, all of the English translations given in (22) are pragmatically odd (just like the Japanese SVC counterparts).Muysken (1988) and Lee (1993) ascribe this ordering constraint to the *Temporal Iconicity Constraint* (TIC), an interface constraint that apples at the level of Phonological Form (PF).

(23) *Temporal Iconicity Constraint* (TIC)

    In an SVC, as well as in a verbal coordinate structure, if the events denoted by the Vs are sequential, the surface ordering of the Vs must reflect the temporal ordering of events. (Zubizarreta and Oh (2007: 69))

Zubizarreta and Oh (2007: 69) point out that though the verbal coordinate structures also obey the TIC, unlike the SVC, the coordinated events may be unrelated, even if temporally ordered. Indeed, "singing" and "eating" are perceived as unrelated events, and these two verbs cannot give rise to an SVC, or to an SC. See the ill-formedness of the following examples.

(24) a. John-wa tabe-te utau-tta

     John-Nom eat-Conj sing-Past

     'John ate and sang.'

   b. John-wa utau-te tabe-ta

     John-Nom sing-Conj eat-Past

     'John sang and ate.'

(25) a. *John-wa tab-e utau-tta

     John-Nom eat-L sing-Past

     'John ate and sang.'

   b. *John-wa uta-i tabe-ta

John-Nom sing-L eat-Past

'John sang and ate.'

Another instance that illustrate the intrinsic-ordering relation between the events in CSVC is provided by (26a). The SVC nature of this instance is illustrated by (26b), which involves NPI licensing. According to Zubizarreta and Oh (2007: 69), NPI licensing is a property of monoclausal structures, which differentiates SVCs from coordinate and subordinate constructions.

(26) a. Dorobo-ga (housekiten-kara) yubiwa-wo nusum-i sar-tta

Thief-Nom (jewelry shop-Loc) ring-Acc steal-L go-Past

'The thief stole the ring and (then) left (the jewelry shop).

b. Daremo (housekiten-kara) yubiwa-wo nusum-i sar-anaka-tta

Anyone (jewelry shop-Loc) ring-Acc steal-Neg-L go-Past

'No one stole the ring and (then) left (the jewelry shop).'

The semantic relation between the SVs in (26) is a consequential one. Indeed, the stealing event is perceived as intrinsically related to the leaving event, in which the former triggers the latter. Given our world knowledge, namely that robbers leave after stealing, the causal relation in the above example is conventionalized (and requires no context). This type of semantic relation between the SVs seems to be universal, given the fact that the same applies to the Korean counterpart discussed in Zubizarreta and Oh (2007: 70).

We turn next to the Japanese SSVC. In this case, the relation that the SVs entertain is that of modification, as shown below. In the example (26a), 'walking' expresses the manner of the directed-motion event denoted by *yuku-/iku-*. In (26b), 'running' expresses the manner of the (?directed-) motion event denoted by *nuker(u)-*.

(27) a. John-wa gakkou-ni arui-te ik-tta.

John-Nom school-Loc walk-L go-past.

'John went to school by walking.'

b. John-wa matsubayashi-wo kake nuker-ta.

John-Nom pinewoods-Acc run pass-Past

'John passed the pinewoods by running.'

Zubizarreta and Oh (2007: 71) argues that when the relation between the SVs expresses manner or means, the event denoted by V1 and V2 are temporally simultaneous and therefore the TIC applies. The ordering between the SVs in this case is determined by the syntax (*ibid.*). In effect, in Japanese verbal modifiers are left adjoined to the verbal structure that they modify. The ill-formedness of the Japanese examples in (28) is comparable to the ill-formedness of their English counterparts (given below the Japanese examples).

(28) a. *John-wa sokonashi-ido-ni ik-tte arui-ta.

John-Nom bottomless well-Loc go walk-L -past.

'John walked by going to the bottomless well.'

b. *John-wa matsubayashi-wo nuke kake-ta.

John-Nom pinewoods-Acc pass run-Past
'John ran by passing the pinewoods.'

To summarize, in this section, we have made the following points, which overlap what Zubizarreta and Oh (2007: 72) argue for Korean data:

(29) a. In Japanese as well as in Korean, the semantic relations between the subevents encoded by the SVC may be of two kinds: a consequential relation (CSVC) or manner relation (SSVC). Thus, the SVC in Japanese further confirms the view of Zubizarreta and Oh (2007: 72) that whether or not we can establish such semantic relations between the two SVs depends on our cognitive understanding of these relations, our world knowledge, and the discourse context.

b. The SVC is semantically distinct from the CC in Japanese as well. The coordinated events might be sequentially ordered but semantically unrelated not only in Korean but also in Japanese.

c. The Japanese SVC expresses meanings that are similar to some of the meanings expressed by the SC. However, the SVC expresses only a subset of the meanings that the SC can express in Japanese, too.

d. The Temporal Iconicity Condition determines the surface ordering of SVs (and coordinated VPs) when the events that these Vs denote are temporally ordered in Japanese as well.

e. Zubizarreta and Oh (2007: 39) assume both Korean and Japanese to be SVC languages. We support this position. Zubizarreta and Oh (2007: 64ff.) provide evidence strongly suggests that SVs in Korean do not constitute a compound. However, there is some evidence that apparently suggests that the SVs in Japanese constitute a compound. So it seems that there is a difference between two neighboring Asian languages with regard to the status of SVCs. We suggest that the relevant phenomenon seem to follow from the head-final status of Japanese and some poorly understood constraints on SVCs. We leave these issues for future research, merely pointing out the problems.

4. The Structural Analysis of the Japanese SVCs

According to Zubizarreta and Oh (2007: 33, 72), the SVC parameter is a syntactic one. Zubizarreta and Oh (2007: 72) argues that a language generates SVC structures when it utilize one or both of the following Generalized Transformations (GTs):

(30) a. Merge a verbal l-structure with the head of another verbal l-structure.

b. Merge a verbal lexical item with the head of a verbal l-structure. (Zubizarreta and Oh (2007: 72))
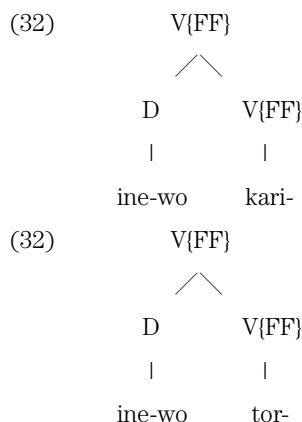
According to Zubizarreta and Oh (2007:

39), Japanese and Korean only have two types of SVC pattern, namely the CSVC ("buy-book-read") and the SVC("swim-go"), lacking in the third pattern the RSVC ("push-tree-fall"). In order to capture generalization about two languages, we assume that Japanese make use of the GT in (30a) to generate CSVCs and SVC on a par with Korean.

(31) John-wa ine-wo kari tor-tta
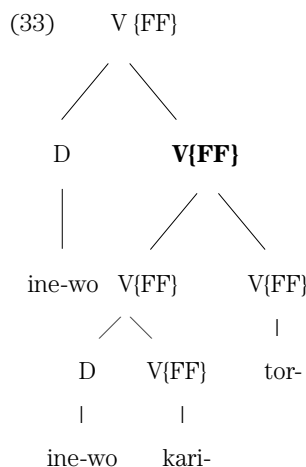
John-Nom rice-Acc reap harvest-Past

'John cut/reap and (then) harvested the rice.'

The building blocks of this sentence are the l-structure of *kari-* 'reap' and *toru-* 'harvest,' given in (32) and (33), respectively. As usual, the lexical items are to be understood as an abbreviated notation for a bundle of features: the phonological (or P-) features, Conceptual pointer (or C-feature), categorial feature (if any), and the formal features (or FF). The structures below are obtained by the operation Merge to V (*kari-* or *toru-*) and D (*ine-wo*). In agreement with Baker and Stewart (1999), we assume that when constituents A and B are merged, the resulting node inherits from the head only those features that are relevant for the syntactic composition of phrases. To put it in another way, the label of the resulting constituent consists uniquely of syntactic features. In the case under discussion, these are the categorial feature V and the FF, which involve at least the functional feature Tense.

(32)　　　　V{FF}

```
              V{FF}
             /  \
            D    V{FF}
            |     |
          ine-wo kari-
```

(32)　　　　V{FF}

```
              V{FF}
             /  \
            D    V{FF}
            |     |
          ine-wo tor-
```
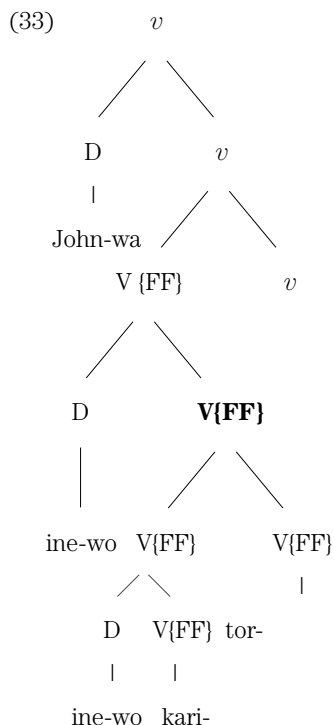
The GT in (30a) merges (32) with the head of (33), yielding the structure (34).

With Zubizarreta and Oh (2007: 73), we might assume that the V created by the GT (marked in bold below) is invisible with respect to predicate-argument strucutre relations. Thus, the original predicate-argument relations are retained in the SVC. On the other hand, the V created by GT might be assumed to encode the semantic relation that holds between the events denoted by its two daughters, [v *ine-wo kari-*] and [v *tor-*].

(33)　　V {FF}

```
          V {FF}
         /    \
        /      \
       D       V{FF}
       |       /  \
     ine-wo V{FF}  V{FF}
           /  \     |
          D  V{FF} tor-
          |    |
        ine-wo kari-
```

By convention, the structure in (32) is merged with little *v*, which introduces the external argument, yielding the extended

l-structure in (33) (cf. Chomsky (1995:315)).

(33)
```
                v
               / \
              /   \
             D     v
             |    / \
          John-wa/   \
            V {FF}     v
               / \
              /   \
             D    V{FF}
             |    / \
             |   /   \
         ine-wo V{FF}  V{FF}
               / \       |
              D  V{FF}  tor-
              |    |
          ine-wo  kari-
```

The structure in (33) is then merged with clausal functional projection, such as Polarity, Asp, and Tense. We may assume that Case in Japanese is checked via the operation "Agree." In the structure above, Case is checked via Agree, which establishes an agreement relation between T and the Nom DP (*John-wa*) and between Asp and the Acc DP (*ine-wo*). But as we have seen, scrambling is pervasive in Japanese; therefore, these DPs may be scramble out of the verbal phrase by a subsequent movement operation.

As pointed out by Baker and Stewart (1999), to the extent that the two Vs in (33) share the same syntactic features, either V can function as the head of the structure. But in contrast to Baker and Stewart (1999), we do not conclude that the structure is biheaded. Instead, with Zubizarreta and Oh (2007: 74), we assume a relative interpretation of headness – namely, a category is interpreted as the head of the structure with regard to a certain computation. Consider the issue of morphosynactic headedness in the spirit of Zubizarreta and Oh (2007: 74). The question is which of the two Vs is computed as morphosyntactic head. By Minimality, the V with P-feature that is structurally closer to T (that is, *toru-*) will be attracted to T, and tense will then be morphophonologically realized on that V. Consequently, in the Japanese SVC, V2 (or the last V) functions as the morphosyntactic head of the clause.

Let us move on to the logical relation between the two events introduced by V1 and V2. In the Japanese SVC, the relation is consequential one. That is, we may accept the assumption of Zubizarreta and Oh (2007: 75):

(34) In CSVC, the event denoted by V1 is a necessary condition for V2 to take place.

(Zubizarreta and Oh (2007: 75))

Thus, contrary to what the English translation suggests, (31) is associated with the meaning in (35).

(35) John harvested the rice → John reaped the rice

Endorsing the view that "the semantics is compositionally read off the syntactic structure" (Zubizaretta and Oh (2007: 75)), the meaning stated in (35) must be structurally encoded. In the Japanese SVC, there are no conjunctions, but it is reasonable to assume that the relation between the two Vs is structurally encoded by the V node

introduced by the GT, that is, the V in boldface in (33). Therefore, the semantic information {V1←V2} is included in the node in boldface in (33), which should be elaborated as the following in the spirit of (Zubizarreta and Oh (2007: 75)):

(36) V, FF, {V1 ← V2}

(Zubizarreta and Oh (2007: 75))

The consequential relation described in (34) is similar to the familiar cause-result relation. Since typically the result is subordinate to the cause at the VP level in Japanese as well, it is reasonable to accept the assumption of Zubizarreta and Oh (2007: 75) that

(36) In CSVC, V1 functions semantically as the matrix event and V2 as subordinate event.　(Zubizarreta and Oh (2007: 75))

Some evidence for the claim that (36) applies to the Japanese CSVC, is provided by adverb modification. Degree adverbs (*mattaku* 'quite,' 'very'; *kanzenni* 'completely' ; *shidaini* 'gradually'), temporal adverbs (*shibashiba* 'frequently'), manner adverbs (*yukkurito* 'slowly'; *hayaku* 'quickly') are typical VP adverbs in Japanese. Intriguingly, in the case of the Japanese CSVC, these unambiguously modify the first verb. This is indeed anticipated if the first V is semantically the matrix event. The following examples indicate this point. The verb *neji(ru)-* 'twist' can be modified by *sidaini*, but not the verb *kir(u)-* 'cut' because it is [-durative]; see (37). When these two verbs are combined into an SVC, modification by *sidaini* is possible, as illustrated in (38). The SVC status of such sentence is confirmed by the NPI test in (39).

Note that the SVC in Japanese, unlike that in Korean, negation can only be attached to the right of the second V.

(37) a. John-wa　mizuame-wo　sidaini neji-tta.
John-Nom starch syrup-Acc　gradually twist-Past

　b. *John-wa　mizuame-wo　sidaini kir-tta.
John-Nom　starch　syrup-Acc gradually　cut-Past

(38) John-wa　mizuame-wo　　sidaini　　neji kir-tta.
John-Nom starch syrup-Acc　　gradually　twist cut-Past
'John gradually twisted and cut the starch syrup.'

(39) Dare-mo　　mizuame-wo　　sidaini　　neji kir-anaka-tta.
Anyone-Nom starch syrup-Acc　gradually twist cut-Neg-Past
'No one gradually twisted and cut (off) the starch syrup.'

The examples in (41) illustrate the case in which the adverb *isoide* 'quickly' unambiguously modifies the first verb of the SVC, despite the fact that either the first verb (*fum-* 'stamp') or the second verb (*tsubusu-*'crush') can be individually modified by this adverb; see (40). Indeed, (ii) is not a possible English translatin of the example in (41).

(40) a. John-wa　hako-wo　isoide　fun-da.
John-Nom box-Acc　quickly satmp-Past
'John quickly stamped a box.'

　b. John-wa　hako-wo　isoide tsubus-ita.
John-Nom box-Acc　quickly crush-Past
'John quickly crushed a box.'

(41) John-wa hako-wo isoide fum-i tsubus-ita.

John-Nom box-Acc quickly satmp-L crush-Past

  (i) 'John quickly stamped a box and then crushed it.'

  (ii) *'John stamped a box and then quickly crushed it.'

The case of the SSVC in Japanese, which we will discuss below, is different from the CSVC with regard to the semantic composition of the two verbs. In the case of the SSVC in Japanese, V2 functions both as the morphosyntactic head and as the semantic head of the SVC. More precisely, the SSVC in Japanaese has the same semantic composition of the two verbs as that of the SSVC in Korean,

(42) In both Japanese and Korean, V1 and V2 are simultaneous events, where V2 denotes the matrix event and V1 modifies V2. (N.B. Zubizarreta and Oh (2007: 76))

Adverb modification provides that V2 is indeed the semantic head in SSVC in Japanese as well. As shown in (43), the adverb *kanzenni* 'completely' is compatible with the SVC *hashiri-nuke-ta* 'run cross,' despite the fact that the first V is not compatible with such an adverb. Only the second V is; see (45).

(43) John-wa matubayashi-wo kanzenni hasir-i nuke-ta.

John-Nom pinewoods-Acc completely run-L cross-Past

'John completely crossed the pinewoods by running.'

(44) a. *John-wa kanzenni hashir-tta.

    John-Nom completely run-Past

  b. John-wa matsubayashi-wo kanzenni nuke-ta.

    John-Nom pinewoods-Acc completely cross-Past

    'John completely crossed the pinewoods.'

5. Conclusion

To conclude, in the Japanese SVC, V2 (or the last V) is consistently interpreted as the morphosyntactic head. On the other hand, there is ambiguity as to which V functions as denoting the matrix event, which is the case not only in Japanese but also in Korean (for the Korean counterparts, see Zubizarreta and Oh (2007)). In the case of the Japanese CSVC, V1 is interpreted as denoting matrix event and V2 is interpreted as denoting the subordinating event. In the case of the Japanese SSVC, V2 is interpreted as denoting the matrix event and V1 is interpreted as the modifier of the matrix event.

Zubizarreta and Oh (2007: 77) mentioned that the GT in (30b) generates the Resultative SVC (RSVC). But this type of SVC is excluded both in Korean and Japanese because they infringe the Temporal Iconicity Condition (TIC).

One of the remaining problems is that there is some evidence that Japanese adopts Compound Rule in addition to the GT in (30b). We will leave this problem for future research.

(45) V+V (Compounding Rule)

Merge two lexical categories of the same categorial type.

(Zubizarreta and Oh (2007: 45))

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