

Argument Composition in Korean Serial Verb Constructions*

August 7, 2010

Abstract

The so-called serial verb construction (SVC) is a complex predicate structure consisting of two or more verbal heads but denotes one single event. This paper discusses the grammatical properties of Korean SVCs and provides a lexicalist, construction-based analysis couched in the typed-feature structure grammar, HPSG. In particular, we identify four different types of the SVCs in Korean, each of which has its own idiosyncrasies while sharing general properties with the others, and show that the argument composition in the SVCs happens in syntax, controlled by constructional constraints.

Keywords: serial verb construction, sequential, manner, direction, construction, HPSG

1 Introduction

Korean is one of the languages that employ the so-called serial verb construction (SVC) in which more than one verb occurs without any specific coordination or subordination markings (cf. Lee 1992, Chung 1994, Lee 2002, Chung and Kim 2008):

- (1) a. Mia-ka hakkyo-ey kel-e ka-ass-ta
 Mia-NOM school-to walk-COMP go-PAST-DECL
 ‘Mia walked to school.’
- b. Mia-ka cwul-ul cap-a tangki-ess-ta
 Mia-NOM rope-ACC draw-COMP pull-PAST-DECL
 ‘Mia pulled a rope, drawing it.’

*Many thanks go to the reviewers of this journal for comments and suggestions. I also thank for Sanghoun Song for the help with extracting data from the Sejong Corpus. This work was supported by Kyung Hee University on sabbatical leave in 2009.

Both sentences here, though including two serial verbs with their own predicate relations, semantically represent only a single event. These sentences display the canonical grammatical properties of SVCs in that the two successive verbs behave like a complex predicate, sharing one tense and subject value, and even the object value as in (1b). The mono-clausal complex predicate property can be further observed by the possibility of passivizing SVCs. For example, (1b) can be passivized as following:

- (2) cwul-i [cap-a tangki-e] ci-ess-ta
 rope-NOM draw-COMP pull-COMP become-PAST-DECL
 ‘The rope was pulled, being drawn.’

The sentence (2) is a syntactic passive of (1b). The passive auxiliary *ci-*, which forms a productive syntactic passive, combines with the serial verbs and yields the passive sentence as given here.¹ The simplest analysis for this would then be to assume the two verbs here form a single predicate to which the passivization is applied.

The generation of such Korean SVCs is quite productive as attested by the corpus examples of the verb *mek-ta* ‘eat’:

- (3) *nanwu-e mek-ta* ‘divide and eat’, *kkulhi-e mek-ta* ‘boil and eat’, *mandul-e mek-ta* ‘make and eat’, *cap-a mek-ta* ‘catch and eat’, *cip-e mek-ta* ‘pick up and eat’, *ssip-e mek-ta* ‘chew and eat’, *kwu-e mek-ta* ‘broil and eat’, *ppal-a mek-ta* ‘suck and eat’, etc.

The examples, extracted from the Sejong POS-tagged Corpus, show us that the activity verb *mek-ta* ‘eat’ can combine with various types of verbs, forming an SVC.² Such productivity implies that the SVC is a grammatical process that the language employs.

In this paper, we will try to explore the syntactic and semantic properties of the Korean SVCs and identify four different types of Korean SVCs. Given these basic four types, we provide a formal analysis that can generate these Korean SVCs.

2 Grammatical Properties of the SVCs

2.1 Syntactic Headedness

As noted, one main property of the Korean SVCs is that each SVC sentence has only one tense, aspect, and mood value realized on the final verb (Lee 1992, Chung 1994, Chung and Kim 2008, others). The appearance of this value on the first verb is thus not licensed:

¹See Kim (2004) for the treatment of such syntactic passives in Korean.

²The Sejong Corpus, released by the National Institute of the Korean Language, is a balanced corpus consisting of about 12 million words with 311,048 sentences.

- (4) a. Mia-ka sayngsen-ul kwu-(*ess)-e mek-ess-ta
 Mia-NOM fish-ACC roast-PAST-COMP eat-PAST-DECL
 ‘Mia roasted fish and ate it.’
- b. Mia-ka ttwi-(*ess)-e ka-ass-ta
 Mia-NOM run-PAST-COMP go-PAST-DECL
 ‘Mia left, running.’

Honorification information, which canonically surfaces in the subject and verb together as an agreement in the language, also appears only on the final verb:

- (5) sensayng-nim-i Chelswu-lul tolli-(*si)-e
 teacher-HON-NOM Chelswu-ACC turn-HON-COMP
 ponay-si-ess-ta
 send-HON-PAST-DECL
 ‘The teacher sent Chelswu back.’

These facts support the idea that the final verb functions as the syntactic head.

The following question is then what kind of verbs can be combined in the SVC. For this purpose, we have performed a corpus search and extracted VV sequence verbs from the Sejong POS-tagged Corpus. Depending on the transitivity of the two verbs (intransitive, transitive, and ditransitive), we classified the extracted VV (called V1 and V2) sequence instances as following:³

(6) Frequency of VV Sequences by Transitivity

V1	V2	# of type	# of token	Percentage	Examples
intran	intran	3566	14658	32.07%	kel-e ka-ta ‘go on foot’
intran	tran	1794	5217	11.41%	ttwi-e nem-ta ‘jump over’
intran	ditran	86	180	0.39%	nayli-e pat-ta ‘download’
tran	intran	2501	9651	21.11%	cip-e ka-ta ‘pick up and go’
tran	tran	3902	14499	31.72%	cap-a tangki-ta ‘catch and draw’
tran	ditran	142	359	0.79%	cip-e cwu-ta ‘pick up and give’
ditran	intran	82	350	0.77%	ponay-e o-ta ‘send to me’
ditran	tran	127	756	1.65%	pat-a mek-ta ‘receive’
ditran	ditran	6	43	0.09%	pat-a kalochay-ta ‘usurp’
sum		12206	45713	100.00%	

The table shows us that the most frequent (or natural) combinations are between transitive and intransitive verbs. For example, the combinations, intransitive + intransitive/transitive and transitive + transitive/intransitive, cover almost 96% of the corpus examples we have found. The corpus search has also shown that since the SVCs describe an event or process, rather than a state, stative (or adjectival) verbs do not appear in the constructions.

³There are more than three verb types in terms of argumenthood, but for simplicity, we introduce only these three types.

2.2 Argument Sharing and Composition

As noted earlier, one main characteristic of the SVCs is that the succession of multiple verbs behaves like a complex predicate with mono-clausal properties (cf. Baker 1991). Korean SVCs are no exception (cf. Chung 1994, Chung and Kim 2008). For example, we can observe that only one subject or one object is required though there are more than one verb:

- (7) a. Mia-ka (*Chelswu-ka) hakkyo-ey kel-e ka-ass-ta
Mia-NOM Chelswu-NOM school-to walk-COMP go-PAST-DECL
'Mia walked to school.'
- b. Mia-ka (*koki-lul) sayngsen-ul kwuw-e mek-ess-ta
Mia-NOM meat-ACC fish-ACC roast-COMP eat-PAST-DECL
'Mia roasted fish and ate it.'

The subject *Mia-ka* in (7a) is shared by the first verb *kel-e* 'walk' and the second one *ka-ass-ta* 'go'. Meanwhile, in (7b), the two verbs 'roast' and 'eat' share the object 'fish'. Unlike this object sharing example, the object in the SVC can also be linked only to one of the two verbs:

- (8) Chelswu-ka Mia-lul hakkyo-ey chac-a ka-ass-ta.
Chelswu-NOM Mia-ACC school-at look.for-COMP go-PAST-DECL
'Chelswu went to school to look for Mia.'

In this example, the object *Mia* is the argument of the first verb *chac-a* only, whereas the locative argument *hakkyo-ey* is selected only by the final verb 'go'. Unlike (8), the object can be selected by the final verb too:

- (9) a. Mia-ka kang-ul hyeemchi-e kenne-ess-ta
Mia-NOM river-ACC swim-COMP cross-PAST-DECL
'Mia crossed the river, swimming.'
- b. Mia-ka Chelswu-lul toli-e ponay-ess-ta.
Mia-NOM Chelswu-ACC turn-COMP send-PAST-DECL
'Mia sent Chelswu back.'

In both (9a) and (9b), it is the final verb that selects the object *kang-ul* 'river-ACC' and *Chelswu-lul* 'Chelswu-ACC', respectively.

In sum, the final verb carries tense, aspect, and mood information, implying that it is the locus of the morphosyntactic properties for the serial verbs. In terms of argument sharing, the subject is always shared. When the two verbs both require an object, they need to share the object. However, it is also possible for the object or non-object arguments to be selected by one of the two verbs.

3 Types of Serial Verb Constructions

3.1 Three Main Subconstructions

As noted earlier, the SVC describes what can be conceptualized as one event while each verb in the construction refers to subevents. These subevents are tightly connected to each other. In terms of the eventual meaning or relation between the two verbs, the Korean SVCs can be classified at least into three major types: sequential, manner, and direction:

- (10) a. Mia-ka sayngsen-ul kwuw-e mek-ess-ta. (SSVC)
Mia-NOM fish-ACC roast-COMP eat-PAST-DECL
'Mia roasted fish and then ate it.'
- b. Mia-ka hakkyo-ey kel-e ka-ass-ta. (MSVC)
Mia-NOM school-to walk-COMP go-PAST-DECL
'Mia went to school, walking.'
- c. Mia-ka Chelswu-lul ccoch-a nay-ess-ta. (DSVC)
Mia-NOM Chelswu-ACC chase-COMP take.out-PAST-DECL
'Mia drove Chelswu out.'

In sequential SVCs (SSVC) like (10a), the two subevents are related sequentially and further the first subevent must precede the second subevent. Such a precedence relationship is inferred from the world knowledge: it is impossible for one to eat something and then roast it. Meanwhile, in both manner SVCs (MSVC) and direction SVCs (DSVC), the two subevents occur simultaneously. In the MSVC, the first subevent canonically expresses manner or means whereas in the DSVC, the first one denotes the direction causing the second subevent. That is, in both cases, the action of the final verb is a consequence of the action denoted by the first one.

In terms of semantic composition, the meaning of the SSVCs is rather compositional, only adding the sequential relation between the two subevents. That of the MSVCs is also similar, in the sense that the first subevent describes how the second subevent is performed. Meanwhile, the meaning composition of the DSVC in Korean seems to be slightly different in the sense that the first subevent appears to function as the main event while the final subevent functions as a second predicate denoting a resultant state of the final event. In this sense, the first verb in the DSVCs functions as the semantic head (cf. Lee 2002, Zubizarreta and Oh 2007).

These three types behave differently in terms of morpho-syntactic properties too. Consider the addition of the conjunctive marker *se*, adding the sequential meaning of *and then* or the manner/reason (cf. Lee 1992, Sohn 1999):

- (11) a. Mia-ka sayngsen-ul kwuw-e-se mek-ess-ta. (SSVC)
Mia-NOM fish-ACC roast-COMP-CONJ eat-PAST-DECL
'Mia roasted fish and then ate it.'

- b. Mia-ka hakkyo-ey kel-e-se ka-ass-ta. (MSVC)
Mia-NOM school-to walk-COMP-CONJ go-PAST-DECL
'Mia went to school, walking.'
- c. Mia-ka Chelswu-lul ccoch-a>(*se) nay-ess-ta. (DSVC)
Mia-NOM Chelswu-ACC chase-COMP take.out-PAST-DECL
'Mia drove Chelswu out.'

As illustrated here, the first verb in the SSVC and MSVC can be additionally marked with the adverbial marker *se*, but this is not possible in the DSVC. The possibility of modification also differentiates the three:

- (12) a. Mia-ka sayngsen-ul chenchhenhi kwuw-e
Mia-NOM fish-ACC slowly roast-COMP
mek-ess-ta.(SSVC)
eat-PAST-DECL
'Mia slowly roasted fish and then ate it.'
- b. Mia-ka hakkyo-ey chenchhenhi kel-e ka-ass-ta. (MSVC)
Mia-NOM school-to slowly walk-COMP go-PAST-DECL
'Mia went to school, slowly walking.'
- c. Mia-ka Chelswu-lul chenchhenhi ccoch-a
Mia-NOM Chelswu-ACC slowly chase-COMP
nay-ess-ta.(DSVC)
take.out-PAST-DECL
'Mia slowly drove Chelswu out.'

As indicated by the English translation, the adverb in the SSVC and MSVC modifies the first verb whereas the one in the DSVC scopes over the final verb or the whole event. We also note that they are different in the contiguity of components. The serial verbs in the DSVC do not allow any other constituents to go in between them, while those in the other two types allow this:

- (13) a. Mia-ka sayngsen-ul chenchhenhi kwuw-e ppali
Mia-NOM fish-ACC slowly roast-COMP fast
mek-ess-ta.(SSVC)
eat-PAST-DECL
'Mia slowly roasted fish and then ate it fast.'
- b. ?Mia-ka hakkyo-ey chenchhenhi kel-e ppali
Mia-NOM school-to slowly walk-COMP fast
ka-ass-ta.(MSVC)
go-PAST-DECL
'Mia went to school fast, slowly walking.'

- c. *Mia-ka Chelswu-lul chenchhenhi ccoch-a ppali
 Mia-NOM Chelswu-ACC slowly chase-COMP fast
 nay-ess-ta.(DSVC)
 take.out-PAST-DECL
 ‘(lit.) Mia slowly drove Chelswu out fast.’

These observations support the idea that we need to differentiate these three in terms of their lexical semantics, meaning composition, and morphosyntactic properties.

3.2 Idiomatic SVCs

Note that in addition to these three, we have one more type in which the V-V complex has an idiomatic meaning. Consider the following examples:

- (14) a. Mia-ka yaksok-ul kka-a mek-ess-ta.
 Mia-NOM promise-ACC peel-COMP eat-PAST-DECL
 ‘Mia forgot her promise.’
 b. Mia-ka Chelswu-ul kwu-e salm-ass-ta.
 Mia-NOM Chelswu-ACC roast-COMP boil-PAST-DECL
 ‘Mia coaxed Chelswu.’

The meaning of the SVCs here is non-compositional, but purely idiomatic. In addition, the two verbs here are co-dependent, and thus neither one can license the argument by itself. This implies that such an idiomatic SVC is formed in the lexicon.⁴ This idiomatic SVC differs from the AUX construction or the genuine SVC in that delimiters such as *-man* ‘only’ or *-to* ‘also’ cannot occur between the two verbs:

- (15) a. *Mia-ka yaksok-ul kka-a-man/to mek-ess-ta.
 Mia-NOM promise-ACC peel-COMP-only/too eat-PAST-DECL
 ‘Mia forgot her promise.’
 b. Chelswu-ka sakwa-ka/lul mek-ko-man/to
 Chelswu-NOM apple-NOM/ACC eat-COMP-only/too
 siph-ess-ta
 would.like-PAST-DECL
 ‘Chelswu would like to eat apples.’
 (16) a. ?Mia-ka Chelswu-ul chac-a-man nase-ess-ta.
 Mia-NOM Chelswu-ACC look.for-COMP-only go.out-PAST-DECL
 ‘Mia went out, only looking for Chelswu.’

⁴When only one of the verbs licenses its argument, we have a weird literal meaning.

- b. ?Mia-ka kang-ul hyeemchi-e-man kenne-ess-ta.
 Mia-NOM river-ACC swim-COMP-only cross-PAST-DECL
 'Mia crossed the river, only swimming.'

As illustrated here, the idiomatic SVC does not allow the attachment of delimiters to the first verb, while such a process is a natural one in the other SVCs.

As we have seen here, these subconstructions of the Korean SVCs share some main properties, but at the same time have their own semantic and pragmatic properties, let alone morpho-syntactic ones. This implies that a proper grammar needs to recognize these subconstructions at a certain grammatical level.

4 Grammar rules and constructional constraints

The Korean Phrase Structure Grammar (KPSG) is a constraint-based grammar aiming at building a computationally feasible grammar with a comprehensive coverage (see Kim and Yang 2004b, Kim 2004). In the grammar, all the linguistic expressions are types of *sign* which in turn has *lex-sign* (lexical sign) and *syn-sign* (syntactic sign) as its subtypes. Following the traditional Korean grammar, the KPSG takes the basic lexical categories of the grammar (*lex-sign*) to include *verbal*, *nominal*, *adverbial*, and *adnominal* as its subtypes which again are subclassified according to their properties. For instance, the *verbal* category includes verbs and adjectives.⁵

As for the combination of such lexical expressions to form a bigger constituent, the KPSG posits a small set of well-formed syntactic combination rules such as Head-Subject Rule ($XP \rightarrow ZP X'$), Head-Complement Rule ($XP \rightarrow YP X$), and Head-Modifier Rule ($XP \rightarrow \text{Mod}, XP$) as given in the following:

- (17) a. Head-Subject Rule:
 $XP[hd-subj-cx] \rightarrow \boxed{1}, H[SUBJ \langle \boxed{1} \rangle]$
- b. Head-Complement Rule:
 $XP[hd-comp-cx] \rightarrow \boxed{1}, H[COMPS \langle \dots, \boxed{1}, \dots \rangle]$
- c. Head-Modifier Rule:
 $XP[hd-mod-cx] \rightarrow [\text{MOD } \langle \boxed{1} \rangle], \boxed{1}H$

These simple rules can license major phrasal constructions in the language. The Head-Subject Rule, generating a head-subject-construction (*hd-subj-cx*), allows a VP to combine with its subject. The Head-Complement Rule ensures a head to combine with one of its COMPS (complements) elements, forming a head-complement-construction (*hd-comp-cx*).⁶ The Head-Modifier Rule allows a head

⁵See Kim (2004) for further details.

⁶By constraining a head to combine with one complement at once, the grammar thus allows no ternary structures but only binary structures for the language. One main consequence of this binary structure comes from sentence internal scrambling. See Kim (2004) for further details.

to form a well-formed phrase with an adverbial element that modifies the head, resulting in a head-modifier construction (*hd-mod-cx*).⁷ In addition to these basic grammar rules, the KPSG assumes the following grammar rule to license the combination of two lexical expressions:⁸

- (18) Head-Lexical-Cx:

$$[hd\text{-}lex\text{-}cx] \rightarrow [LEX +], H[LEX +]$$

This grammar rule basically licenses the combination of two verbs as in the following:⁹

- (19) a. [[cal] [mek-ta]] (Adv + V)
 well eat-DECL('eat well')
- b. [[mek-ko] [siph-ta]] (Main V + Aux)
 eat-COMP would.like-DECL('would like to eat')
- c. [[cap-a] [tangki-ta]] (V + V)
 catch-COMP pull-DECL('catch and pull')

In (19a), the lexical adverb occurring only with a verb (not a VP) combines with the main verb whereas in (19b), the main verb forms a complex predicate with the auxiliary verb. (19c) is a SVC where two lexical verbs are combined.

The grammar requires no further rule to generate examples like (19a). Lexical adverbs like *cal*, unlike phrasal adverbs like *hangsang* 'always', are lexically specified as following:

- (20)
$$\left[\begin{array}{c} \text{HEAD} \left[\begin{array}{c} \text{POS } adv \\ \text{LEX } + \end{array} \right] \\ \text{MOD } \langle V[LEX +] \rangle \end{array} \right]$$

The Head-Lexical Rule will then license the combination of the adverb *cal* 'well' with any verbal lexical element, but not with a phrasal one:¹⁰

- (21) *John-i [cal _{vp}[pap-ul mek-ess-ta]]
 John-NOM well meal-ACC eat-PAST-DECL
 '(Int.) John ate the meal well.'

⁷Note that the grammar rules here place no restriction on the SUBJ value: this allows the head to combine with the subject before combining with a complement. One great advantage of this is to allow sentential internal scrambling with no further operation or mechanism. See Kim and Yang (2004a) for details.

⁸This rule, licensing the combination of two lexical elements, is thus different from a lexical compounding process.

⁹See Kim (2004) and references cited in for detailed discussion of the need for the Head-Lexical Rule in the Korean grammar.

¹⁰See Kim (2004) for further details.

The generation of auxiliary constructions requires a further specification. In the auxiliary construction also, only the final verb carries tense and mood verb, and the first main verb is an obligatory lexical element. In addition, no element can intervene between the main and auxiliary verb.¹¹

- (22) a. Chelswu-ka sakwa-ka/lul mek-ko siph-ess-ta
Chelswu-NOM apple-NOM/ACC eat-COMP would.like-PAST-DECL
'Chelswu would like to eat apples.'
- b. *Chelswu-ka sakwa-ka/lul siph-ess-ta
Chelswu-NOM apple-NOM/ACC would.like-PAST-DECL
- c. *Chelswu-ka sakwa-ka/lul mek-ko cal siph-ess-ta
Chelswu-NOM apple-NOM/ACC eat-COMP well would.like-PAST-DECL

These properties give us enough reason to treat the main verb as the argument of the auxiliary verb.¹² In addition, as noted in Kim and Yang (2004a), the auxiliary verb will compose only the arguments of the main verb. The following construction rule, a subtype of the head-lexical construction, reflects this kind of argument composition (cf. Kim and Yang 2004b):

(23) Head-AUX-Cx:

$$\left[\begin{array}{c} hd-aux-cx \\ COMPS \langle \bar{A} \rangle \end{array} \right] \rightarrow \left[\begin{array}{c} \text{SUBJ } \langle \bar{1} \rangle \\ COMPS \langle \bar{A} \rangle \end{array} \right], H \left[\begin{array}{c} \text{SUBJ } \langle \bar{1} \rangle \\ \text{AUX} + \\ COMPS \langle \bar{2} \rangle \end{array} \right]$$

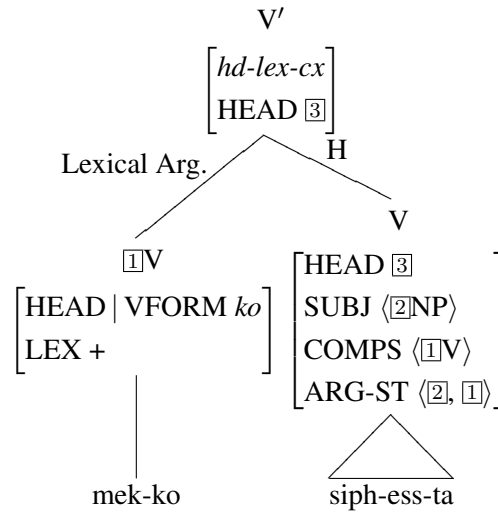
The constructional rule specifies that the auxiliary head combines with a lexical complement, and that to the resulting combination the COMPS value (\bar{A}) of this lexical complement is composed.¹³ This system, interacting with appropriate lexical entries for auxiliary verbs, will allow the following structure:

¹¹The accusative object in this auxiliary construction can alternatively carry nominative case too. See Kim (2004) for details.

¹²As pointed out by a reviewer, verbs are generally regarded as a predicate rather than as an argument. The notion of argument here is rather a syntactic one in terms of subcategorization, to put it more precisely.

¹³This kind of argument composition is different from the traditional analyses mainly in that the composition happens in syntax rather than in the lexicon.

(24)



The auxiliary verb *siphessta* ‘would-like’ takes two arguments: one realized as subject and the other as a complement. When the auxiliary combines with the main verb, the result forms a *hd-lex-ph* and inherits the main verb’s COMPS value in accordance with the Head-AUX-Cx in (23).¹⁴

Just like auxiliary constructions, the genuine SVC does not allow an adverbial to intervene between the two serial verbs as illustrated in (25a).¹⁵ The AUX construction also does not allow such an intervention as in (25b):

- (25) a. *Mia-ka chayk-ul chiwu-e kkaykkushi
 Mia-NOM book-ACC clear-COMP neatly
 noh-ass-ta.
 be.in.completion.of-PAST-DECL
 ‘Mia has neatly cleared the book.’
- b. *Mia-ka sakwa-lul mek-e hanpen po-ass-ta.
 Mia-NOM apple-ACC eat-COMP once try-PAST-DECL
 ‘Mia tried eating an apple once.’

One clear difference between the AUX and SVC construction is that in the SVC, the first verb is optional even though the described event may be different:

- (26) Mia-ka lopu-lul (kkul-e) tangki-ess-ta.
 Mia-NOM rope-ACC draw-COMP pull-PAST-DECL
 ‘Mia pulled a rope, drawing it.’

¹⁴As pointed out by an anonymous reviewer, the resulting combination is not purely lexical, but phrasal. The present analysis does not hinge on the distinction between lexical and phrasal. The grammar we adopt here rather focuses on what are the accepted well-formed combinations or expressions in the language.

¹⁵When there is an adverb between the two verbs, we take it as a simple VP modifier construction. See Kim (2004).

The possibility of having an intervening element between the two consecutive verbs and of leaving out the first verb makes us hard to take the first verb as the argument of the final one.

In dealing with the generation of SVCs, another thing to note is that the verbs participating in the SVC are non-stative (activity) verbs. As we have seen, the verbs in the SVC participate in sequential, manner, or directional events which stative verbs are hard to function as. This constraint applies to both verbs in the SVC:

- (27) a. *cap-a ppalu-ta/*ppalu-a mek-ess-ta
 catch-COMP fast-DECL/fast-COMP eat-PAST-DECL
- b. *kel-e apu-ta/*himitul-e ka-ass-ta
 walk-COMP sick-decl/difficult-COMP go-PAST-DECL
- c. *ccoch-a apu-ta/*apu-a nay-ss-ta
 chase-COMP sick-DECL/sick-COMP take.out-PAST-DECL

One further issue to be noted here is how to compose the meaning of the SVCs. The SVC is different from the others in the sense that the two serial verbs are in a special relation. As we have seen earlier, for example, in the SSVCs, there is a sequential relation whereas in the MSVCs, the two subevents occur at the same time, but the first one denotes how the action (manner) denoted by the final verb is performed. The DSVCs are more complicated since the first verb functions as the semantic head whereas the second one is a syntactic head. These relations are rather pragmatic or culturally-related. As noted by Kroeger (2004), different languages impose different restrictions on what specific combinations of verbs are permissible, and these restrictions are sometimes due to cultural factors. The correct reading is inferred under the consideration of world and context knowledge, and lexical semantics of verbs.

Considering what we have discussed so far for the grammatical properties of the SVCs, any grammar needs to consider the following properties to generate SVC sentences:

- Two sequential verbs denote one event and their arguments are shared.
- The final verb is a morpho-syntactic head.
- The two verbs are not in the subcategorization relation, but are linked with the first verb being in the specific verb form (VFORM).
- Only non-stative verbs participate in the SVC.
- The semantic head can be either the first or the second verb.
- The semantic relation between the two verbs is determined by their lexical properties, world-knowledge, and contextual information.

The properties, we assume, are reflections of the constructional properties (cf. Ginzberg and Sag 2001, Sag et al. 2003). That is, the Korean grammar introduces the SVC construction whose general constraint is given in the following (cf. Chung and Kim 2008):¹⁶

(28) Head-SVC:

$$\left[\begin{array}{c} hd-svc \\ C-CONT \left[\begin{array}{c} IND\ e0 \\ RELS \left\langle \begin{array}{c} PRED\ svc-rel \\ ARG1\ e1 \\ ARG2\ e2 \end{array} \right\rangle \end{array} \right] \end{array} \right] \rightarrow \left[\begin{array}{c} nonstative-v \\ VFORM\ (a/e)se \\ IND\ e1 \end{array} \right], H \left[\begin{array}{c} nonstative-v \\ IND\ e2 \end{array} \right]$$

The constructional declaration on the head serial verb construction (*hd-svc*) specifies that two nonstative verbs are combined with the first carrying the *a/e* VFORM value. Each of these two denotes its own event *e1* and *e2*, and these two events are in the semantic relation *svc-rel* which includes the semantic relations such as a temporally-precedence (for SSVC) or overlap, manner or direction-relation. At this stage, the rule does not tease out all these three different ways of meaning composition in a formal way: we just assume that the semantic relation in the SVCs is constructionally-related as represented with the C-CONT (constructional meaning).¹⁷

As we have noted so far, the Korean SVCs allow the argument composition: the subject and object are shared while all the remaining arguments are composed together.¹⁸ To formalize this argument composition, we differentiate object-sharing cases from the other general SVCs cases, assuming two different SVCs.¹⁹ Consider the general cases with no object sharing first:

(29) Head-Gen-SVC:

$$\left[\begin{array}{c} hd-gen-svc \\ COMPS\ [A] \oplus [B] \end{array} \right] \rightarrow [1] \left[\begin{array}{c} nonstative-v \\ COMPS\ [A] \end{array} \right], H \left[\begin{array}{c} nonstative-v \\ COMPS\ [B] \oplus \langle [1] \rangle \end{array} \right]$$

This constructional declaration means that a nonstative verb will combine with a preceding nonstative main verb, forming a *head-gen-svc*. This resulting construction will compose the COMPS value of these two verbs by the list append operation (represented by \oplus). This assumption will basically license the combination of two nonstative verbs with different argument structure values as illustrated in the following structure for the sentence (8):

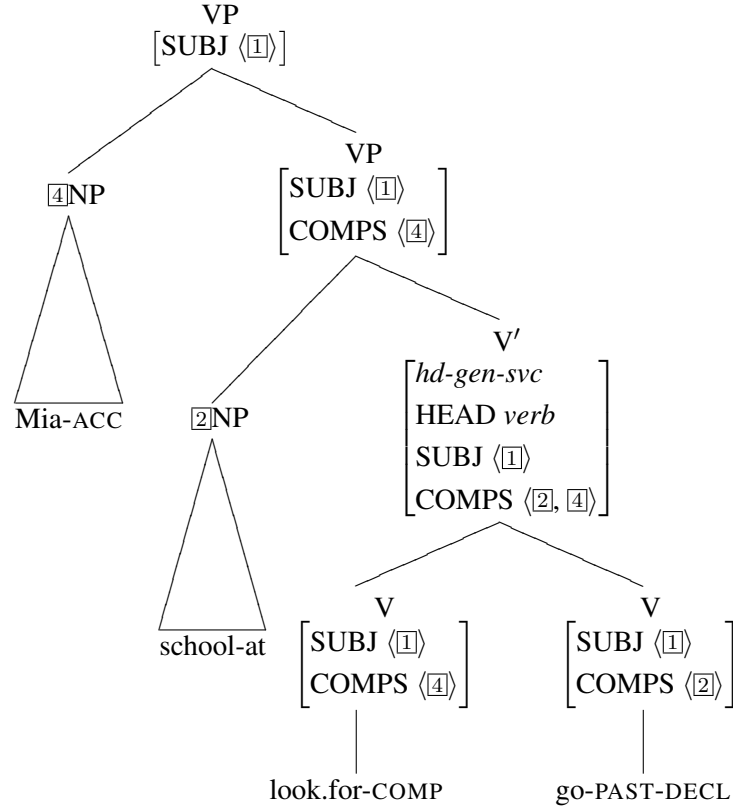
¹⁶The generation of idiomatic SVCs is different since they are generated in the lexicon. That is, given the two nonstative verbs as input, the lexicon generates a serial verb compound with an idiomatic meaning. See Hashimoto and Bond (2005) for similar Japanese examples.

¹⁷Representing this *svc-rel* in a finer and more precise way is thus our future project.

¹⁸A similar idea is also developed by Ackerman and Webelhuth (1998) within the framework of LFG.

¹⁹The main reason for positing these two subconstructions has to do with computational ones: we have found there is no clear formal way of representing object sharing cases together.

(30)



In the SVC sentence, meaning ‘(Chelswu) went to school to look for Mia’, the two verbs ‘look-for’ and ‘go’ will combine first.²⁰ This resulting complex predicate will combine with the two arguments *Mia-lul* and *hakkyo-ey*. This is possible from the argument composition in accordance with the Head-Gen-SVC rule. That is, the rule allows us to compose the argument ‘school-at’ selected by the second verb ‘go’ with the object ‘Mia’ selected by the first verb ‘look.for’. Note that this argument process is not a lexical one, but licensed by the constructional constraint.²¹

In addition to this general case, as we have seen, there are cases where the two verbs in the SVC share their object. We separate this kind of SVC case from the general cases with the following constructional constraint:²²

(31) Head-Obj-SVC:

$$\left[\begin{array}{l} \text{hd-obj-svc} \\ \text{COMPS } \langle 2 \rangle \oplus [A] \oplus [B] \end{array} \right] \rightarrow [1] \left[\text{COMPS } \langle 2 \rangle [\text{GCASE } \textit{acc}] \oplus [A] \right],$$

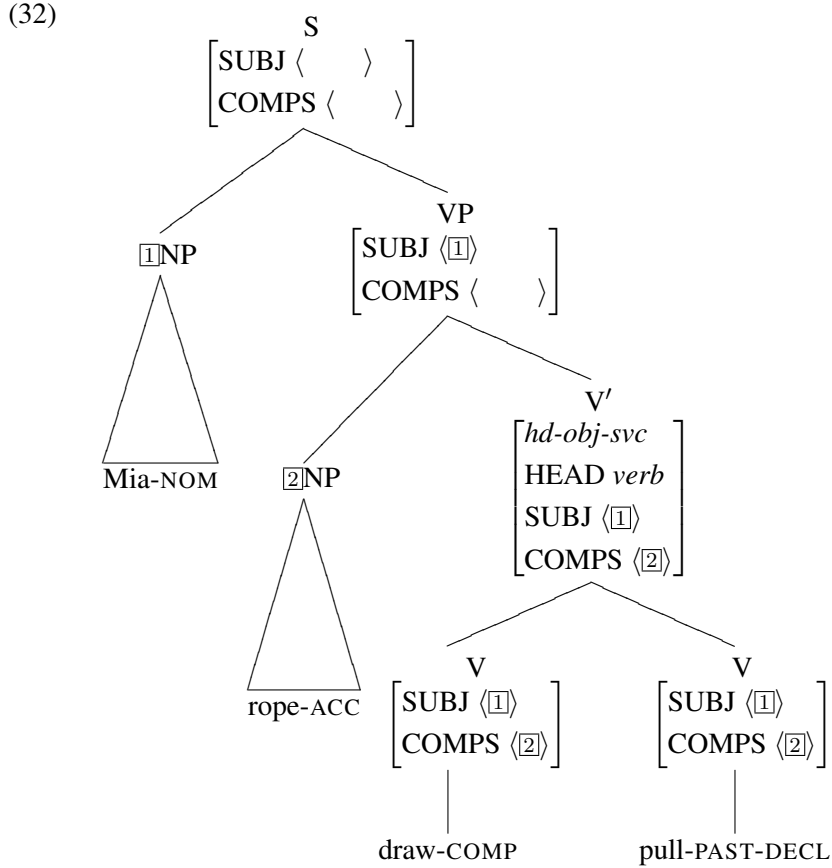
²⁰Due to the lexical process, it now selects the main verb ‘look for’ as its additional complement.

²¹Another difference, as seen from the structure, is that the auxiliary verb selects its main verb, but the two serial verbs are not in a selectional relation.

²²In the KPSG, the feature GCASE represents grammatical cases such as nominative or accusative whereas SCASE means semantic cases such as locative or instrument.

$$H \left[\begin{array}{l} \text{nonstative-}v \\ \text{COMPS } \langle \boxed{2}[\text{GCASE } acc] \rangle \oplus \boxed{B} \end{array} \right]$$

This rule refers to the GCASE (grammatical case) whose value is *acc*. That is, when both verbs in the SVC select an object whose structural case value is *acc*, the combination of these two verbs will then share this object ($\boxed{2}$) while the remaining complements are composed. This will then allow a structure like the following for (1b):



In the sentence, meaning ‘Mia pulled a rope, drawing it’, the head serial verb *tangki-ta* ‘draw’ now shares its object with the preceding verb *cap-a* ‘catch’. This is made possible by the constructional constraint of the Head-Obj-SVC. Once again, this argument sharing happens in syntax, not in the lexicon.

5 Conclusion

In the paper, we have seen that the monoclausal SVCs have complex syntactic as well as semantic/pragmatic constraints. In particular, we have seen that the combination of two verbs is quite flexible in forming a SVC as long as they are non-stative verbs. Korean SVCs also display canonical SVC properties of the natural

languages: the two verbs form a complex predicate, the final verb serving as the syntactic head together with the argument sharing between the two verbs. In addition, we have seen that SVCs are basically different from cognate constructions like auxiliary constructions, though there are some similarities.

Based on these observations, we have assumed that Korean SVCs can be classified into four different types depending on their semantic and pragmatic composition. We have left out the exact semantic composition in the constructions because the exact semantic relations between the two participating verbs have to do with lexical semantics, world knowledge, and contextual information.

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