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The Role of Verbal Root in Completion Entailment of English Accomplishment Predicates [*]

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ABSTRACT

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It has been observed that Korean learners of English have difficulty in deriving completion entailment of English accomplishment predicates because the entailment pattern in English differs from that of their L1. However, the present study suggests that not all English accomplishment predicates will be equally problematic to L2 learners because English accomplishments differ in their verbal roots (i.e., a verb's root may focus on a manner or a result) (Rappaport Hovav and Levin 2010). To see the effects of verbal root on completion entailment, we conduct a completion entailment test on 123 Korean learners of English and 50 English native speakers. The results show that not only L1 Korean learners but also L1 English speakers show bimodal pattern among English accomplishment predicates. Both L1 Korean learners and L1 English speakers are better at deriving completion entailment of accomplishment predicates with result root (e.g., remove the sticker) rather than those with manner root (e.g., drink the beer). That is, L1 Korean learners did not fail to derive completion entailment for all accomplishment predicates, and L1 English speakers did not derive completion entailment for all accomplishment predicates either. Though the gap between the types of verbal roots was greater in L1 Korean learners than L1 English speakers, the variation observed in both language groups suggests that the types of verbal roots play a key role in completion entailment of English accomplishment predicates.

KEYWORDS

telicity, completion entailment, accomplishment predicates, types of verbal roots

1. Introduction

Quite often we care how the situation is being described in time and over time and express it by using grammatical means. For example, a basic eating event can be described from several different aspects. It can be described as in progress (e.g., He is/was eating an apple), as completed (e.g., He ate an apple), as habitual (e.g., He eats apples/ He ate apples), and so forth. In order to interpret different aspects, as intended by a speaker, a listener needs to understand the verbs' aspect correctly. Otherwise, there will be considerable misunderstanding of the situation described. However, it seems that languages differ in encoding of verbs' aspect. If the L1 and L2 use essentially the same encoding mechanism, there will be relatively no difficulties in achieving a target-like representation of aspectual entailment. Alternatively, if the L1 and L2 use somewhat different encoding of aspect, there will be considerable difficulties and misunderstanding.

One of the most important aspectual properties of a VP is whether it describes a situation as having a logical endpoint or not. A VP that is linguistically encoded to indicate a logical endpoint is telic and one that does not is atelic. For example, verbal predicates such as 'ate an apple' is telic because we know that when the apple is eaten, the event has reached its logical endpoint. Alternatively, 'ate apples' are atelic. We cannot determine the logical endpoint of the situation because we don't know how many apples need to be eaten. Of special interest to the present study is the fact that so-called accomplishment predicates, which are known as telic, exhibit different interpretations between English and Korean. To be specific, while simple past accomplishment predicates in English indicate only telic event, the corresponding predicates in Korean may indicate atelic event. This is illustrated by sentences in (1) and (2).

(1)   a. Mina ate a cookie.
    b. ??Mina ate a cookie, but not completely.
(2)   a. Mina-nun   khwukhi-lul   mek-ess-ta.
       Mina-Top   cookie-Acc   eat-Past-Dec
       'Mina ate a cookie.'
    b. Mina-nun   khwukhi-lul   mek-ess-ciman,   ta   mek-ci   anh-ass-ta.
       Mina-Nom   cookie-Acc   eat-Past-but   completely   eat-Suff   not Past-Dec
       '*Mina ate a cookie, but not completely.'   (Oh 2014: 77 (2))

In (1a), the English simple past accomplishment sentence 'Mina ate a cookie' describes telic event. That is, it describes a cookie-eating event as a result of which the cookie has been eaten completely. Accordingly, the sentence becomes infelicitous when it is followed by a clause suggesting that the event is incomplete, such as 'but not completely' as in (b). By contrast, a Korean simple past predicate 'khwukhi-lul mek-ess-ta' in (2a) can refer to both a complete and an incomplete event, as confirmed by the fact that the sentence (2b) is semantically felicitous.

This phenomenon has been called 'event cancellation' (Tsujimura 2003), 'neutral perfective reading' (Singh 1998), 'Incompleteness effect' (Koenig and Chief 2009) and has been known to be attested in a variety of South Asian and East Asian languages such as Japanese, Mandarin, Thai, etc., but not in English. From the perspective of second language acquisition, the difference in in(compatibility) of event cancellation between the L1 and L2 poses considerable difficulties in understanding the telicity of L2 predicates. In fact, it has been reported that many of L2 learners of English whose L1s exhibit event cancellation have difficulty in achieving a target-like understanding of telicity interpretation. In order to achieve a target-like understanding of aspectual entailments of accomplishment predicates in English, the L2 learners of English need to invalidate the event cancellation reading.

That is, they need to infer that English accomplishment predicates refer to complete events only.

The same applies to Korean learners of English. It has been known that event cancellation is available in Korean, but not in English. Accordingly, Korean accomplishment predicates can refer to both a complete and incomplete event, while English accomplishment predicates entail completion only. Such difference between English and Korean can be a source of negative transfer in L2 acquisition of completion entailment of English accomplishment predicates. In the process of acquiring English accomplishment predicates, the task facing L1 Korean learners is to figure out that English accomplishment predicates entail full completion, disallowing the partial completion interpretation (Oh 2014).

To date, mainly two sources of event cancellation phenomenon have been proposed: the object DPs (Singh 1998, Soh and Kuo 2005), and the meaning of the verbal stems (Koenig and Chief 2008). Of course, it is true that direct object DPs or the meaning of induced state-of-change of stems between languages is relevant for aspectual entailments of accomplishment predicates. However, to the best of our knowledge, no studies so far concerned the role of lexical properties (i.e., verbal root) in completion entailment of predicates. If some of the information that is relevant for computation of the predicate aspect is lexicalized in the verbal root (Rappaport Hovav and Levin 2010), it may need to be considered among factors influencing the aspectual value of the predicates. Based on this, the present study attempts to examine whether the type of verbal root plays a role in completion entailment of English accomplishment predicates.

Rappaport Hovav and Levin (2010) distinguish two main types of verbal roots in accordance with the associated event structure: result roots and manner roots. The idea is that a result root (e.g., empty) focuses on a state that results from some activity, whereas a manner root (e.g., wipe) indicates an activity, which is carried out to achieve a change defined by the predicate. Based on this distinction, the present study predicts that L1 Korean learners of English will have relatively little difficulty in deriving completion entailment of English accomplishment predicates with result root because such predicates are incompatible with incomplete situation in which the result state is not achieved. In contrast, the learners will have more difficulty in deriving completion entailment of English accomplishment predicates with manner root because such predicates indicate an activity targeted toward achieving the result state indicated by the predicate, but they may not require the result state to be achieved.

2. Literature Review

2.1. Aspect

Lexical aspect (or sometimes called situation aspect) covers distinctions between properties of event-types denoted by verbal expressions, which is typically expressed lexically by the inherent semantics of the verb (Verkuyl 1972). The most widely accepted ontology-based classification of verbs into lexical classes is that of Vendler (1967), who divides verbal phrases into four different classes as in (3).

(3) a. John liked apples. (States)
   b. John ate apples. (Activities)
   c. John ate an apple. (Accomplishments)
   d. John found an apple. (Achievements)

Of special interest to the present study is a simple past accomplishment predicate. Since a simple past form in

English exemplifies the standard perfective, it is typically assumed to describe an event reaching an end. Accordingly, the sentence becomes semantically infelicitous when it is followed by a clause suggesting that the event is incomplete, such as 'but some of it still remains' or 'but not completely' as shown in (4).

(4) *Mina ate a cookie but some of it still remains/but not completely.

However, it has been known that simple past accomplishment predicates in other languages are not as straightforward as those in English. In a variety of South-and East-Asian languages, simple past accomplishment predicates can be used to describe events that do not terminate at their natural endpoint, which is referred to as 'event cancellation' (Tsujimura 2003), 'neutral perfective reading' (Singh 1998), or 'incompleteness effect' (Koenig and Chief 2008).

2.2. Event Cancellation

The term 'event cancellation' refers to the fact that simple past accomplishment predicates in some languages may indicate an incomplete event (i.e. an event that did not reach its culmination point). Research on the event cancellation phenomenon across languages reports availability of the reading in languages such as Hindi, Thai, Chinese, Japanese, and Korean, but not in a language such as English. The following sentences (Hindi in (5a), Thai in (5b), Mandarin in (5c), Japanese in (5d), and Korean in (5e)) illustrate the point. Note that the English translation equivalents of these sentence are semantically infelicitous.

(5) a. maya-ne   biskuT-ko   khaa-yaa   par us-e   puuraa   nahiin khaa-yaa
       Maya-Erg   cookie-Acc   eat-Perf   but it-Acc   full   not eat-Perf
       *Maya ate a cookie but not completely.   (Hindi; Arunachalam and Kothari 2011: 27 (1))
     b. Surii   t˥ɛɛŋ   klɔɔn bòt níi   khûn   tɛ̀ɛjaŋ mâj   sèd
       Surii   compose poem CL this   Semi-Perf bit   still   finish
       *Surii composed this poem, but has not finished it yet.   (Thai; Koenig and Chief 2008: 242 (6))
     c. wo (…)   gai   le   xin   fangzi, fangzi   hai   mei   gai-wan
       I (…)   build Perf   new   house, house   still   not   build-finish
       *I build a new house, but it is not finished.   (Mandarin; Koenig and Chief 2008: 242 (9))
     d. Risa-wa   hoshi-o   keshita   keredo   mada   nokotte-iru.
       Lisa-Top   star-Acc   erased   but   still   remains.
       *Lisa erased (a/the) star(s) but it still remains.'   (Japanese; Kaku-MacDonald et al. 2020: 186 (2b))
     e. Mina-nun   khwukhi-lul   mek-ess-ciman,   ta   mek-ci   anh-ass-ta.
       Mina-Nom cookie-Acc   eat-Past-but   completely eat-Suff   not Past-Dec
       *Mina ate a cookie, but not completely.   (Korean; Oh 2014: 77 (2))

Though the details of theoretical analyses differ as to why event cancellation phenomenon is observed in some languages but not others, there have been mainly two accounts that have been proposed: the meaning of the direct object DPs, and the meaning of the verbal stems. Singh (1998) argued that the availability of the event cancellation readings in Hindi is due to the lack of determiners in Hindi. For example, bare noun phrases in Hindi such as 'apple' can not only mean 'an apple' or 'the apple' but also 'apples' or 'any part of an apple' and thus interacts with the completion entailment of a sentence (e.g., 'Ken ate the apple' entails event completion whereas 'Ken ate

apples' does not.). Similar observation on bare NPs in accomplishment predicates and their availability for event cancellation readings are reported for Japanese. Kaku-MacDonald et al. (2020) suggest that when the object of accomplishment predicates is a bare noun (e.g., Ken-wa ie-o tatemashita (lit. 'Ken built house'.), it can be interpreted as 'Ken built a/the house(s)'. This means that the bare noun phrases in Japanese create ambiguities, and thus accomplishment predicates with bare NPs are compatible with both complete and incomplete readings.

A number of researchers have assumed that source of the effect is in the meaning of stems that denote induced changes of state. (see Singh (1998) for Hindi, Koenig and Muansuwan (2000) for Thai, Talmy (2000) and Lin (2004) for Mandarin, and Zucchi (1999) for Russian). Koenig and Chief (2008) made a distinction between binary changes and gradable changes, and suggest that only stems denoting gradable changes are relevant to event cancellation reading. They call such stems 'incomplete stems'. For incomplete stems displaying event cancellation, there is a correspondence between the change in degree on the scale and the progress of the event (Krifka 1989). As illustrated in (6), the event of painting in (6a) is measured out by the surface area of the wall, the event of reading in (6b) is measured out by the portion of the manuscript that is read, and the event of eating in (6c) is measured out by the amount that is eaten.

(6) a. I painted the wall.
    b. I read the book.
    c. I ate a pizza.

Then, why do those stems lead to the event cancellation in some languages but not others? Koenig and Chief (2008) explained that in languages that exhibit event cancellation (e.g., Mandarin, Hindi, Japanese, Thai, Korean etc.), sentences with main verbs that describe induced changes of state entail that a scalar change occurred with degree $d_0 < d \leq d_N$. That is, the induced change-of state stems in these languages denote something like the performed part of an activity that would induce a state-of-change. However, in languages that does not exhibit event cancellation (e.g., English), the corresponding sentences entail that a scalar change occurred with degree $d = d_N$.

2.3. Previous Studies on L2 Acquisition of Telicity

Most of the previous studies on L2 acquisition of telicity focused on the role of the cardinality of determiner phrase (DP). Slabakova (2000) investigate how L1 Spanish and L1 Bulgarian learners of English acquire English telicity. The results indicate that the L1 Spanish group patterns with the L1 English speakers, while the L1 Bulgarian group does not. Slabakova explains this result by the fact that specified cardinality of the DP object signals telicity in English and Spanish; specified cardinality of the DP object is irrelevant for telicity calculation in Bulgarian. Gabriel (2010) investigated how L1 English speakers can understand completion entailment of accomplishment predicates with plural objects in L2 Japanese. The results indicate that both intermediate and advanced English learners of Japanese have difficulty in calculating the correct aspectual value of predicates with bare count nouns in Japanese. For example, the English learners of Japanese interpret the Japanese sentence 'kaado-o-kakimashita' ('wrote card') as referring to complete event only. Gabriel argues that this pattern stems from the boundness of count nouns in L1 English and that overcoming this L1 influence is difficult. Kaku and Kazanina (2007) examined whether L1 Japanese learners could derive telicity of English predicates. The results showed that Japanese learners correctly accepted the sentences with a telic interpretation but incorrectly accepted the sentences with an atelic interpretation to some extent. They argue that this result is best accounted for by L1

transfer, the lack of article in Japanese.

Also, there is a study that suggests that the meaning of induced change-of-state plays a role in telicity interpretation. Oh (2014) examined whether L1 Korean speakers are aware that event cancellation is available for only accomplishment predicates, but not achievement predicates. The overall results of the study suggest that the Korean speakers differentiated between accomplishments (e.g., Mina ate the cookie.) and achievements (e.g., Mina closed the office.). While the English controls equally rejected both predicates as descriptions of incomplete events, the Korean speakers accepted accomplishments but rejected achievement as descriptions of incomplete events.

These previous accounts successfully explain why L2 learners have difficulty in arriving at target-like interpretation of L2 predicates. However, one limitation of them is that they did not address the possibility of individual verbs being interpreted differently within the same class. One such possibility is suggested by Ogiela et al. (2014). In their study, L1 English speakers' interpretation of telicity showed between-verb variation among accomplishment predicates. In atelic situation, L1 English speakers tend to answer 'yes' a lot more to the question 'Did the man eat the brownies?' than to the question 'Did the woman build the houses?'. They suggest that because of the available partitive interpretation of *eat* and *drink*, these verbs should be considered a subgroup of quantity-sensitive verbs, in contrast with the more general group of quantity sensitive verbs such as *build* and *fix*. Zribi-Hertz (2006) also made a case for the special nature of some of the accomplishment predicates. She argued that the differences between *eat* and *drink* and other similar verbs stem from the fact that these verbs allow a partitive interpretation. That is, *eat* and *drink* can have partitive interpretation because they indicate partial eating or drinking, while *build* and *fix* do not have partitive interpretation because they cannot indicate partial building or fixing. Lastly, Kaku-MacDonald et al. (2020) reported that the both L1 English and L1 Japanese speakers' judgment of 16 English predicates are not uniform. For example, 8 out of 16 predicates are rejected with an incomplete event in L1 English and accepted in L1 Japanese, which shows an expected pattern. However, among the remaining 8 predicates, 3 predicates (e.g., draw the picture, melt the candle, unwrap the present) were largely accepted by both L1 Japanese and L1 English speakers with incomplete event, and 5 predicates (fill the glass, build the house, circle the star, empty the bottle, and remove the cork) were rejected by both L1 Japanese and L1 English speakers with incomplete events.

These findings raise an important question: if event cancellation is due to the difference in the cardinality of DPs or the meaning of induced change-of-state, why are such different rates of event cancellation reading observed on apparently similar accomplishment predicates? This suggests that the previous accounts are not the only factors for deriving completion entailment in English accomplishment predicates.

2.4. Verbal Root

It has been proposed that some of the information that is relevant for computation of the predicate aspect is lexicalized in the verbal root (Rappaport Hovav and Levin 2010). Rappaport Hovav and Levin (2010) claim that eventive verbs fall into two broad semantic classes: those entailing the manner in which some action is carried out as in (7a), and those entailing the coming about of some particular result state as in (7b).

(7) a. Manner roots: run, walk, swim, jog, blink, yell, scrub, wipe, sweep, etc.
    b. Result roots: break, shatter, crush, destroy, dim, clean, etc.

The idea is that verbs with manner roots such as *wipe* and *scrub* indicate an activity, which is carried out to achieve a change defined by the predicates. Though the verbs in (9a) lexicalize manners, some of them denote

events that are often associated with prototypical results. While *wipe* and *scrub* lexically specify manner involving surface contact and motion, these actions are typically used with the intention of removing stuff from a surface, and in particular contexts, this removal will be strongly implicated. However, since it can be explicitly denied as shown in (8b), it is not lexically encoded in the verb (Rappaport Hovav and Levin 2010).

(8) a. I wiped the table, but none of the fingerprints came off.
    b. I scrubbed the tub for hours, but it didn't get any cleaner.   (Rappaport Hovav and Levin 2010)

Likewise, verbs with result roots such as *clean* and *clear* encode states that often result from actions normally carried out to remove stuff from a surface or container. In a particular context, a specific action will be strongly implicated as in (9a), but again no particular action is lexically specified, as shown by the possibility of providing various continuations explicitly specifying the action involved, as in (9b)[1].

(9) a. I cleaned the tub; as usual, I used a brush and scouring powder.
    b. I cleaned the tub by wiping it with a sponge.
                 by scrubbing it with steel wool.
                 by pouring bleach on it.
                 by saying a magic chant.   (Rappaport Hovav and Levin 2010)

To summarize, the predicates with result roots require the result state indicated by the predicates to be achieved whereas the predicates with manner roots may not require the result state to be achieved. Accordingly, the predicates with result roots are less likely to be compatible with incomplete situation, but the predicates with manner roots are more likely to be compatible with incomplete situation.

In line with this, Soh and Kuo (2005) also claimed that only certain verbs of creation and destruction (e.g., hua 'draw', xie 'write', kan 'read', or chi 'eat') lead to the event cancellation reading, but not others (e.g., zuo 'bake' or zao 'build'). It seems evident that there is some constraint on the verbal stems that license event cancellation reading. The predicates that are claimed to lead to event cancellation reading all have a manner root, while those that are not have a result root.

Based on this, we suggest that the type of verbal root may need to be considered among factors influencing the aspectual value of the predicates. We predict that there will be interpredicate variation in completion entailment of accomplishment predicates depending on the verbal root; completion entailment of accomplishment predicates with result root will be more easily available than those with manner root.

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[1] Here, the one point we should be aware is not to equate the notion of result with telicity. Telicity is often said to involve a result state and some result verbs are necessarily telic. However, the two notions should not be equated. Though manner verbs can be atelic, but it is not lexically atelic. For example, the predicate 'scrub' may be atelic because they describe processes that can be applied indefinitely to a surface. But it can be telic when the whole tub is scrubbed or when the tub's state reaches the point of cleanness (Rappaport Hovav and Levin 2010). On either interpretation, it can be considered accomplishment predicates.

3. Method

3.1 Research Questions

The primary purpose of the present study is to show that there is a variability for accomplishment predicates in completion entailment. If accomplishment predicates with result roots more readily entail full completion than those with manner root, accomplishment predicates with result root will be relatively less problematic to L1 Korean learners of English than those with manner root. Also, the present study attempts to examine the effect of verbal roots in different language groups (L1 Korean and L1 English) and different proficiency groups (intermediate and advanced L1 Korean learners). The research questions are as follows.

- Do L1 Korean learners of English show more difficulty in deriving completion entailment of English accomplishment predicates with manner roots than those with result roots?
- Do L1 Korean learners of English show some difference in deriving completion entailment of English accomplishment predicates, compared to L1 English speakers? If so, in which type of roots does the difference stand out?
- Do L1 Korean learners of English learn to derive completion entailment of English accomplishment predicates as their English proficiency improves?

3.2. Participants

Two experimental groups (L1 Korean learner group, n = 123) as well as one control group (L1 English speaker group, n = 50) participated in the experiment. The experimental group consists of university students and high school students in Korea, and are classified into two proficiency levels based on TOEFL or TOEIC score. Participants with a TOEFL score of 95 or more, or a TOEIC score of 945 were classified as advanced level, and those with a TOEFL score of 72 or more, or a TOEIC score of 785 were classified as intermediate level. Those who did not have scores were asked to take Oxford Quick Placement Test (QPT). Table below shows the number of the participants distributed at each proficiency level[2].

Table 1. Classification of Experimental Group

QPT Level	TOEFL/TOEIC	Number	Proficiency Levels
Level 3	72-94	82	Intermediate
Level 4	95-/945-	41	Advanced
Level 5			

[2] The QPT levels can be understood in terms of ranges of the scores of TOEFL and TOEIC (refer to the following: https://en.wikipedia.org/wiki/Association_of_Language_Testers_in_Europe)

	QPT1	QPT2	QPT3	QPT4
TOEIC	225-549	550-784	785-944	945-
TOEFL	below 42	42-71	72-94	95-

50 L1 English speakers served as a control group. The native English-speaking adults, aged 25-48, were recruited through an internet portal (http://linguistlist.org) and took the survey online. They are grouped together, despite their diverse nationality (U.S.A. (n = 39), U.K. (n = 8), Canada (n = 3)).

3.3 Materials

The predicates used in this experiment are 10 English accomplishment predicates; 5 are those with manner roots and 5 are those with result roots. To verify the linkage between partial completion interpretation and accomplishment predicates, 5 English activity predicates were also employed.

Table 2. Predicates Used in the Study

Accomplishment predicates	Result root	remove the sticker, build the doghouse, clean the stove, empty the fridge, fill the gas tank
	Manner root	drink the beer, draw the picture, read the book, paint the door, wipe the table
Activity predicates		run in the park, talk with friends, walk in the playground, dance in the room, sing on the stage

Accomplishment predicates with result roots (e.g., remove) describe a result state that is brought about by removing substance from a place. They are thus incompatible with an incomplete situation in which that result state is not achieved. In contrast, accomplishment predicates with manner roots (e.g., drink) describes an activity, which is carried out to achieve a change defined by the predicates. Thus, they may not require the result state to be achieved.

The main task of the study is a completion entailment test. The completion entailment test asks whether a VP described in its progressive form entails that the situation has happened and can therefore be described in the simple past form (e.g., Dowty 1977, 1979). If it does, the predicate is atelic and if it does not, the predicate is telic. For example, the answer to the question 'If Mary was running, and suddenly stopped running, did she run?' is yes, because the sudden cessation of the action described by the VP does not cancel the entailment that the event happened. However, the answer to the question 'If Mary was running a mile and suddenly stopped running a mile, did she run a mile?' is no, because the sudden cessation of the situation does not allow the event to reach its logical endpoint; therefore, we cannot say that the event of running a mile actually happened.

In order to investigate the participants' interpretation of English accomplishment predicates in a controlled way, two types of events were devised: events arriving at full completion and events arriving at only partial completion. The procedure of the experiment was as follows. Participants were shown a picture that describes either partial or complete change of state. In partial completion condition, events described did not reach their inherent endpoint (e.g., removing some part of the sticker) but in full completion condition, they reached the endpoint (e.g., removing all of the sticker). For each test predicate, both partial and full completion conditions were described in the pictures, which were taken by the author of this paper or downloaded from the internet. Below the pictures are explanations and questions about the situation. The participants' task was to choose the answers to the questions from 1 to 5. 1 means 'definitely no' and 5 means 'definitely yes'.

	Partial completion	Full completion
Accomplishment predicates with result roots	I was removing the sticker, and suddenly stopped removing it. Did I remove the sticker? Expected answer Definitely no Definitely yes 1 2 3 4 5 L1 Korean L1 English	I was removing the sticker, and finished removing it. Did I remove the sticker? Expected answer Definitely no Definitely yes 1 2 3 4 5 L1 Korean L1 English
Accomplishment predicates with manner roots	I was drinking the beer and suddenly stopped drinking it. Did I drink the beer? Expected answer Definitely no Definitely yes 1 2 3 4 5 L1 English L1 Korean	I was drinking the beer and finished drinking it. Did I drink the beer? Expected answer Definitely no Definitely yes 1 2 3 4 5 L1 Korean L1 English

Figure 1. Examples of Test Materials

4. Result and Discussion

For the data analysis, the mean ratings for each predicate were calculated. The results for full completion condition are presented in Figure 2. Since accomplishment predicates denote fully-completed events both in English and Korean, we expect scores close to 5 for fully-completed events across types of verbal roots by both language groups. As shown in Figure 2, L1 English and L1 Korean advanced learners show slightly higher ratings for accomplishment predicates with result root (ACC-Result) than those for accomplishment predicates with manner root (ACC-Manner), whereas L1 Korean intermediate learners show slightly higher ratings for accomplishment predicates with manner root (ACC-Manner) than those for accomplishment predicates with result root (ACC-Result).

The paired samples t-test comparing the scores for two verbal roots for full completion condition show that the ratings between the two verbal roots are statistically significant in L1 English speakers ($t = 2.210$, $p = 0.32^*$), but not in L1 Korean advanced learners ($t = 1.430$, $p = .161$) and L1 Korean intermediate learners ($t = -.849$, $p = 398$). This suggests that, in full completion condition, both L1 Korean learners and L1 English speakers show relatively little or no difficulty in deriving completion entailment of English accomplishment predicates with both verbal roots.
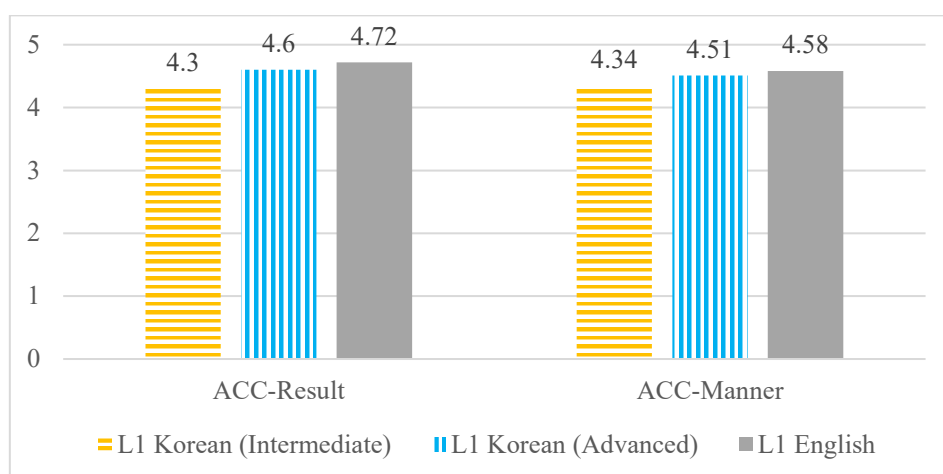

Figure 2. Full Completion Condition

Figure 2 also demonstrates that, for both verbal roots, L1 English speakers show highest ratings, followed by L1 Korean advanced learners and L1 Korean intermediate learners. Results from a one-way ANOVA show that the ratings for ACC-Result in the three groups are statistically significant ($F = .12.334$, $p = .000^{**}$), but the ratings for ACC-Manner are not ($F = 2.844$, $p = .061$). This suggests that there is a developmental pattern in L1 Korean learners' completion entailment of English accomplishment predicates with result root, but L1 Korean learners are not different in deriving completion entailment of English accomplishment predicates with manner root from L1 English speakers. That is, in full completion condition, both L1 Korean and L1 English group are good at deriving completion entailment of English accomplishment predicates with both verbal roots.

The results for partial completion conditions are presented in Figure 3. As predicted, in partial completion condition, both L1 English and L1 Korean groups show lowest for accomplishment predicates with result root (ACC-Result), followed by accomplishment predicates with manner root (ACC-Manner) and activity predicates (ACT). Results from repeated ANOVA show that the ratings in ACC-Result, ACC-Manner, and ACT are

statistically significant in all groups (F = 385.502, p = .000** for L1 English speakers, F = 231.545, p = .000** for L1 Korean advanced learners, F = 296.950, p = .000** for L1 Korean intermediate learners).

Figure 3 also shows that there is a developmental pattern in L1 Korean learners' completion entailment. As the learners' English proficiency improves, their ratings are shown to get closer to L1 English speakers' ratings. Results from one-way ANOVA show that the ratings for ACC-Result, ACC-Manner, and ACT are all statistically different in three groups (F = 9.171, p = .000** for ACC-Result, F = 130.280, p = .000** for ACC-Manner, F = 8.546, p = .000**). This suggests that L1 Korean learners progress toward a target like representation of aspectual entailment.
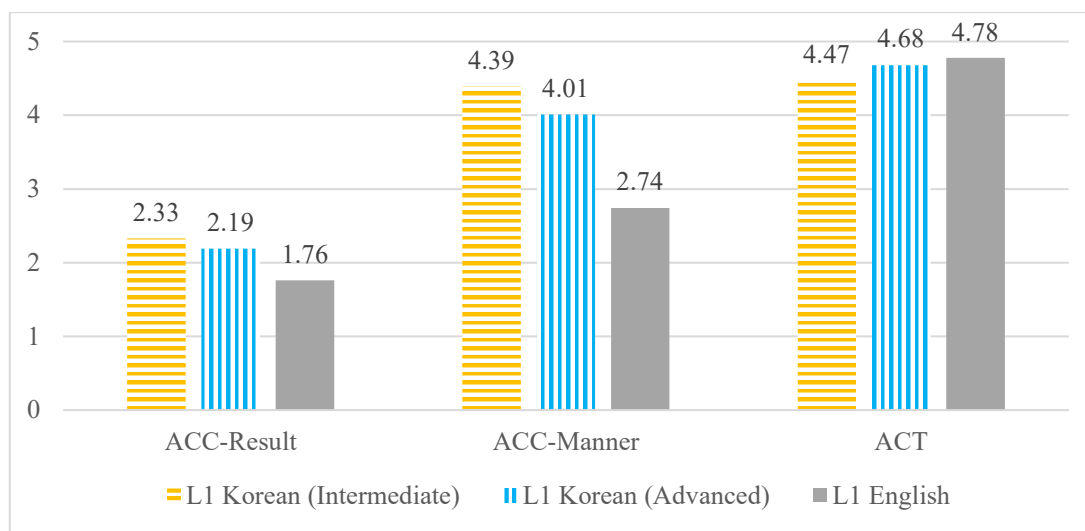

Figure 3. Partial Completion Condition

The most notable finding in Figure 3 is that there is a bimodal distribution pattern among accomplishment predicates. In partial completion condition, both L1 Korean and L1 English groups are more likely to reject accomplishment predicates with result-root (ACC-Result), but accept accomplishment predicates with manner-root (ACC-Manner). The variation contradicts the previous claims that event cancellation reading is always available in languages like Korean, but unavailable in languages like English. As shown in Figure 3, L1 Korean learners do not accept event cancellation reading for all accomplishment predicates, and L1 English speakers do not reject event cancellation reading for all accomplishment predicates either. This variation clearly suggests that verbal root plays a role in completion entailment of English accomplishment predicates.

However, there is a difference between L1 Korean and L1 English group. Though the two groups show similar patterns, accepting accomplishment predicates with manner roots more with incomplete events than those with result predicates, the gap between the types of roots is a lot greater in L1 Korean learners (2.06 in L1 Korean intermediate learners and 1.82 in L1 Korean advanced learners) than L1 English speakers (0.98). This can be due to L1 influence. In their L1 Korean, accomplishment predicates can describe both fully- and partially-completed events, so they are less likely to derive completion entailment of English accomplishment predicates than L1 English speakers. Again, what is noteworthy here is that L1 Korean learners have difficulty in deriving completion entailment to varying degrees. There is relatively less difficulty in deriving completion entailment of English accomplishment predicates with result root, but there is considerable difficulty in having completion interpretation of those with manner root. These findings cannot be explained with L1 influence alone, suggesting that verbal root plays a role in completion entailment of English accomplishment predicates.

5. Conclusion

The present study has examined L1 Korean learners' and L1 English speakers' interpretation of English accomplishment predicates, focusing on the role of verbal type. This exploration stems from the cross-linguistic difference in completion entailment of accomplishment predicates. English accomplishment predicates describe only fully-completed events, but Korean accomplishment predicates can describe both partially-and fully-completed events. It has been noted that such difference can be a source of negative transfer in the acquisition of completion entailment of English accomplishment predicates by L1 Korean learners. However, the present study notes the possibility that not all English accomplishment predicates are equal in deriving completion entailment because they differ in their verbal root, and examines the effect of verbal root on completion entailment.

The most notable finding of the present study is that Both L1 Korean and L1 English groups' ratings of English accomplishment predicates are not uniform. Both groups derive completion entailment of English accomplishment predicates with result root more easily than those with manner root, confirming the role of verbal root. In line with the previous studies, the results of the present study show negative influence of L1. L1 Korean learners tend to reject completion entailment of English accomplishment predicates, compared to L1 English speakers. However, they do so to a varying degree depending on the verbal root. L1 Korean learners are more likely to accept completion entailment of English accomplishment predicates with result root, but they are a lot less likely to have completion interpretation of English accomplishment predicates with manner root. This variation clearly confirms the effect of verbal root on completion entailment.

This paper is concluded with an implication. It has been suggested that in overcoming the negative transfer effects of L1 transfer in the acquisition of completion entailment of English accomplishment predicates, the task facing L1 Korean learners is to realize that English accomplishment predicates entail full completion (Oh 2014). However, the results of the present study show that completion entailment of English accomplishment predicates can differ depending on the verbal root. So, it would be misleading to teach that English accomplishment predicates always entail completion.

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