

# Non-culmination and Serial Verb Construction in Korean\*

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**Lee, Juwon. 2019. Non-culmination and Serial Verb Construction in Korean.** *Linguistic Research* 36(3), 389–414. In English the inherent result of a lexical causative (e.g. *open* and *burn*) must occur for a sentence headed by the verb to be true; it is simply contradictory to say, for example, that John opened a door, but it was not opened or that John burned a book, but it was not burned. By contrast, the corresponding sentences in some other languages are acceptable (e.g. Thai, Tamil, Hindi, Chinese, Japanese, and Salish languages), and the sentences are said to be interpreted as non-culmination (more specifically, zero result). Korean is one of those languages (Park 1993; Y-S. Lee 2004; J. Lee 2015; Martin 2016; Beavers and Lee In press). Although non-culmination research has recently attracted much attention, most studies on it in the literature have focused on lexical causatives. This paper aims to extend the coverage of non-culmination research to serial verbs, which are considered typical complex predicates in Korean. Particularly, it is shown, following J. Lee (2015), that V1 (the first verb) of a serial verb construction does not allow zero result, but V2 (the second verb) does. To account for this difference, I propose in this paper the Final Event Hypothesis that only the final subevent in the event structure of a causative predicate is cancelable whether the predicate encodes a direct or indirect causation. Some predictions of this hypothesis and an alternative hypothesis in J. Lee (2015) are tested with other similar data and resultative constructions in Korean, which I argue further supports the Final Event Hypothesis. (Jeonju University)

**Keywords** non-culmination, zero result, causation, event structure, intentionality, complex predicate, serial verb, resultative

## 1. Introduction

This paper investigates the non-culmination reading associated with Serial Verb Constructions (SVCs) in Korean. It has been widely known that in some languages an actual occurrence of the result involved in a lexical causative (i.e.

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verbs like *open*, *break* and *burn*) is not necessary for a sentence headed by the verb to be true. Such languages include Chinese (Koenig and Chief 2008), Hindi (Singh 1998), Japanese (Ikegami 1985; Tsujimura 2003), Karachay-Balkar (Tatevosov 2008), Salish languages (Bar-el et al. 2005; Jacobs 2011), Tamil (Pederson 2008; Herring 1998), and Thai (Koenig and Muansuwan 2000). Examples from Tamil and Karachay-Balkar (a Turkic language) are given in (1).

- (1) a. *aiya teengkaay-ai uTai-tt-aar.*  
       brahmin coconut-acc break(tr)-Ps-3sResp  
       *aanaal teengkaay uTai-ya-villai.*  
       but coconut break(intr)-Inf-Neg  
       ‘The brahmin broke the coconut. But the coconut didn’t break.’  
       (Herring 1998: 282, cited in Pederson 2008: 331, (1)) (Tamil)
- b. *kerim eki saat e ik-ni ac-xan-d.*  
       Kerim two hour door-ACC open-PFCT-3SG  
       ‘Kerim tried to open the door for two hours.’  
       (Tatevosov 2008: 395, (8)) (Karachay-Balkar)

In (1a) the inherent result of the causative predicate is denied, but the sentence is just acceptable; it is not contradictory. Similarly, in (1b) the causative predicate is interpreted as *try to open the door*, suggesting that the inherent result of the predicate is not required to actually occur. A similar phenomenon is found in Korean. Consider the following examples involving a caused change-of-state predicate (see discussions of similar data in Park 1993; Y-S. Lee 2004; J. Lee 2012, 2014b, 2015; Beavers and Lee In press):<sup>1</sup>

- (2) *Tom-i (himkkes) mwun-ul tat-ass/yel-ess-ciman,*  
       Tom-Nom with all the strength door-Acc close-Pst/open-Pst-but  
       *mwun-un kkwumccek-to ha-ci anh-ass-ta.*  
       door-Top movement-even do-Comp Neg-Pst-Dec

1 A caused change-of-state predicate (e.g. *Mary broke the window*) has a causative event structure whose result is a state (i.e. a result state) (see Dowty 1979: 91-99; Rappaport Hovav and Levin 1998: 108).

(lit.) ‘Tom closed/opened the door with all his strength, but it did not move at all.’ = (approx.) ‘Tom tried to open the door with all his strength, but it did not move at all.’

In (2) the inherent result of the causative predicates in the preceding clause is canceled in the following clause, but the sentence is still acceptable unlike its English counterpart.<sup>2</sup> The literal English translation is a clear contradiction. Since the inherent result of the verbs does not actually occur in (2), we say that they are interpreted as *zero results* (Demirdache and Martin 2015; Beavers and Lee In press) (or *failed attempts* in the sense of Tatevosov 2008: 395). Instead of the actual occurrence of result, the zero result reading entails the subject’s intention regarding the result; thus, zero result construction is similar to the *try*-construction in that they entail an intention on the part of the subject (see J. Lee 2015; Beavers and Lee In press).<sup>3</sup>

While many scholars have recently studied the non-culmination phenomenon across languages, most studies are only concerned with simple lexical causatives which head typical causative predicates. Korean is not an exception, and this calls for an examination of other similar, more complex constructions in terms of the non-culmination properties. Thus, this paper examines SVCs in Korean. Consider some canonical Korean SVCs given in (3) (see discussions of Korean SVCs in Chung 1993; Chung and Kim 2008; Kim 2010; J. Lee 2014a, 2014b, *inter alia*).

- (3) a. *John-i sakwa-lul kakk-a mek-ess-ta.*  
       John-Nom apple-Acc peel-Comp eat-Pst-Dec  
       ‘John peeled the apple and then ate it.’

2 This paper does not argue that all the native speakers of Korean accept the sentences like (2); some people think that such sentences sound odd to varying degrees. I do not discuss in this paper why this variation of acceptability arises, but assume that the sentences are generally acceptable to some native speakers of Korean. In fact, sentences similar to (2) have been found in the Web (see J. Lee 2015; Beavers and Lee In press).

3 Despite of this similarity, they have a clear difference. The *try*-construction with a lexical causative does not require a direct cause to occur, but the zero result sentence with the lexical causative does (see J. Lee 2015; Beavers and Lee In press).

- b. *John-i            samwusil-ey   talli-e            ka-ss-ta.*  
 John-Nom   office-to        run-Comp   go-Pst-Dec  
 'John went to the office by running.' = 'John ran to the office.'

The two component verbs in each of the SVCs behave as a single unit: for instance, the SVCs conceptualize the component events as a single, unified event (see Baker 1989; Collins 1997; Aikhenvald 2006; Kim 2010; J. Lee 2014a, *inter alia*), and an adverb seems not allowed to appear in between the two component verbs. Thus, serial verbs are considered as typical complex predicates. The specific question pursued in this paper is whether serial verbs also allow zero results and what semantic properties they have with regard to zero results. J. Lee (2015) suggests that V1 (the first verb) in SVCs does not allow zero result, but V2 (the second verb) in SVCs permits zero result in Korean. This difference is further supported here. Also, to account for the difference of the component verbs, a hypothesis, called the Final Event Hypothesis, is proposed in this paper that only the final subevent in the event structure of a causative predicate is cancelable whether the predicate encodes a direct or indirect causation; all the other subevents must occur in the actual world. An alternative hypothesis (Event Connection Hypothesis/Generalization in J. Lee 2015) is also discussed, and the Final Event Hypothesis is shown to be superior to the alternative. The Final Event Hypothesis is further supported with some predictions of it with regard to resultative constructions in Korean. If the hypothesis is true, this study can contribute to our better understanding of the semantics of SVCs and provide an insight into the non-culmination phenomenon.

This paper is organized as follows. The section 2 discusses, as a background, the possible readings of caused change-of-state predicates. In section 3, some SVCs and related problems are presented, and the Final Event Hypothesis is proposed as a solution to the problems. In section 4, some predications of the Final Event Hypothesis in relation to resultative constructions are verified, and section 5 concludes the paper.

## 2. Background: Interpretations of caused change-of-state predicates

Before the main issue regarding the relation between zero result and SVC is

discussed in the next section, various readings of typical caused change-of-state predicates are presented in this section. This would serve as a background for the discussion of the main problems.

A caused change-of-state predicate in Korean can be used to describe various situations. In most cases, it describes a situation in which the inherent result of the predicate occurs at least to some degree in the actual world. Consider the example given in (4).

- (4) *John-i mwun-ul yel-ess-ko,*  
 John-Nom door-Acc open-Pst-and  
*mwun-i cokum/wancenhi yel-li-ess-ta.*  
 door-Nom a little/completely open-Pass-Pst-Dec  
 (lit.) 'John opened the door, and it was a little/completely opened.'

Due to the second clause in (4), the first clause headed by the result verb (*yel*- 'open') is applied to a situation where John did something to the door, and so the door became open partially or completely. That is, the inherent result (openness) involved in the causative event structure of the predicate occurs in the actual world. In this case, however, the intention of the subject is vague; the subject may or may not have an intention regarding the result state. This vagueness of intention is also true of the English translation 'John opened the door.' and it can be verified by the modification with an intentional or non-intentional adverb: *John deliberately/accidentally opened the door.* Consider the similar Korean sentence in (5).

- (5) *John-i silswulo/ilpwule mwun-ul yel-ess-ko,*  
 John-Nom accidentally/intentionally door-Acc open-Pst-and  
*mwun-i cokum/wancenhi yel-li-ess-ta.*  
 door-Nom a little/completely open-Pass-Pst-Dec  
 (lit.) 'John accidentally/intentionally opened the door, and it was a little/completely opened.'

The modifications in (5) suggest that the predicate does not entail intentionality

or non-intentionality. In short, when the inherent result of a caused change-of-state predicate occurs, whether the subject has an intention on the result is usually determined by the utterance context.

The same caused change-of-state predicate can be also used to describe a different situation where the result involved in the predicate does not occur at all, as already shown in (2). Similar examples are presented in (6).

- (6) a. *John-i pang-ey tulewa-se pwul-ul khi-ess-ciman,*  
 John-Nom room-to enter-after light-Acc turn on-Pst-but  
*pwul-un khi-e-ci-ci anh-ass-ta.*  
 light-Top turn on-Comp-Pass-Comp Neg-Pst-Dec  
 (lit.) 'John turned on the light after he entered the room, but it was not turned on.' = (approx.) 'John tried to turn on the light after he entered the room, but it was not turned on.'
- b. *John-i pang-ul naka-se pwul-ul kku-ess-ciman,*  
 John-Nom room-Acc leave-after light-Acc turn off-Pst-but  
*pwul-un kku-e-ci-ci anh-ass-ta.*  
 light-Top turn off-Comp-Pass-Comp Neg-Pst-Dec  
 (lit.) 'John turned off the light after he left the room, but it was not turned off.' = (approx.) 'John tried to turn off the light after he left the room, but it was not turned off.'

Due to the cancelation of the results in the second clauses in (6), the first clauses should be applied to a situation in which John tried to turn on or off the light but the results did not occur.<sup>4</sup> The sentences in (6) are not contradictory, but

4 The predicate of the preceding clause is interpreted as zero result due to the cancelation of the result in the following clause. A question is whether such cancelation is necessary for the zero result reading; is it possible for the predicate to be interpreted as zero result without the cancelation in the following clause? The cancelation certainly helps it be interpreted as zero result since it is not the default reading, but a cancelation seems not necessary for zero result. Consider the following example:

(i) [Context: Tom promised Mary to open the door. After returning home, Mary found the door still locked, so she was very angry and asked Tom whether he even tried to open the door.]  
 Mary: ne *mwun yel-ess-e?*  
 you door open-Pst-Que

similar to *try*-construction. When the inherent result of a causative predicate does not occur at all, the subject's intention on the result is required (J. Lee 2015; Beavers and Lee In press). The entailment of intentionality can be verified by the fact that the non-intentional adverbs such as *silswulo* 'accidentally' or *uytohacianhkey* 'unintentionally' cannot modify zero result predicates. Consider the following examples:

- (7) *John-i (#silswulo/#uytohacianhkey) pwul-ul*  
 John-Nom accidentally/unintentionally light-Acc  
*khi-ess/kku-ess-ciman, amwu pyenhwa-ka eps-ess-ta.*  
 turn on-Pst/turn off-Pst-but any change-Nom not exist-Pst-Dec  
 (lit.) 'John turned on/off the light, but nothing changed.'  
 = (approx.) 'John tried to turn on/off the light, but nothing changed.'

The sentence in (7) cannot describe a situation where John accidentally bumped into the button of the light, but the light was not turned on or off since it was broken. Summarizing, when the inherent result of a caused change-of-state predicate does not occur at all in the actual world, the subject's intention regarding the result is necessary; but, if the inherent result of the predicate occurs partially or completely, the subject's intention on the result is not required, but vague. In other words, a caused change-of-state predicate in Korean can be used to describe the three different situations: (i) result does not occur, and the subject has an intention on the result, (ii) result occurs, and the subject has an intention on the result, and (iii) result occurs, and the subject does not have an intention on the result. Note that this does not necessarily mean that the causative predicate has three different meanings. In fact, the following ambiguity test with an VP-ellipsis suggests that Korean causative predicates are

- 
- (lit.) 'Did you open the door?' = (approx.) 'Did you try to open the door?'  
 Tom: *ung, yel-ess-e.*  
 yes open-Pst-Dec  
 (lit.) 'Yes, I opened it.' = (approx.) 'Yes, I tried to open it.'

It seems possible that Mary's utterance is interpreted as 'Did you even try to open the door?' and Tom's utterance as 'Yes, I tried to open it.' If so, the verb *yel-ess-e* 'open-Pst-Que' in (i) is applied to a failed attempt situation without an explicit cancelation of the inherent result of the verb.

ambiguous between the two different types of readings (Beavers and Lee In press; see VP-ellipsis test in Lakoff 1970; Zwicky and Sadock 1975):

- (8) *Marcus-ka mwun-ul yel-ess-ko, emma-to kulay-ss-ta.*  
 Marcus-Nom door-Acc open-Pst-and mom-also do so-Pst-Dec  
 (lit.) 'Marcus opened the door, and so did the mother.'
1. *Actual result reading*: Marcus opened the door (intentionally or unintentionally) and the mother opened the door (intentionally or unintentionally), as well.
  2. *Intended result reading*: Marcus tried to open the door and the mother tried to open the door, as well.

In (8) what is entailed in the first reading is an occurrence of the result, and what is entailed in the second reading is the subject's intention regarding the result. It seems to be impossible for the sentence to have the meaning that Marcus tried to open the door but failed (i.e. zero result) and the mother accidentally opened the door or the meaning that Marcus accidentally opened the door and the mother tried to open the door but failed (i.e. zero result). This indicates that either result or intention is entailed in the causative predicate. When result is entailed, intention is vague; this reading is called *actual result* (J. Lee 2015). When intention is entailed, result is vague; this reading is called *intended result* (J. Lee 2015). Note that zero result is a specific reading of intended result. Note also that either the intended result or the actual result of, for instance, the sentence *John-i mwun-ul yel-ess-ta* 'John opened the door' can describe a situation in which John intentionally opened the door.

Finally, it seems that zero result is available only for causative predicates (J. Lee 2015). Non-causative predicates such as state or inchoative predicates do not allow a cancelation; some examples are presented in (9).

- (9) a. *#hanul-i phalay-ss-ciman, phalah-ci anh-ass-ta.*  
 sky-Nom blue-Pst-but blue-Comp Neg-Pst-Dec  
 (lit.) 'The sky was blue, but it was not blue.'



- b. #*elum-i nok-ass-ciman, nok-ci anh-ass-ta.*  
 ice-Nom melt-Pst-but melt-Comp Neg-Pst-Dec  
 (lit.) ‘The ice melted, but it did not melt.’

In (9a) we cannot cancel the state asserted in the preceding clause, and in (9b) the result state of the ice melting cannot be denied in the following clause. Summarizing, it is a causative predicate that is ambiguous between the intended result that entails intention but not result and the actual result that entails result but not intention. With this background on the ambiguity of causative predicates, the possible interpretations of serial verbs are examined in the following section.

### 3. Interpretations of serial verbs

Korean SVCs can have more than two verbs. In this paper, however, I focus on typical SVCs having two component verbs.

#### 3.1 Two types of causative event structures of SVCs

Korean has various types of SVCs – sequential SVC, manner SVC, aspectual SVC, and idiomatic SVC (see discussions on Korean SVCs in Chung 1993; Kim 2010; J. Lee 2012, 2014a, 2014b, among others). Some sequential SVCs which have a kind of causative event structure are examined here. Note first that the sequential SVCs can be further classified into two types, *bake-eat*-type SVC and *hit-break*-type SVC, according to their event structures (J. Lee 2015); the former is exemplified in (10) and the latter in (11).

- (10) a. *John-i sayngsen-ul kwu-we mek-ess-ta.*  
 John-Nom fish-Acc bake-Comp eat-Pst-Dec  
 ‘John baked the fish and then ate it.’  
 b. *John-i sakwa-lul sa mek-ess-ta.*  
 John-Nom apple-Acc buy-Comp eat-Pst-Dec  
 ‘John bought the apple and then ate it.’

In (10) the event denoted by V1 (the first verb) temporally precedes the event denoted by V2 (the second verb); an iconicity is observed. However, it is not that the V1 event directly causes the V2 event; it seems impossible to say that John ate the fish by baking it or John ate the apple by buying it. We may say rather that the V1 event indirectly causes or leads to the V2 event: the SVCs are normally used to describe a situation where the subject baked the fish to eat it or bought the apple to eat it. SVCs of this kind are called *bake-eat-type* SVC. However, in the following SVCs the V1 event serves as the causing subevent in the causative event structure denoted by the V2:

- (11) a. *John-i mwun-ul ttayli-e pwuswu-ess-ta.*  
 John-Nom door-Acc hit-Comp break-Pst-Dec  
 'John broke the door by hitting it.'
- b. *John-i mwun-ul tangki-e yel-ess-ta.*  
 John-Nom door-Acc pull-Comp open-Pst-Dec  
 'John opened the door by pulling it.'

In (11) the V1 event directly causes the result state of the V2 event. Note that the lexical causatives *pwuswu-* 'break' and *yel-* 'open' themselves do not specify their causing subevents. But in (11a) John broke the door by hitting it and in (11b) John opened the door by pulling it. The SVCs in (11) are called *hit-break-type* SVC.

These two types of sequential SVCs seem to have a kind of causative event structure. This is supported with some evidence here. First, when a *bake-eat-type* SVC is modified with a *maney-*adverbial (*in-*adverbial) as in the following, the four-way ambiguity arises:

- (12) *John-i il pwun-maney sayngsen-ul kwu-we mek-ess-ta.*  
 John-Nom one minute-in fish-Acc bake-Comp eat-Pst-Dec  
 'John baked the fish and then ate it in one minute.'

1. *Ingressive reading wrt V1:* John baked the fish and then ate it, and it took one minute for John to start baking the fish.
2. *Completion reading wrt V1:* John baked the fish and then ate it, and

it took one minute for John to bake the fish.

3. *Ingressive reading wrt V2*: John baked the fish and then ate it, and it took one minute for John to start eating the fish.

4. *Completion reading wrt V2*: John baked the fish and then ate it, and it took one minute for John to eat the fish.

Since the two events denoted by the two verbs are temporally concatenated in the *bake-eat*-type SVC in (12), the *maney*-adverbial can be associated with the temporal boundaries of each of the two verbs, resulting in the four readings. This suggests that the component verbs in the *bake-eat*-type SVC have a causative event structure, even though the combination of the verbs encodes an indirect causation. Based on this, the whole event structure of the *bake-eat*-type SVC may be represented as follows:

- (13) [[[x ACT] CAUSE [BECOME [y <STATE>]]] LEAD-TO [[x ACT] CAUSE [BECOME [y <STATE>]]]]

In (13) the V2 event structure with CAUSE encoding a direct causation comes after the V1 event structure with CAUSE encoding a direct causation, and they are in an indirect causation relation. Here I assume that the basic predicate LEAD-TO represents an indirect causation.

Now, when a *hit-break*-type SVC is modified by a *maney*-adverbial (*in*-adverbial), an ambiguity also arises. Consider the example in (14). Note that the sentence (14) is two-way ambiguous just like lexical causatives modified by a *maney*-adverbial.

- (14) *John-i il pwun maney mwun-ul ttayli-e pwuswu-ess-ta.*  
John-Nom one minute in door-Acc hit-Comp break-Pst-Dec  
'John broke the door by hitting it in a minute.'

1. *Ingressive reading wrt V1*: John broke the door by hitting it and it took one minute for John to start hitting the door.

2. *Completion reading wrt V2*: John broke the door by hitting it and it

took one minute for John to break the door.

In (14) the *maney*-adverbial is associated with the beginning of the causing subevent (denoted by V1) and the end of the caused subevent (which is part of the event structure denoted by V2). This two-way ambiguity is a property of typical causative predicates (e.g. *He broke the door in one minute* is ambiguous between its ingressive and completion readings), and so it suggests that the combination of the two verbs has a causative event structure.<sup>5</sup> The *hit-break*-type SVCs may consist of a causing subevent and a caused subevent, as represented in (15).

- (15) [[[x ACT] CAUSE [BECOME [y <STATE>]]] CAUSE [BECOME [y <STATE>]]]

In (15) the V1, which itself has a direct causative event structure, serves as the causing subevent in the whole direct causative event structure of the V2. With the two types of SVCs and their event structures encoding a direct or indirect causation, the possible interpretations of the component verbs are discussed in the following.

### 3.2 Interpretations of V2

The default reading of V2 is that the result involved in the verb occurs partially or completely in the actual world. However, it seems possible to cancel the inherent result of V2 of *bake-eat*-type SVC or *hit-break*-type SVC (J. Lee 2015). Some examples are given in (16).

- (16) a. *pay-ka*                      *kopha-se*                      *Bill-i*                      *sayngsen-ul*  
           stomach-Nom    hungry-since    Bill-Nom    fish-Acc

5 Inchoatives (e.g. *The ice melted*) are also ambiguous when modified by *maney*-adverbial, but in this case the ambiguity is only concerned with the scale of the result involved in inchoative predicates.

6 A reviewer pointed out that he or she does not accept the following sentence:

- kwu-we mek-ess-ciman, nemwu ttukewe-se*  
 bake-Comp eat-Pst-but too hot-since  
*cokumto mek-ci moshay-ss-ta.*<sup>6</sup>  
 at all eat-Comp could not-Pst-Dec  
 (lit.) 'Since Bill was hungry, he baked the fish and then ate it, but  
 it was so hot that he could not eat it at all.' (*bake-eat-type SVC*)
- b. *pangan-i nemwu tewe-se Bill-i mwun-ul*  
 room-Nom too hot Bill-Nom door-Acc  
*tangki-e yel-ess-ciman, mwun-i camki-e iss-ese*  
 pull-Comp open-Pst-bun door-Nom locked-Comp exist-since  
*cokumto yel-li-ci anh-ass-ta.*  
 at all open-Pass-Comp Neg-Pst-Dec  
 (lit.) 'Since the room was very hot, he opened the door by pulling  
 it, but it was not opened since it was locked.' (*hit-break-type SVC*)

In (16a), the V2 is *mek-* 'eat', whose inherent result is the state of the object being eaten, but the result does not occur. Similarly, in (16b) the V2 is *yel-* 'open', whose inherent result is the state of the object being open, but the door is not open. Nevertheless, the SVCs in (16) are acceptable (at least to some native speakers of Korean). In summary, zero result reading seems to be possible for the V2 of sequential SVCs.

### 3.3 Interpretations of V1

J. Lee (2015) suggests that V1 is different from V2 in terms of the availability of zero result. Unlike V2, it is not possible to cancel the inherent result of V1 in

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- (i) *Jenny-ka ku-lul ttayli-e cwuk-i-ess-ta.*  
 Jenny-Nom he-Acc hit-Comp dead-Caus-Pst-dec  
 #*kulena ku-nun cwuk-ci anh-ass-ta.*  
 but he-Top dead-Comp Neg-Pst-Dec  
 'Jenny killed him by hitting him. #But he is not dead.'

I agree with the reviewer's judgment on (i). A possible hypothesis for (i) is that *cwuk-i-* 'kill' does not allow zero result reading since whether the result (death) of the verb actually occurs is socially very important and so the ambiguity is avoided. I leave this issue for future work.

sequential SVCs. Some examples are presented in (17).

- (17) a. [Context: Minsu put the fish into the oven in order to bake it, but it was not baked since the oven malfunctioned. Thus Minsu tried to eat the fish raw, but he could not eat it since it was smelly.]  
 #Minsu-ka sayngsen-ul kwu-we mek-ess-ta.  
 Minsu-Nom fish-Acc bake-Comp eat-Pst-Dec  
 'Minsu baked the fish and then ate it.' (*bake-eat-type* SVC)
- b. [Context: Minsu tried to kick the door in order to open it, but he missed it. Thus the door was not opened.]  
 #Minsu-ka mwun-ul pal-lo cha yel-ess-ta.  
 Minsu-Nom door-Acc foot-Inst kick.Comp open-Pst-Dec  
 'Minsu opened the door by kicking it.' (*hit-break-type* SVC)

The sentence in (17a) itself is grammatical, but it cannot describe the given context. However, if the fish is actually baked and Minsu tries to eat it but it is so hot that he cannot eat it, the sentence appears to be acceptable in this new context. This contrast suggests that the inherent result of the V1 must take place in the *bake-eat-type* SVC. In the context of (17b), Minsu missed the door and so there was no contact. Since the kicking event is the causing subevent of the SVC, the caused subevent (the state of the door being open) must not occur if the contact in the causing subevent does not occur. But in this context, (17b) sounds bad. The same sentence would be acceptable if it is used in a new context where Minsu tried to kick the door in order to open it, and the door was actually kicked (i.e. there was a contact), but the door was not opened since it was locked. This difference indicates that the contact must occur for the *hit-break-type* SVC to be true.

Summarizing, the inherent result of V1 must occur, but the inherent result of V2 does not need to occur. The question is then why V1 and V2 show different behaviors in terms of the occurrence of their inherent results. An answer to this problem is provided below.

### 3.4 Final Event Hypothesis

The generalization we observe from the two types of sequential SVCs is that the result involved in V2 is cancelable, but the inherent result of V1 is not cancelable. Based on this pattern, I propose the Final Event Hypothesis, stated in (18).

(18) *Final Event Hypothesis:*

Only the final subevent of a causative predicate is cancelable; the non-final subevent(s) must occur in the actual world.

- (i) The final subevent is a subevent that is temporally final in the event structure of a predicate, and
- (ii) a causative predicate is a predicate that has a causative event structure (with CAUSE or LEAD-TO) encoding either a direct or indirect causation.

It is important that this generalization, based on SVCs, is also applied to lexical causatives (which seem to encode a direct causation but not an indirect causation). For instance, what is canceled in (6), repeated in (19), is the caused subevent (i.e. result state), which is the final subevent in their direct causative event structures.

- (19) a. *John-i pang-ey tulewa-se pwul-ul khi-ess-ciman,*  
 John-Nom room-to enter-after light-Acc turn on-Pst-but  
*pwul-un khi-e-ci-ci anh-ass-ta.*  
 light-Top turn on-Comp-Pass-Comp Neg-Pst-Dec  
 (lit.) 'John turned on the light after he entered the room, but it was not turned on.' = (approx.) 'John tried to turn on the light after he entered the room, but it was not turned on.'
- b. *John-i pang-ul naka-se pwul-ul kku-ess-ciman,*  
 John-Nom room-Acc leave-after light-Acc turn off-Pst-but  
*pwul-un kku-e-ci-ci anh-ass-ta.*  
 light-Top turn off-Comp-Pass-Comp Neg-Pst-Dec  
 (lit.) 'John turned off the light after he left the room, but it was not

turned off.’ = (approx.) ‘John tried to turn off the light after he left the room, but it was not turned off.’

More specifically, the lexical causatives are known to have the causative event structure in (20) encoding a direct causation (see the event structural representations of lexical aspects in Dowty 1979; Rappaport Hovav and Levin 1998, *inter alia*):

- (20) [[x ACT] CAUSE [BECOME [y <STATE>]]]

In terms of event structure, we can say that the result state, [y <STATE>], is cancelable in the first clauses headed by the lexical causatives in (19), since it is the final subevent in the causative event structures. This further supports the Final Event Hypothesis.

Alternatively, however, we may propose a constraint that the connecting event in the SVCs is not cancelable (Event Connection Hypothesis) (J. Lee 2015). According to this hypothesis, the fish in (17a) must be baked (i.e. the inherent result state of baking the fish must occur), since the result state is temporally in between the two subevents – baking action (e.g. putting the fish into the oven) and eating action (e.g. putting food into mouth) – and thus temporally connects them. Similarly, the contact by hitting in (17b) must occur since the contact is temporally connecting the causing subevent (e.g. stretching an arm) of hitting with the result state of the door being open. This alternative hypothesis can equally account for the semantic contrast between V1 and V2 in sequential SVCs.

Then which hypothesis is more desirable? I propose that the Final Event Hypothesis is more appropriate than the Event Connection Hypothesis. Some evidence is presented here. First, we have assumed with lexical causatives that the causing subevent always occurs, and this is verified by the following example:

- (21) [Context: Minsu had an intention of opening the door, but did not perform any action to open the door. So the door was not opened.]



#*ku-ka muwun-ul yel-ess-ciman, muwun-un kutaylo-ta.*  
 he-Nom door-Acc open-Pst-but door-Top same-Dec  
 (lit.) 'He opened the door, but it is the same as before.'

In the context of (21), any subevent in the causative event structure denoted by the predicate of the first clause does not occur, and the sentence in (21) is not acceptable in this context. But if Minsu had performed an action to open the door in the context, the sentence would be acceptable. This contrast indicates that the causing subevent of lexical causatives must take place; having an intention regarding the caused subevent is not enough.<sup>7</sup> This fact can be accounted for by the Final Event Hypothesis; the causing subevent is not the final subevent, so it is not cancelable. In contrast, the Event Connection Hypothesis does not say anything about the causing subevent of lexical causatives since it is not a connecting event.<sup>8</sup>

That the causing subevent must occur is also true of the sequential SVCs, as illustrated in the following:

- (22) a. [Context: Bill only had an intention to bake and eat the meat, and he did not perform any action to bake or eat the meat.]  
*pay-ka kophu-se #Bill-i koki-lul*  
 stomach-Nom hungry-since Bill-Nom meat-Acc  
*kwu-we mek-ess-ta.*  
 bake-Comp eat-Pst-Dec  
 'Since Bill was hungry, he baked the meat and then ate it.'  
 (bake-eat-type SVC)
- b. [Context: Bill had an intention to open the door by pulling it, but he was just sitting on the chair.]

7 In the context of (21), Minsu is assumed to have an intention on the result because zero result entails the subject's intention. Now, it is not that the zero result sentence in (21) is unacceptable because the subject does not have an intention about the result. That is, (21) sounds bad for a different reason.

8 Note that we should distinguish an event structure (a concept or sense) from situations (instances or reference) to which the event structure is applied to. The two hypotheses discussed here are concerned with the event structure of a predicate rather than the situations that the predicate describes.

*pangan-i nemwu tewe-se #Bill-i mwun-ul*  
 room-Nom too hot Bill-Nom door-Acc  
*tangki-e yel-ess-ta.*  
 pull-Comp open-Pst-Dec  
 'Since the room was hot, he opened the door by pulling it.'  
 (*hit-break-type SVC*)

The causing subevents do not occur in the contexts of (22), and the sentences sound bad. However, if the causing subevents had occurred, the sentences would be fine. For instance, the sentence in (22b) would be acceptable if it were used in a context where Bill intended to open the door by pulling it, so he pulled the door. This fact can be also accounted for by the Final Event Hypothesis, but not by the Event Connection Hypothesis.<sup>9</sup> We can say with the Final Subevent Hypothesis that since both the causing subevent and the connecting event are not the final subevent of a causative event structure, they are not cancelable.

A possible counterexample against the Final Subevent Hypothesis is coordination. It seems possible to cancel the inherent result of the causative predicate in each conjunct. Consider the following example:

- (23) *ku-ka [kong-ul cha-ss-ko kuliko tto ku kong-ul*  
 he-Nom ball-Acc kick-Pst-and and also the ball-Acc  
*maktay-lo ttayli-ess-ciman] motwu pishnaka-ss-ta.*  
 stick-Inst hit-Pst-but all miss-Pst-Dec  
 (lit.) 'He kicked the ball and also hit the ball with a stick, but he missed it.'

In (23) the contact by kicking does not occur and the sentence is still acceptable. However, this does not really go against the Final Subevent Hypothesis, since a coordination does not count as a single predicate unlike SVCs; it is not a complex predicate. Rather, the coordinations support the Final Event Hypothesis.

9 What is said by the Event Connection Hypothesis is that connecting events must occur. In other words, when a connecting event does not appear in an event structure, the Event Connection Hypothesis has nothing to do with the event structure.

If the subject of a coordination only has an intention and does not perform any causing action, the coordination is unacceptable:

- (24) [Context 1: John had an intention to open the door but did not perform any action to open the door.]

[Context 2: John had an intention to kick the door but did not perform any action to kick the door.]

#*ku-ka mwun-ul yel-ko kuliko tto*

he-Nom door-Acc open-and and also

*ku mwun-ul cha-ss-ciman motwu silphayhay-ss-ta.*

the door-Acc kick-Pst-but all fail-Pst-Dec

(lit.) 'He opened the door and also kicked the door, but he failed.'

The sentence in (24) is acceptable in neither Context 1 nor Context 2. However, if John had done something to open the door (e.g. pushing the door) and had done something to kick the door (e.g. stretching his leg toward the door), then the sentence would be fine. In other words, the causing subevent of each predicate in the coordination must occur, which can be explained by the Final Event Hypothesis.

#### 4. Predictions: Resultative constructions

In this section, some predictions of the Final Event Hypothesis are examined in relation to resultative constructions in Korean. First, canonical English resultative constructions are given in (25) (see discussions on resultative constructions in Simpson 1983; Kim and Maling 1997; Wechsler and Noh 2001; Boas 2003; Goldberg and Jackendoff 2004; Wechsler 2005; Beavers 2012, among others).

- (25) a. Mary hammered the metal flat.  
b. Mary painted the door white.

(25a) means that the event of Mary's hammering the metal caused the metal to

become flat. Similarly, (25b) means that the door became white since Mary painted the door. The resultative constructions are understood to have a direct causative event structure, but these English resultative constructions do not allow zero result reading:

- (26) a. #Mary hammered the metal flat, but it is not flat.  
 b. #Mary painted the door white, but it is not white.

Some resultative constructions in Korean are presented in the following (see discussions on Korean resultatives in Kim 1993; Kim and Maling 1997; Wechsler and Noh 2001, J. Lee 2016; Lee *et al.* 2018a, 2018b, among others):

- (27) a. *Minji-ka pancwuk-ul pyengpyengha-key/-tolok twutulki-ess-ta.*  
 Minji-Nom dough-Acc flat-Key/-Tolok pound-Pst-Dec  
 'Minji pounded the dough flat.'  
 b. *Minji-ka mwun-ul hayah-key/-tolok chilhay-ss-ta.*  
 Minji-Nom door-Acc white-Key/-Tolok paint-Pst-Dec  
 'Minji painted the door white.'

In (27a) the main verb in the matrix clause represents the causing subevent and the resultative predicate (with *-key* or *-tolok*) the caused subevent; the combination of these two subevents constitutes the whole causative event structure of the resultative construction. In (27b), however, the main verb *chilha-* 'paint' (which is itself a lexical causative) sets out the overall causative event structure, and the resultative predicate specifies the caused subevent. The causative event structure of the Korean resultative constructions can be verified by the ambiguity with *maney*-adverbial, as in (28).

- (28) a. *Minji-ka pancwuk-ul sampwun-maney pyengpyengha-key/-tolok*  
 Minji-Nom dough-Acc three minute-in flat-Key/-Tolok  
*twutulki-ess-ta.*  
 pound-Pst-Dec

'Minji pounded the dough flat in three minutes.'

1. *Ingressive reading*: Minji pounded the dough flat, and it took three minutes for Minji to start pounding the dough.

2. *Completion reading*: Minji pounded the dough flat, and it took three minutes for the dough to become flat.

- b. *Minji-ka mwun-ul sampwun-maney hayah-key/-tolok*  
 Minji-Nom door-Acc three minute-in white-Key/-Tolok  
*chilhay-ss-ta.*  
 paint-Pst-Dec

'Minji painted the door white in three minutes.'

1. *Ingressive reading*: Minji painted the door white, and it took three minutes for Minji to start painting the door.

2. *Completion reading*: Minji painted the door white, and it took three minutes for the door to become white.

In the ingressive readings of (28), the endpoint of the three-minute-span is at the beginning of the causing subevent. But in the completion readings of (28), the endpoint of the three-minute-span is at the end of the caused subevent. This ambiguity involving causing and caused subevents suggests that the resultative constructions have a causative event structure. However, they have different internal structures, as represented in the following: (29a) shows the causative event structure of (28a), and (29b) that of (28b). The adverbial modification is ignored in the representations:

- (29) a. [[[Minji action of pounding] CAUSE [BECOME [dough <contacted>]]] CAUSE [BECOME [dough <flat>]]]  
 b. [[[Minji ACT] CAUSE [BECOME [the door <white>]]]

In (29a), the causing subevent, which is itself a causative event, is denoted by the main verb in the matrix clause and the caused subevent by the resultative predicate. In (29b), however, the whole causative event structure is determined by the main verb in the matrix clause, and the resultative predicate specifies the caused subevent.

If the resultative constructions have a causative event structure, they should allow a zero result reading with regard to the result state. This is verified in (30).

- (30) a. *Minji-ka pancwuk-ul pyengpyengha-key/-tolok yelsimhi*  
 Minji-Nom dough-Acc flat-Key/-Tolok diligently  
*twutulki-ess-ciman, pancwuk-i ttakttakhay-se*  
 pound-Pst-but dough-Nom solid-since  
*cenhye pyengpyengha-ci anh-ass-ta.*  
 at all flat-Comp Neg-Pst-Dec  
 (lit.) 'Minji diligently pounded the dough flat, but it was not flat at all since the dough was so solid.'
- b. *Minji-ka mwun-ul hayah-key/-tolok yelsimhi*  
 Minji-Nom door-Acc white-Key/-Tolok diligently  
*chilhay-ss-ciman mwun-i mikkulkelye-se*  
 paint-Pst-but door-Nom slippery-since  
*pheyinthu-ka cenhye mwut-ci anh-ass-ta.*  
 paint-Nom at all smear-Comp Neg-Pst-Dec  
 (lit.) 'Minji diligently painted the door white, but the paint was not smeared on the door since the door was so slippery.'

If the Final Event Hypothesis is on the right track, the non-final subevents of the resultative constructions should be not cancelable. This prediction is borne out, as (31) illustrates.

- (31) [Context 1: Minji tried to pound the dough in order to make it flat, but she missed it and so the dough was the same as before.]  
 [Context 2: Minji intended to pound the dough in order to make it flat, but she didn't perform any action yet. So the dough was the same as before.]
- #*Minji-ka pancwuk-ul pyengpyengha-key/-tolok twutulki-ess-ta.*  
 Minji-Nom dough-Acc flat-Key/-Tolok pound-Pst-Dec  
 'Minji pounded the dough flat.'

In Context 1, Minji tried to pound the dough, but there was no contact and so the result state of the dough being flat did not occur. The resultative construction in (31) cannot be used to describe this situation. The same resultative construction cannot describe Context 2 in (31), either. But if the pounding event (including the contact) happens, the resultative construction is acceptable. All these can be accounted for by the Final Event Hypothesis; only the final subevent in the causative event structure denoted by the resultative construction is cancelable. The following resultative construction in the context also supports the hypothesis:

- (32) [Context: Minji intended to paint the door white, but she didn't perform any action yet. So the door was the same as before.]  
*#Minji-ka mwun-ul hayah-key/-tolok chilhay-ss-ta.*  
 Minji-Nom door-Acc white-Key/-Tolok paint-Pst-Dec  
 'Minji painted the door white.'

The resultative sentence in (32) cannot be used in the context, but if Minji had tried to paint the door (e.g. spraying the paint onto the door), then the sentence would be acceptable. In short, the causing subevent in the event structure of a causative predicate must actually occur for the sentence headed by the predicate to be true. This can be straightforwardly explained by the Final Event Hypothesis, but not by the Event Connection Hypothesis.

## 5. Conclusion

Korean is one of the languages that allow non-culmination reading (particularly, zero result reading) of causative predicates. This paper examines Korean sequential SVCs in terms of the non-culmination readings. In particular, it is shown based on J. Lee (2015) that V1 (the first verb) must be interpreted as an actual result, but V2 (the second verb) allows a zero result. To account for this contrast, I propose the Final Event Hypothesis that only the final subevent (the subevent that is temporally final) in a causative event structure (with CAUSE or LEAD-TO) encoding a direct or indirect causation can be canceled;

that is, the non-final subevent(s) must actually occur for the sentence headed by the causative predicate to be true. This hypothesis is further supported by some Korean resultative constructions, which have a direct causative event structure. A remaining question is why only the final subevent is cancelable, which I leave for future research.

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