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Further Empirical Evidence on the Role of Verbal Root in the Computation of Telicity*

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ABSTRACT

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Though the type of verbal root plays a role in the computation of telicity, very little work has been done on this issue. Given the scarcity of the research on this issue, the present study aims to highlight the role of verbal root in the computation of telicity by providing statistical evidence that English accomplishment predicates behave not uniformly in several diagnostics for telic/atelic distinction: the compatibility with *in/for* adverbials and the ambiguity of *in* adverbials between event duration interpretation and event delay interpretation. We test whether English accomplishment predicates behave differently with respect to these diagnostics depending on their verbal root on 65 Korean learners of English and 48 native speakers of English. The result of the first test shows that *in* adverbials are chosen more often when the accomplishment predicates focus on result rather than manner. Likewise, *for* adverbials are chosen more often when the accomplishment predicates focus on manner rather than result. The result of the second test shows that *in* adverbials are interpreted as more ambiguous between the two readings when the predicates focus on result rather than manner. Event duration interpretation is more likely to arise when the predicates focus on result rather than manner, while event delay interpretation is almost equally available for both verbal roots. Taken together, the findings in the present study validate that the aspectual value of the predicate is conditioned, at least partially, by the verbal root.

KEYWORDS

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

1. Introduction

Telicity is a lexical semantic property of predicates. It specifies whether or not an event has an inherent endpoint. The term *telic* refers to all events having such an inherent endpoint. The term *atelic* refers to all events without such an endpoint (Dowty 1979, Vendler 1967). Accomplishments and achievements in the Dowty-Vendler system are telic predicates, whereas states and activities are atelic predicates.

Of particular interest in the present study are accomplishment predicates. As mentioned previously, it has been known that accomplishments are telic predicates, entailing completion of the events. For example, the English simple past sentence 'John ate an apple' describes an apple-eating event as a result of which an apple has been eaten completely.

However, it has been suggested that completion entailment of accomplishment predicates differ depending on the two types of verbal roots: result roots and manner roots (Rappaport Hovav and Levin 2010). The idea is that accomplishment predicates with result root (e.g., empty) focus on a state that results from some activity, so it is incompatible with an incomplete situation. By contrast, accomplishment predicates with manner root (e.g., wipe) indicate an activity, which is carried out to achieve a change defined by the predicate, so it is less incompatible with an incomplete situation. That is, accomplishment predicates with result root tend to derive completion entailment more strongly than those with manner root.

Theoretical and experimental studies on the computation of telicity so far mostly highlight the relevance of the object DP in computing the aspectual entailments of accomplishment predicates, so the studies that focus on the role of verbal root are very rare (Kaku-MacDonald et al. 2020, Kim and Lee 2022). Considering that related research is not much, the present study attempts to present further empirical evidence to support that verbal roots play a role in completion entailment of accomplishment predicates. Two well-known diagnostics for telic/atelic distinction are examined for this purpose: compatibility of *in/for* adverbials and ambiguity of *in* adverbials between event duration interpretation and event delay interpretation.

Regarding the compatibility of *in/for* adverbials, we predict that not all accomplishment predicates will be equally incompatible with *for* adverbials or equally compatible with *in* adverbials. Since accomplishment predicates with result roots derive completion entailment more strongly than those with manner roots, they will be more compatible with *in* adverbials than those with manner root. Likewise, since accomplishment predicates with manner roots derive completion entailment less strongly than those with result roots, they will be less incompatible with *for* adverbials than those with result roots.

Regarding the degree of ambiguity of *in* adverbials, we aim to examine whether there will be different degrees of ambiguity of *in* adverbials between the accomplishment predicates with manner root and those with result root. To be specific, it is predicted that the sentence containing English accomplishment predicates with result root will be considered as more ambiguous than the one containing those with manner root. Event delay interpretation will be almost equally available in both accomplishment predicates, but event duration interpretation will be less available in the accomplishment predicates with manner root than in those with result root. This is because accomplishment predicates with manner root will be less likely to derive completion entailment than accomplishment predicates with result root.

2. Background

2.1. Accomplishments

In the domain of the lexical aspect, verbal phrases are traditionally classified into four classes: states, activities, accomplishments, and achievements (Vendler 1967). States refer to a situation that has no internal structure, thereby having the potential of continuing indefinitely. Activities denote homogenous processes going on in time with no inherent endpoint. Accomplishments refer to a situation that has duration and an inherent endpoint. Achievements refer to a situation that has an inherent endpoint, but in which the event brought about takes place instantaneously.

Of special interest to us are accomplishments with bounded DP, which are known to be telic predicates. In English, accomplishment predicates used in simple past tense entail completion. Accordingly, the sentence becomes semantically infelicitous when it is followed by a clause suggesting that the event is incomplete, such as 'but not completely' or 'but some of it still remains' as in (1).

(1)   a. John ate a cookie.
      b. # John ate a cookie, but not completely.
      c. # John ate a cookie, but some of it still remains.

For Korean learners of English to achieve target-like understanding of aspectual entailments of accomplishment predicates in English, they need to acquire that English accomplishment predicates refer to complete events only. However, to know that English sentences in (1) entail completion is not trivial because some of the information that is relevant for computation of the predicate aspect is lexicalized in the verbal root (Rappaport Hovav and Levin 2010), as we will discuss in the next section.

2.2. Verbal Root

Rappaport Hovav and Levin (2010) argue that verbs fall into (at least) two classes: those encoding result as in (2a) and those encoding manner as in (2b).

(2)   a. RESULT VERBS: specify the result of an event.
         e.g.) arrive, clean, come, cover, die, empty, fill, put, remove, etc.
      b. MANNER VERBS: specify a manner of carrying out an action.
         e.g.) cry, hit, pound, run, shout, shovel, smear, sweep, etc.

The idea is that result verbs focus on a state that results from some activity, whereas manner verbs indicate an activity, which is carried out to achieve a change defined by the predicate. So, the result verbs *clean* and *clear* encode states that often (but not always) 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, but no particular action is lexically specified. Likewise, the manner verbs *wipe* and *scrub* lexically specify manners 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, it is not lexically encoded in the verb.

2.3. Compatibility of *in* and *for* Adverbials

The most frequently used test for telicity is modification of the event duration by an adverbial headed by *in* and *for* in a sentence in the simple past tense. *In* adverbials are most acceptable in situations in which natural endpoints exist. By contrast, *for* adverbials are most natural in situations in which such endpoints do not exist. It has been known that the differing hospitality to *in/for* adverbials provides an effective means for distinguishing between telic and atelic predicates. On standard accounts, the predicates in (3) are interpreted as telic, so only *in* adverbials, but not *for* adverbials, should be applied to[1]. Consider the two sentences in (3).

(3) a. John drew the picture in/? for an hour.
     b. John removed the sticker in/? for five minutes.

However, as discussed above, if accomplishment predicates differ in completion entailment depending on the verbal root, the division may not be as clear-cut as in (4).

(4) a. John removed the sticker in/?for five minutes.
     b. John drank the beer in/for five minutes.

Since the predicates in (4a) focus on a state that results from some activity, they co-occur naturally with *in* adverbials only, but not with *for* adverbials. However, the predicates in (4b) indicate an activity targeted toward achieving the result state indicated by the predicate, so it may co-occur naturally with both *in* and *for* adverbials.

2.4. Ambiguity between Event Duration Interpretation and Event Delay Interpretation

Recall that telic predicates take *in* adverbials. *In* adverbials can be used in two distinct ways. *In* adverbials indicate how long a certain event goes (event duration interpretation), or they can indicate how long it is before a certain state or event begins (event delay interpretation). With accomplishment predicates, *in* adverbials express the duration of the event as illustrated in (5). However, with achievement predicates, *in* adverbials cannot generally express the duration of the event. Instead, the *in* adverbials are interpreted as the time to pass before the event begins or the time which elapses before the event, and the event occurs at the end of the stated interval (event delay interpretation). This is illustrated in (6).

(5) a. John ran a mile in five minutes. (telic-accomplishment: event duration interpretation)
     b. John ran a mile ?for five minutes.

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[1] There are few accounts (Dowty 1979) that states, activities, and accomplishments allow *for* adverbials, but the sentence is ill-formed with achievements. In addition, both accomplishments and achievements occur with *in* adverbials, but neither states nor activities do. That is, accomplishments can occur with not only *in* adverbials but also *for* adverbials as shown below.

a. John painted a picture *for* an hour. (accomplishment) (Dowty 1979: 56 (27))
b. John painted a picture *in* an hour.

Though it may be the case that accomplishment predicates are not ill-formed with *for* adverbials, it has been typically assumed that accomplishment predicates occur naturally with *in* adverbials.

(6) a. John reached the summit in an hour. (telic-achievement: event delay interpretation)
    b. John reached the summit ?for an hour.

An atelic predicate is usually anomalous with *in* adverbials, as illustrated in (7).

(7) a. John was happy in two years[2]. (atelic-states)
    b. John walked in the park in half an hour. (atelic-activities)

It is essential to note that *in* adverbials with future tense can modify any class of predicate, with the 'delay before event begins' reading. This is illustrated in (8).

(8) a. John will run a mile in five minutes. (accomplishment)
    b. John will reach the summit in an hour. (achievement)
    c. John will be happy in two years. (states)
    d. John will walk in the park in half an hour. (activities)

Among them, *in* adverbials with accomplishment predicates can only express the duration of the event, so *in* adverbials in (8a) make the sentence ambiguous between expressing the actual duration of the event and the time to pass before the event begins. However, if accomplishment predicates differ in completion entailment depending on the verbal root, the ambiguity between the two readings will not be equally likely. Consider the sentences in (9).

(9) a. He will remove the sticker in five minutes.
    b. He will read the book in an hour.

Although (9a) and (9b) almost equally allow for event delay interpretation, they will differ in event duration interpretation because (9a) is more likely to derive completion entailment than (9b). That is, there will be different degrees of ambiguity between (9a) and (9b) depending on the verbal root.

2.5. Previous Studies on L2 Acquisition of Telicity

As is the case for many phenomena in L2 acquisition, one of the factors that influences whether L2 learners achieve a targetlike representation concerns the relationship between the relevant representations in the L1 and the L2. Most of the studies on L2 acquisition of telicity so far all highlight the relevance of the direct object DP in computing the aspectual entailments of accomplishment predicates, suggesting that the differences in completion entailment between languages are due to the differences in their DPs (Choi 2015, Fromkin 2000, Oh 2015, Singh 1998, Soh and Kuo 2005). For example, English accomplishment predicate in 'Mike drank the milk' typically entails event completion, whereas the predicate in 'Mike drank milk' does not. Since Korean is an articleless language, both sentences are commonly translated as 'Maikhu-ka wuyu-lul masi-ess-ta (literally 'Mike drank

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[2] Kearns (2017) suggests that a possible repair reading is that the stated time elapsed before the event began. For example, the sentence in (8a) might be interpreted as 'After two years John began to be happy'. Even with this interpretation, the sentence is usually awkward.

milk')', which is compatible with complete as well as incomplete situations. Due to this difference, many L2 learners of English exhibit learnability problems in telicity in L2, incorrectly accepting incomplete interpretation of English accomplishment predicates.

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). However, to the best of our knowledge, only a few studies have examined this issue (Kaku-MacDonald et al. 2020, Kim and Lee 2022). Though Kaku-MacDonald did not directly deal with this issue, their findings show that some predicates (e.g., fill, remove), which yield unexpectedly high rejection rates in the incomplete scenario, carry the main characteristics of result roots. Also, the predicates (e.g., draw, melt) that were often accepted in an incomplete event all have a manner root. Based on Kaku-MacDonald et al. (2020), Kim and Lee (2022) examine L1 Korean learners' difficulty in deriving completion entailment of English accomplishment predicates, focusing on the role of verbal root. In their studies, L1 Korean learners exhibit bimodal pattern among English accomplishment predicates. To be specific, they are better at deriving completion entailment of English accomplishment predicates with result root (e.g., remove the sticker) rather than those with manner root (e.g., drink the beer). Such between-verb variation clearly supports the claim that completion entailment of accomplishment predicates is conditioned, at least partially, by the verbal roots.

In the present study, we focus on providing more empirical evidence to validate the role of verbal root in telicity computation through two standard and most-often cited diagnostics; the compatibility with *in/for* adverbials and the ambiguity of *in* adverbials between event duration interpretation and event delay interpretation.

3. Method

3.1 Research Questions

The primary purpose of the present study is to present further empirical evidence to support the previous finding that the completion entailment of English accomplishment predicates differs depending on their verbal root. If English accomplishment predicates vary in completion entailment, they will behave differently regarding compatibility with *in/for* adverbials, and ambiguity of *in* adverbials. Also, we are going to examine whether the difference varies depending on the language group (L1 Korean and L1 English) and on proficiency levels of English (intermediate and advanced learners of English). The specific research questions are as follows.

- Do English accomplishment predicates show difference in compatibility with *in*/*for* adverbials depending on the verbal root?
- Do English accomplishment predicates in the future tense show difference in the ambiguity of *in* adverbials depending on the verbal root?
- Do the differences vary depending on the language groups and the proficiency of English?

3.2 Participants

Two experimental groups (L1 Korean learner group, n = 65) as well as one control group (L1 English speaker group, n = 48) participated in the experiment. The experimental group consists of university students at 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[3].

Table 1. Classification of Experimental Group

QPT Level	TOEFL/TOEIC	Number	Proficiency Levels
Level 3	72-94	25	Intermediate
Level 4	95-/945-	40	Advanced
Level 5			

48 L1 English speakers served as a control group. The native English-speaking adults were recruited through an internet portal (http://linguistlist.org) and took the survey online.

3.3 Materials and Procedures

The predicates used in this experiment are 10 English accomplishment predicates; 5 are those with manner roots and 5 are those with result roots. For comparison between telic-atelic 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, so it is incompatible with an incomplete situation in which that result state is not achieved. In contrast, accomplishment predicates with manner roots (e.g., drink) describe 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 first test is to choose the appropriate time adverbials for the given sentences. This task is designed to gauge Korean learners' knowledge of the compatibility of accomplishment predicates with *in* and *for* adverbials. To be specific, we address whether their judgments on the compatibility of accomplishment predicates with *in* and *for* adverbials vary depending on the verbal root. The participants were asked to choose an answer from one of the three choices: *in*, *for*, or *in, for both*.

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[3] 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-

Table 3. Examples of the Test 1

Accomplishment predicates	Result root	John removed the sticker ( ) five minutes.
		   a. in
		   b. for
		   c. in, for both

	Manner root	John read the book ( ) an hour.
		   a. in
		   b. for
		   c. in, for both

Activity predicates		John ran in the park ( ) thirty minutes.
		   a. in
		   b. for
		   c. in, for both

It has been suggested that completion entailment of accomplishment predicates varies depending on their verbal root; accomplishment predicates with result root are more likely to derive completion entailment than those with manner root. If this is the case, we can predict that Korean learners of English will accept accomplishment predicates that focus on manner with *for* adverbials more strongly than those that focus on result. Likewise, they will accept accomplishment predicates that focus on result with *in* adverbials more strongly than those that focus on manner.

The second test was to choose the possible readings of *in* adverbials with accomplishment predicates in future tense. This task is designed to see whether the ambiguity of *in* adverbials varies depending on the verbal root. The participants are asked to choose all the possible meanings for *in* adverbials between event duration interpretation and event delay interpretation.

Table 4. Examples of the Test 2

Accomplishment predicates	Result root	It's 10:00 A.M. John says he will remove the sticker in 5 minutes. What will happen at 10:05 A.M.?
		   a. John will have finished removing the sticker.
		   b. John will start to remove the sticker.

	Manner root	It's 1:00 P.M. John says that he will read the book in an hour. What will happen at 2:00 P.M.?
		   a. John will have finished reading the book.
		   b. John will start to read the book.

Activity predicates		It's 10:00 A.M. John says he will run in the park in 30 minutes. What will happen at 10:30 A.M.?
		   a. John will have finished running in the park.
		   b. John will start to run in the park.

4. Result and Discussion

4.1 Test 1

For the data analysis, the percentages of the participants who accept *for* and *in* adverbials are calculated. The results for the acceptability of *in* adverbials are presented in Figure 1. We predicted that *in* adverbials will be more strongly accepted with accomplishment predicates with result root (ACC-Result) than those with manner root

(ACC-Manner) or activity predicates (ACT), though accomplishment predicates with either root have been known to be compatible with *in* adverbials. As predicted, both English control groups and Korean experimental groups made distinction among ACC-Manner, ACC-Result, and ACT. A repeated measures ANOVA show that the percentages of accepting *in* adverbials with ACC-Result/ACC-Manner/ACT are significantly different from each other in all three groups (F = 2781.266, p = .000 in native speakers of English, F = 46.563, p = .000 in advanced Korean learners of English, and F = 24.649, p = .000 in intermediate Korean learners of English). Post hoc analysis with a Bonferroni adjustment reveals that *in* adverbials co-occur most naturally with ACC-Result, followed by ACC-Manner, and ACT.
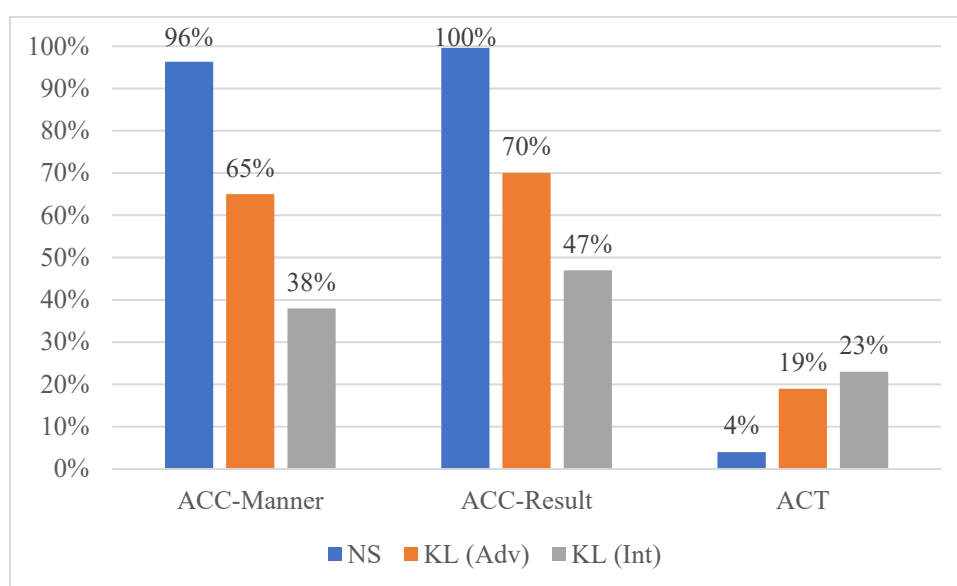

Figure 1. Acceptability of *in* Adverbials

However, there is a clear difference in three groups. The results from one-way ANOVA show that the percentages of accepting *in* adverbials with ACC-Manner and ACC-Result are significantly different in three groups (NS/KL(Adv)/KL(Int)); F = 18.557, p = .000** in ACC-Manner and F = 12.635, p = .000** in ACC-Result. Post hoc analyses using the Scheffé post hoc criterion for significance indicate that *in* adverbials are more frequently chosen by native speakers of English than Korean learners of English. That is, Korean experimental groups accept *in* adverbials with both ACC-Result and ACC-Manner a lot less than English control groups. This suggests that Korean experimental groups are not fully aware of the fact that accomplishment predicates co-occur naturally with *in* adverbials.

The results for *for* adverbials are presented in Figure 2. We predicted that *for* adverbials will be more strongly accepted with ACC-Manner than ACC-Result or ACT, though accomplishment predicates with either root have been generally known to be incompatible with *for* adverbials. As predicted, both English control groups and Korean experimental groups made distinction among ACC-Manner, ACC-Result, and ACT. A repeated measures ANOVA show that the percentages of accepting *for* adverbials with ACC-Result/ACC-Manner/ACT are significantly different from each other in all three groups (F = 109.858, p = .000 in native speakers of English, F = 9.112, p = .004 in advanced Korean learners of English, and F = 4.793, p = .013 in intermediate Korean learners of English). Post hoc analysis with a Bonferroni adjustment reveals that *for* adverbials co-occur most naturally with ACT, followed by ACC-Manner, and ACC-Result. Taken together, the results shown in Figure 1 and

2 clearly demonstrate that the compatibility with *in/for* adverbials differs depending on the verbal root, suggesting that English accomplishment predicates are not uniform in their completion entailment.
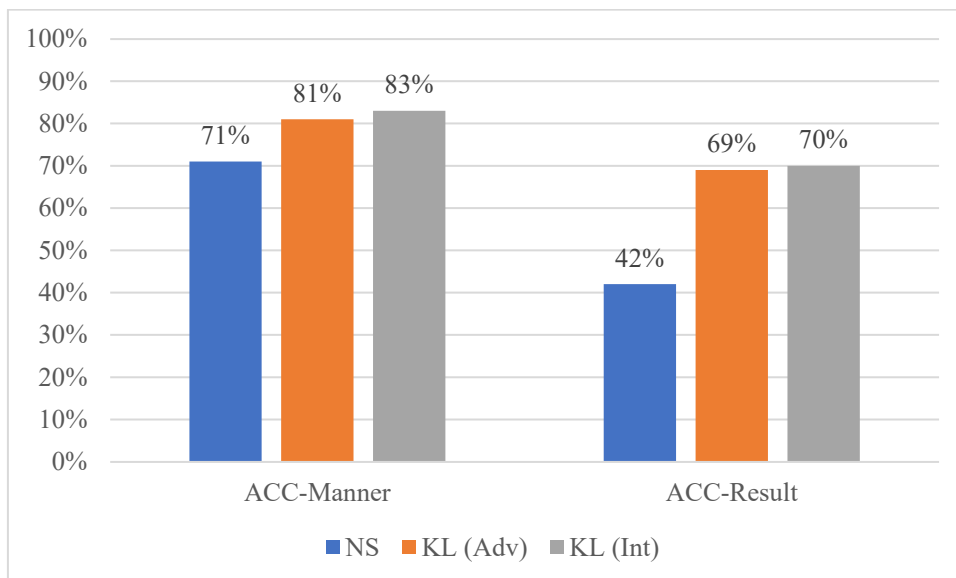

Figure 2. Acceptability of *for* Adverbials

Figure 3 also shows that that there is a clear discrepancy between English control groups and Korean experimental groups. The results from one-way ANOVA show that the percentages of accepting *for* adverbials with ACC-Manner and ACC-Result are significantly different in three groups (NS/KL(Adv)/KL(Int)); $F = 3.495$, $p = .034$ in ACC-Manner and $F = 12.052$, $p = .000$ in ACC-Result. Post hoc analyses using the Scheffé post hoc criterion for significance indicate that *for* adverbials are more frequently chosen by Korean learners of English than native speakers of English. That is, compared with English control groups, Korean experimental groups, regardless of their English proficiency, accept accomplishment predicates with *for* adverbials a lot more strongly. As a reason for this, we suggest L1 influence. *Tongan* adverbials in Korean, the equivalent to *for* adverbials in English, co-occur naturally not only with atelic predicates but also with telic predicates. Consider the following sentences.

(10) a. na-nun   10 pwun-maney   mantwu   5 kay-lul   mek-ess-ta.
     I-Top   10 min-in   dumplings   5 classifier-Acc   eat-Past-Dec
     'I ate 5 dumplings in 10 mintues.'
   b. na-nun   10 pwun-tongan   mantwu   5 kay-lul   mek-ess-ta.
     I-Top   10 min-for   dumplings   5 classifier-Acc   eat-Past-Dec
     'I ate 5 dumplings for 10 mintues.'

The predicate 'mantwu 5 kay-lul mek-ess-ta' in both (10a) and (10b) can be interpreted as telic, though not necessarily. The notable thing here is that the telic predicate co-occurs naturally with *tongan* adverbials as well as *maney* adverbials (Kim 2022). Thus, the accomplishment predicates modified by *for* adverbials may be considered by Korean experimental groups as less incompatible than by English control groups.

Also worth noting is that there is a considerable discrepancy between the theoretical claims found in the

literature and the findings from the present study. The acceptance of *for* adverbials with accomplishment predicates, in particular ACC-Manner is a lot higher than we expected, and to such extent, the previous claims that *in* adverbials are a diagnostic for telic predicates, and *for* adverbials are the one for atelic predicates turn out to be weaker than what the literature has claimed (Krifka 1992, Verkuyl 1989).

In fact, several studies (Dowty 1979, Declerck 2007, Depraetere 2007, MacDonald 2015, Smollett 2005) have suggested that the distinction between *in* and *for* adverbials may not be as clear-cut. When a telic predicate is followed by a *for* adverbial, the adverbial identifies a specific amount of time during which the event happens, though the event may not reach its endpoint yet. Therefore, telic predicates are compatible with both *in* and *for* adverbials, while atelic predicates are only compatible with *for* adverbials. In a similar vein, Kearns (2017) mentions that a *for* adverbial is generally considered to be anomalous with a telic predicate, but for some young speakers the clash between telic predicates and *for* adverbials seems to be weakening[4]. In line with this, the findings of the present study also suggest that *for* adverbials do not unambiguously diagnose (a)telicity. Nevertheless, *for* adverbials are not equally compatible with all accomplishment predicates; they are more compatible with ACC-Manner rather than ACC-Result.

Considering the fact that even native speakers of English choose *for* adverbials quite a lot for accomplishment predicates, a detailed examination of how native speakers of English accept *for* adverbials with individual accomplishment predicates is presented in Figure 3.
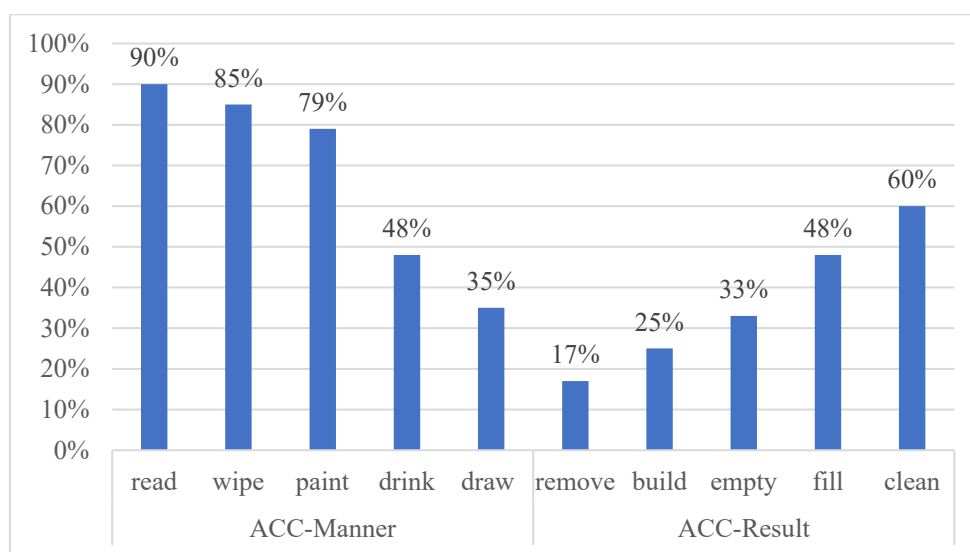

Figure 3. Acceptability of *for* Adverbials b/w ACC-Manner and ACC-Result

In Figure 3, we found that there is not only a considerable amount of variability among members of the two classes, but also a much more gradual scale of acceptance across all accomplishment predicates in general. This pattern deviates slightly from what we might have anticipated if there were a binary distinction between ACC-

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[4] Kearns (2017) presents examples like followings, mentioning that accomplishments and achievements are acceptable with *for* adverbials.

(i) a. He ate the meat pie for half an hour.
   b. They built the barn for two days.   (Kearn 2017: 161 (23))

Manner and ACC-Result. The distribution in Figure 3 shows that acceptance of accomplishment predicates with *for* adverbials are much more subtle and variable than the binary classification (ACC-Manner vs. ACC-Result) would have suggested. Some accomplishment predicates are clearly more acceptable with *for* adverbials (e.g., read, wipe, paint) and others are clearly less acceptable with *for* adverbials (e.g., remove, build, empty). But the accomplishment predicates we are looking at here do not just neatly divide into two distinct categories. ACC-Manner and ACC-Result predicates both tend to cluster around the upper and lower end of the acceptance distribution, respectively. However, there is a lot of overlap between the two classes, and there is no point where they clearly separate.

The verbs studied in this research represent only a small subset of English accomplishment predicates, and it needs to be examined how much other accomplishment predicates differ in terms of acceptance of *for* adverbials. We anticipate that further testing with new verbs will simply confirm the results reported here. Adding additional accomplishment predicates, for example, would result in a denser cluster of verbs along the rating spectrum.

To sum up, the findings from test 1 show that English accomplishment predicates differ in terms of compatibility of *in* and *for* adverbials, though the distinction between the predicates with result root and those with manner root was not as clear as we predicted. These findings suggest that the type of verbal root influences on the completion entailment of English accomplishment predicates, and also imply that compatibility of *in* and *for* adverbials, one of the common diagnostic tests for telicity, may not be as reliable as we have assumed.

4.2 Test 2

For the data analysis of test 2, the percentages of the participants who choose event duration interpretation and event delay interpretation are calculated. Firstly, the results of event delay interpretation are illustrated in Figure 4.
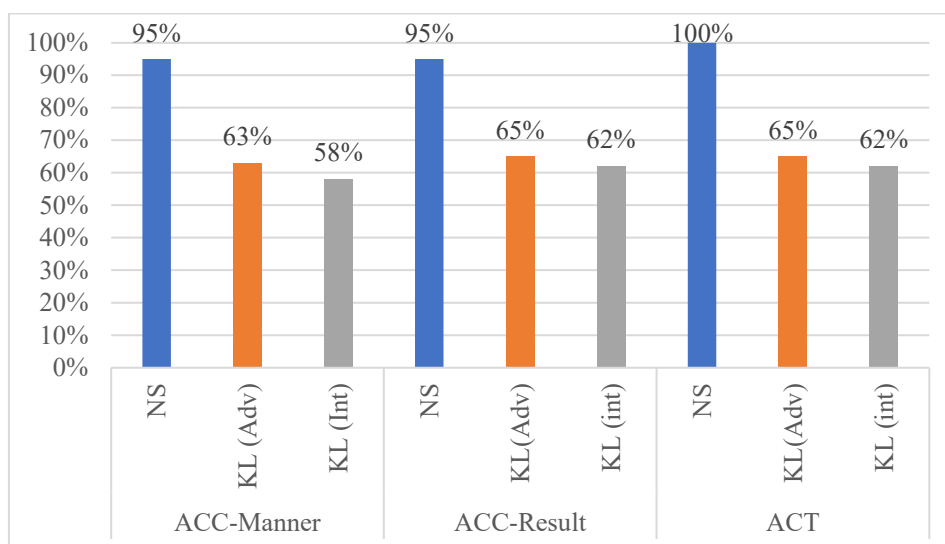

Figure 4. Percentages of Accepting Event Delay Interpretation

Figure 4 shows that the event delay interpretation is almost equally available in both ACC-Manner and ACC-Result. A repeated measures ANOVA show that the percentages of accepting event delay interpretation among ACC-Result/ACC-Manner/ACT are not significantly different from each other in the three groups ($F = 3.062$,

p = .052 in native speakers of English, F = .073, p = .788 in advanced Korean learners of English, and F = .083, p = .775 in intermediate Korean learners of English). Also, Figure 4 shows that the percentages of event delay interpretation differ in the three groups; NS, KL(Adv), and KL(Int). Results from a one-way ANOVA indicate that the effect of language group is significant in ACC-Manner (F = 20.640, p = .000) and in ACC-Result (F = 28.424, p = .000). Post hoc analyses using the Scheffé post hoc criterion for significance indicate that English native speakers accept event delay interpretation of *in* adverbials significantly more than Korean learners of English. These results demonstrate that event delay interpretation is less likely to arise in Korean learners of English than in native speakers of English.

However, event duration interpretation shows somewhat different patterns from event delay interpretation as shown in Figure 5.
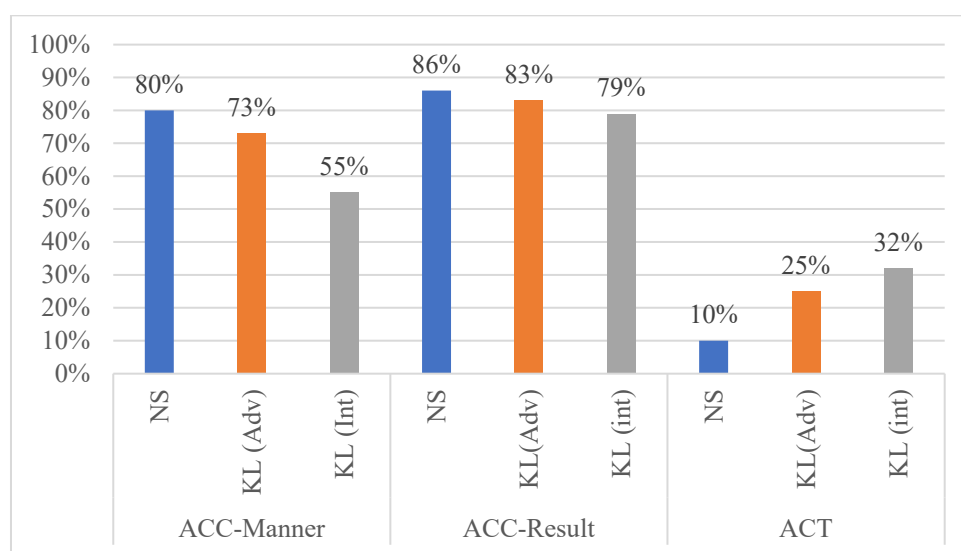

Figure 5. Percentages of Accepting Event Duration Interpretation

Event duration interpretation is shown to arise more strongly with ACC-Result than those with ACC-Manner. A repeated measures ANOVA show that the percentages of accepting event duration interpretation among ACC-Result/ACC-Manner/ACT are significantly different from each other in the three groups (F = 182.704, p = .000 in native speakers of English, F = 48.430, p = .000 in advanced Korean learners of English, and F = 9.554, p = .000 in intermediate Korean learners of English). Also, Figure 5 shows that for ACC-Manner, the percentages of accepting event duration interpretation differ among the three groups, but for ACC-Result, the percentages of accepting event duration interpretation do not. Results from a one-way ANOVA indicate that for ACC-Manner, three groups (NS/KL(Adv)/KL(Int)) reach statistical significance (F = 6.388, p = .002). In contrast, for ACC-Result, the three groups show similar patterns (F = .869, p = .422). This suggests that Korean experimental groups are as good as deriving completion entailment of ACC-Result as the control group, but they have difficulty in deriving completion entailment of ACC-Manner.

Taken together, event delay interpretation is almost equally available in both ACC-Result and ACC-Manner, but event duration interpretation is more available in ACC-Result than ACC-Manner. Thus, *in* adverbials are more ambiguous in ACC-Result than in ACC-Manner, suggesting that the ambiguity of *in* adverbials between event duration interpretation and event delay interpretation is influenced by verbal root.

In conclusion, the findings from test 2 show that English accomplishment predicates are not uniform in allowing

event duration interpretation, while they are almost same in allowing event delay interpretation. These findings, along with the findings from test 1, are interpreted as supporting evidence that verbal root plays a role in completion entailment of English accomplishment predicates.

The idea that the type of verbal root may need to be considered among factors influencing the aspectual value of the predicates was firstly proposed by Kaku-MacDonald et al. (2020). Inspired by Kaku-MacDonald et al. (2020), Kim and Lee (2022) examined the role of verbal root in completion entailment of English accomplishment predicates, and suggested that the type of verbal root plays a role in completion entailment of English accomplishment predicates. In a similar vein, the findings observed in the present study provide further empirical evidence to support the role of verbal root by demonstrating that English accomplishment predicates behave differently depending on the verbal root in certain diagnostic contexts related to completion entailment. The present study contributes to our understanding of the role of verbal root in completion entailment of English accomplishment predicates.

5. Conclusion and Implication

The present study is conducted to provide further empirical evidence to support the previous proposal that English accomplishment predicates are not uniform in their completion entailment depending on the verbal roots. For such purpose, two well-known diagnostics are examined; compatibility with *in/for* adverbials and ambiguity of *in* adverbials. The results of the present study demonstrate that *in* adverbials are chosen more often in ACC-Result than in ACC-Manner. Likewise, *for* adverbials are chosen more often in ACC-Manner than in ACC-Result. Also, this study has shown that *in* adverbials are more ambiguous between event duration interpretation and event delay interpretation in ACC-Result than in ACC-Manner. This is due to the fact that event delay interpretation is almost equally available in ACC-Result and ACC-Manner, but event duration interpretation tends to be more available in ACC-Result than in ACC-Manner, resulting in different degrees of ambiguity between ACC-Result and ACC-Manner.

This paper is concluded with an implication. The findings of the present study have demonstrated that not all English accomplishment predicates are equally compatible with *in* adverbials, and equally incompatible with *for* adverbials. Also, not all English accomplishment predicates modified by *in* adverbials are equally ambiguous between event duration interpretation and event delay interpretation. However, it should be noted that the accomplishment predicates examined here do not obviously line up into two clearly distinguishable groups, exhibiting a considerable amount of variability among members of the two classes. Thus, it seems to be appropriate to understand the verbal roots as a continuum rather than a binary distinction.

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Examples in: English
Applicable Languages: English
Applicable Level: Tertiary