Input–output relation in second language acquisition

Textbook and learner writing for adult English-speaking beginners of Korean

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Studies on the role of input in L2 acquisition often estimate L2 input properties through L1 corpora and focus on L2-English. This study probes the initial stage of L2-Korean learning for adult English-speaking beginners of Korean to investigate input-output relations in the acquisition of L2 that is typologically different from English in a more direct manner. We specifically ask how L2 beginner input affects L2 beginner production with respect to Korean postpositions. For this purpose, we investigate how the beginners receive input regarding Korean postpositions from a textbook and to what extent the input characteristics are manifested in learner writing. We found that, whereas the presentation of certain postpositions in the textbook was generally reflected in learner writing, individual postpositions showed disparity in their use between the textbook and the writing. Implications of the findings are discussed in light of L1-L2 differences and how the textbook presents form-function pairings of these postpositions.

Keywords: usage-based approach, input-output relation, frequency, Korean as a second language, postposition

1. Introduction

Humans are born with built-in sense of frequency distribution and central tendencies (e.g., Ellis, 2002), and this sensitivity to frequency modulates the course of language development from childhood to adulthood (e.g., Ambridge, Kidd, Rowland, & Theakston, 2015). In line with such properties involving development of linguistic knowledge, usage-based approaches argue for the role of input as a core factor for shaping language (e.g., Behrens, 2009; Tomasello, 2003). Every token of language use registered in memory yields narrow-range schemata for

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each linguistic inventory (Goldberg, 2019; Tomasello, 2003), which are greatly affected by frequency of occurrence and distributional properties (Abbot-Smith & Tomasello, 2006; Dąbrowska, 2008). Speakers develop more complex, abstract, and even novel language systems by extracting similarities across various schemata, which also overlap with one another (Dąbrowska, 2008; Langacker, 1987). The similarities are entrenched through accumulated language experience such that these strengthened similarities reliably defeat the other possible candidates (Hilpert & Diessel, 2017). Meanwhile, various (non-)linguistic factors affect the learning process simultaneously, which promotes (and sometimes hinders) frequency effects (e.g., Hilpert & Diessel, 2017; Stefanowitsch, 2011; Theakston, 2004). Together, frequency, in conjunction with (non-)linguistic factors, exerts great influences on language learning.

The prominent role of input frequency in second language (L2) acquisition has been argued by a great deal of previous research (e.g., Ellis & Ferreira-Junior, 2009a, 2009b; Ellis, O'Donnell, & Römer, 2015; Kyle, 2016; Kyle & Crossley, 2017; Madlener, 2015). Ellis and Ferreira-Junior (2009a), for example, revealed from analysis of interview excerpts that English-L2 interviewees' use of English verb-argument constructions was driven by the most frequent/prototypical exemplars in each construction type, mirroring tendencies of interviewers' utterances in English as a first language (L1). In addition, verb semantics appearing dominantly in these constructions was consistent with constructional meaning (e.g., *put* in caused-motion constructions, *give* in ditransitive constructions). Kyle and Crossley (2017) addressed the relation between English-L2 learners' constructional knowledge and English-L2 written proficiency by employing TOEFL writing data. They measured syntactic sophistication through indices of verb-argument construction frequency and association strength of these verbs and constructions. Results showed that novice English-L2 writers relied heavily on English verb-argument constructions occurring frequently in English, whereas more proficient English-L2 writers produced less frequent combinations of verbs and constructions in English.

Extending this stream, the present study explores how input characteristics affect L2 learners' written production. We pursue this research in two ways. One is to zoom in the initial stage of L2 development. One core area of investigation in the usage-based approach to L2 acquisition concerns the degree to which language input explains L2 learners' output as measured by comprehension and/or production of target language knowledge (e.g., Ellis et al., 2015). Revealing the precise nature of L2 input is thus crucial in this regard. This task, however, is not so easy as it seems to be, because investigating varied input to which an L2 learner is exposed is extremely challenging (cf. Kyle, 2016). Alternatively, researchers often estimate distributional properties of L2 input through those from L1 corpora

as a proxy for the L2 input (e.g., Ellis & Ferreira-Junior, 2009b; Kyle & Crossley, 2017). This practice assumes that L2 learners are surrounded with something similar to the target language so L1 corpora can be representative of L2 input. In this study, instead of relying on this widely accepted (yet unguaranteed) assumption, we aim to connect L2 beginners' writing performance to input characteristics of a textbook for L2 beginners used in formal instructional contexts. Textbooks are considered an essential type of L2 input (Römer, 2004) and were often employed as a primary source for investigation of L2 input in previous studies (e.g., Alsaif & Milton, 2012; Davis & Face, 2006). The range and type of input for L2 beginners are rather limited, which affords us an opportunity to investigate input-output relations involving L2 beginners' development of target language knowledge in a narrower and yet more direct way.

The other key approach used in this study is to employ an L2 that is typologically different from the major Indo-European languages. Most of the L2 literature under the usage-based approach have dealt with learning situations involving English-L2 (e.g., Ellis & Ferreira-Junior, 2009a, 2009b; Kyle & Crossley, 2017; McDonough & Kim, 2009; Year & Gordon, 2009). This invites a question of whether and to what degree implications of various-L1 English-L2 learning situations will also hold for English-L1 various-L2 learning contexts (cf. Cao, Sussman, Rios, Yan, Wang, Spray, & Mack, 2017; Coughlin & Tremblay, 2015; Lew-Williams & Fernald, 2010). What we pursue here is the latter: a situation where English-speaking learners acquire another language whose properties are considerably different from their L1. This way of investigation allows us to assess the generalisability of previous findings in English-L2 acquisition within the usage-based approach. Moreover, cross-linguistic differences between learners' L1 and L2 lead us to see how L2 beginners cope with acquiring L2 knowledge based on L2 input properties and L1-L2 differences.

We thus turn our attention to the early stage of learning L2 knowledge about Korean for adult English-speaking beginners of Korean. This study particularly focuses on Korean postpositions – function words indicating grammatical information about a content word to which they are attached (Sohn, 1999), oft-mentioned as a major source for difficulty in learning Korean as an L2 (e.g., Frenck-Mestre et al., 2019; Ha & Choi, 2012; Shin & Jung, in press). Most of the Korean postpositions are known to manifest many-to-many mappings between form and function (Choo & Kwak, 2008), and they tend to be omitted frequently in colloquial settings (Sohn, 1999), which poses challenges to L2 learners' acquisition of Korean. Research on L2 acquisition of Korean postpositions so far has been skewed towards analysis of either textbooks (e.g., Lee, 2012) or production data (e.g., Kim & Guo, 2016), leaving the issue of input-output relations for L2 Korean not entirely captured. The issue of L2 acquisition of Korean postpositions

for L1-English learners is still in its infancy (cf. Ha & Choi, 2012). Moreover, we have no clear understanding of possible effects of cross-linguistic differences on L1-English L2-Korean beginners' performance in response to L2 input characteristics.

The present study thus asks how L2 beginner input affects L2 beginner production with respect to Korean postpositions. We first examine learners' Korean textbook as a primary input source, focusing on the multiple form-function mapping of postpositions. We then compare learners' written production to the textbook input, measuring the extent to which the input characteristics are reflected in learner writing in light of postpositions. In doing so, our results will shed light on possible connections between input and output in L2 beginners' acquisition of target language knowledge, which has remained largely unaddressed. This will in turn suggest implications on learning-teaching a non-English-L2, particularly in the beginning stage of L2 development.

2. L2 acquisition of Korean postpositions: *-(n)un, -i/ka, -(l)ul,* and *-ey*

Korean is a Subject-Object-Verb language with overt case-marking by way of dedicated postpositions. Korean employs such structural cues as postpositions to identify individual nouns and their combinatorial operations in a sentence. Converging evidence shows that Korean speakers integrate grammatical information encoded in these function words with the structural characteristics of a sentence (e.g., Kim, 1999). Postpositions are thus crucial for Korean speakers to obtain necessary information about an event from pre-verbal elements.

Of various postpositions in Korean, we focus on four postposition types that serve as a basis for composing simple sentence structures. The first two types involve a topic marker *-(n)un* (*-un* after a consonant) and a nominative case marker *-i/ka* (*-i* after a consonant). *-(n)un* expresses topic/contrast (Sohn, 1999), most of which refers to old information in a context (e.g., Ko & Kwu, 2008). In contrast, *-i/ka* usually marks a subject in a sentence, expressing new information in the context (Choo & Kwak, 2008). In the Example (1), *-un* sets up a topic of the utterance (*onul* 'today') and contrasts *onul* 'today' with *nayil* 'tomorrow'; *-ka* indicates that *nay* 'I' is the subject of this utterance.

(1) onul-un nay-ka pappu-ta. nayil-un kwaynchanh-ta.
today-TOP I-NOM busy-SE tomorrow-TOP fine-SE
"As for today, I am busy. As for tomorrow, (I) am fine/available."

However, the distinction between *-(n)un* and *-i/ka* is not entirely clear due to the functions which they share. For example, *-(n)un* can mark a subject and *-i/ka* can

be used to mark a topic (e.g., Kim, 2016). They also work together when expressing focus, exclusiveness, genericity, or degree of power in information delivery (e.g., Han & Won, 2017), rendering it difficult to clarify the particular nature of each postposition.

The third type of postposition, *-(l)ul* (*-ul* after a consonant), serves mostly as an accusative case marker as in (2), generally indicating that a noun to which *-(l)ul* is attached is a direct object (Sohn, 1999). An object marked by *-(l)ul* is affected by action, movement, or effect denoted by the predicate in a sentence (Ko, 2004). Other than that, this postposition can also indicate such functions as destination, property of a direct object, an indirect object (in a ditransitive construction), and emphatic negation (Choo & Kwak, 2008).

(2) chayk-ul cwumwunhay-ss-ta.
book-ACC order.do-PST-SE
"(I) ordered a book."

The last postposition, *-ey,* is one of the representative polysemous postpositions in Korean. It is extensively found in situations where a speaker mentions either a static place as in (3) or time as in (4). *-ey* also indicates a goal 'to' in conjunction with movement verbs (e.g., *ka-* 'to go') (Choo & Kwak, 2008). In addition to these typical functions, *-ey* covers a broad range of functions such as an instrument, a norm, addition, an inanimate agent in passives, and an inanimate object indicating 'local' (Sohn, 1999).

(3) Mina-ka hakkyo-ey iss-ta.
Mina-NOM school-LOC exist-SE
"Mina is in school."

(4) achim-ey swuep-i iss-ta.
morning-TIM class-NOM exist-SE
"(I) have a class in the morning."

The question of how L2 learners of Korean acquire Korean postpositions has been one major area in studies of learning-teaching Korean. Postpositions are regarded as a crucial piece of knowledge to bring success in mastery of Korean as an L2 (e.g., Chu, 2009; Kim, 2015). However, they mostly involve multiple form-function mapping, and they are omitted frequently in colloquial settings. Learners of Korean are thus not exposed to positive evidence of appropriate postposition use for learning (Chu, 2009; Han, 2014). Learners' L1 knowledge also intervenes in their performance, modulating the degree to which they manifest knowledge about postpositions in Korean (e.g., Cho, 2006; Kim, 2013). Indeed, even advanced L2 learners of Korean still produce a significant number of post-

position errors (e.g., Ko et al., 2004). Despite the importance of postpositions in Korean, many challenges exist for L2 learners of Korean to overcome in the acquisition of Korean postpositions.

Learners have difficulty acquiring *-(n)un* and *-i/ka* due to the functional overlap in these postpositions. For instance, Oh and Park (2016) investigated *-(n)un* and *-i/ka* use by novice and advanced Chinese-speaking learners of Korean in comparison to that by native speakers of Korean. They found that the advanced learners and native speakers of Korean showed no difference in understanding *-i/ka* but divergence in comprehending *-(n)un*. They also showed that the degree to which the L2 learners understood functions of these postpositions varied by proficiency, which implies that accumulated exposure to specific functions of these postpositions may affect learners' acquisition of Korean postpositions.

Studies on L2 learners' use of *-(l)ul* seem to be partial in that most of the studies have simply reported error-like substitution of *-(l)ul* for other postpositions. Kim (2004), for example, reported from written data by 300 Japanese-speaking learners of Korean that the learners across all proficiency levels (beginner, intermediate, and advanced) misused *-(l)ul* at a high rate by replacing it with *-i/ka*. She ascribed this substitution to L1 interference from the similarity of some basic Korean transitive verbs to the corresponding Japanese intransitive verbs (e.g., *cohaha-* 'to like', *al-* 'to know'). This suggests L1-L2 differences as one promising source for Korean-L2 learners' acquisition of postpositions, which is supported by the attested challenge that non-English-L2 learners experience in acquisition of morphology (e.g., Jiang et al., 2011).

Research on the acquisition of *-ey* reports L2 learners' difficulty in learning its polysemous nature. To illustrate, Kim and Guo (2016) analysed spoken corpora created through picture description and video clip summary from intermediate and advanced Chinese-speaking learners of Korean. They showed that the intermediate-level learners understood functions related to location and time better than the others, suggesting an asymmetry in acquiring various functions involving that postposition. Another line of research documents L2 learners' confusion of *-ey* (indicating a static location or destination) with *-eyse* (indicating a place where a dynamic action takes place), with an overlap in expressing a location (e.g., Han, 2014; Kim, 2004).

Compared to voluminous studies on learners' comprehension and production (errors) of Korean postpositions, very little Korean-L2 research has been done specifically measuring the impact of input that learners receive on output that these learners produce. Only two studies so far addressed possible input-output connections in a broad context. One is Kim (2015) who compared production errors of *-i/ka* and *-(l)ul* from 360 L2 learners of Korean to expressions presented in syllabi, textbooks, and Test of Proficiency in Korean. It was found

that the learners, regardless of proficiency, experienced difficulty in applying these postpositions appropriately to expressions introduced in these materials. The other study, Lee and Ko (2013), tested advanced L2 learners' understanding of functions involving *-ey* with reference to those presented in learner textbooks and dictionaries. They reported that the learners struggled to match individual functions with example sentences that were representative of each function in the textbooks and dictionaries. Despite the findings of these studies, it is not entirely clear to what extent the input L2 learners receive can be associated with their output, because these studies did not consider distributional properties of target language items in the input. How Korean postpositions are learnt and produced specifically at the beginning stage of learning has been thus left unaddressed, which creates the need to investigate how language knowledge that L2 beginners of Korean establish is affected by properties of input.

With these in mind, the present study first probes how L2 beginners of Korean receive language input regarding Korean postpositions by analysing a Korean textbook as a primary input source, with a particular focus on the overlapping form-function relations of postpositions. This study then investigates how the beginners produce postpositions with reference to the input, by comparing learner writing to the textbook, so as to address input effects on output centring upon postpositions in Korean.

3. Characteristics of L2 input: Analysis of beginner textbook

3.1 Methods

The beginner-level Korean textbook, which was used in a university in the Unites States of America and was the textbook that participants in Section 4 learnt as well, was chosen for analysis. Beginner 1 has eight chapters consisting of 14 lesson points to be taught in relation to postpositions (see Appendix A for the entire composition of Beginner 1 in light of postpositions by chapter).

To investigate distributional properties of postpositions in the textbook, the entire textbook was converted into an electronic file and annotated automatically with Part-Of-Speech tagging by employing the open-source Python pipeline *UDPipe* (Straka & Straková, 2017). After this tagging process, we extracted sentences with any postposition as an explanatory purpose to better ascertain the frequency distribution involving the four postposition types. The extracted sentences were analysed manually with respect to the forms and functions of the postpositions.

On top of raw frequency information, we calculated *ΔP*, a unidirectional statistics for association strength that estimates the degree to which a form co-occurs with a function or vice versa (e.g., Allan, 1980; Desagulier, 2016). The *ΔP* score is calculated by using a contingency table (Table 1), with individual values of each cell inputted to a formula (5) where the degree of strength involving the outcome is conditioned by the cue.

Table 1. Association strength: *ΔP* (cf. ¬ = 'not')

	Outcome	**¬ Outcome**
Cue	a	b
¬ Cue	c	d

(5) $\Delta P_{(\text{Outcome} \mid \text{Cue})} = p(\text{Outcome} \mid \text{Cue}) - p(\text{Outcome} \mid \neg\ \text{Cue}) = a/(a+b) - c/(c+d)$.

For the interpretation of the *ΔP* score, the closer $\Delta P_{(\text{outcome}|\text{cue})}$ is to 1, the more likely the cue co-occurs with the outcome; the closer $\Delta P_{(\text{outcome}|\text{cue})}$ is to −1, the more unlikely the cue co-occurs with the outcome. This analysis affords us a more fine-grained understanding of frequency information for the issue of form-function associations involving postpositions.

One might claim other possible sources of input, such as K-pop and K-drama, as a potential contributor to L2 learning. To ensure the dominant input type for the beginners in this study, we conducted an additional survey asking them (as participants in learner writing) what kind of input they were normally exposed to. The most frequent sources to which they were exposed other than the textbook were K-drama/movie with English subtitles (73.91%) followed by flashcards or online platforms for vocabulary learning (30.43%), and the average exposure from these sources was 3.81 hours per week. However, it was found that learners watched K-dramas or movies *only with the aid of English translation*, and the other methods that they employed were for vocabulary learning, which may not address the acquisition of Korean postpositions. Therefore, despite possible influences of the other input sources, we assumed that the textbook was the major type of input for the beginners in this study.[1]

1. Other in-class input types such as workbooks and instruction were not considered in this study because they were mostly repeating the contents of the textbook. However, we acknowledge the possibility that language use by instructors and peers, which was not controllable in this study, might also have affected L2 beginners' acquisition of target language items. In addition, the survey method that we adopted might not have provided the entire picture of possi-

3.2 Results

As Tables 2 and 3 present, several forms and functions of postpositions occurred dominantly over the others. The top most frequent postposition forms (e.g., *-(n)un, -i/ka, -ey,* and *-(l)ul*; Table 2) and functions (e.g., *Topic, Nominative, Location, Accusative,* and *Time*; Table 3) explained around 80 and 86 per cent of the entire postposition use, respectively.

Table 2. Overall frequency and proportion of postposition use in the textbook: Form

Type	Frequency (#)	Proportion (%)
-(n)un	384	26.25
-i/ka	325	22.21
-ey	305	20.85
-(l)ul	162	11.07
…	…	…
Top 4 sum	1,176	80.39
Grand sum	1,463	

Note. The proportions of each form were calculated out of the grand sum of forms attested in the textbook.

Table 3. Overall frequency and proportion of postposition use in the textbook: Function

Type	Frequency (#)	Proportion (%)
Topic	384	26.25
Nominative	325	22.21
Location	302	20.64
Accusative	162	11.07
Time	96	6.56
…	…	…
Top 5 sum	1,268	86.67
Grand sum	1,463	

Note. The proportions of each function were calculated out of the grand sum of functions attested in the textbook.

ble L2 input sources for beginners, possibly weakening reliability/validity of our report. These aspects comprise another limitation of this study.

Moreover, particular forms and their prototypical functions occupied the highest ranks. To illustrate, a perfect match was found between *-(n)un* and *Topic, -i/ka* and *Nominative*, and *-(l)ul* and *Accusative* in their use, indicating that it was always the case that one form carried its designated function and vice versa in the case of these three postpositions.

In contrast, the use of *-ey* was connected to two functions in the textbook (*Location* and *Time)*. To determine whether these functions were equally used in the textbook, the frequency data was submitted to the Pearson chi-square goodness-of-fit test. The result yielded significance, $\chi^2(1) = 106.62$, $p < .001$, indicating that *Location* was used more frequently than *Time* in the textbook. ΔP scores (Table 4) revealed a more interesting picture regarding *-ey* and its corresponding functions used in the textbook. The degree of association between *-ey* and *Location* was similar to either direction, yielding a compelling rate of prediction power. In contrast, *Time* was a better predictor of *-ey* than vice versa, with a greater association in this direction (*Time* → *-ey*) than in the opposite direction (*-ey* → *Time*).

Table 4. ΔP score: *-ey* and its corresponding functions

	A = *-ey*, B = *Location*	**A = *-ey*, B = *Time***
$\Delta P_{(B\|A)}$	0.608	0.311
$\Delta P_{(A\|B)}$	0.611	0.846

In sum, textbook analysis revealed two major findings. First, the four postpositions whose forms and functions were highly connected to each other were intensively used over the others in the textbook. This indicates that input for beginners regarding Korean postpositions provided in the textbook was skewed towards specific forms, functions, and their pairings. It is unclear whether or not this tendency was intended by textbook developers, but this skewed distribution regarding postposition use in the textbook is expected to influence Korean-L2 beginners' acquisition of postpositions from early on. If these characteristics of input in the textbook affect the beginners' learning of Korean, we should expect that learners produce the postpositions similar to what they have received from the textbook: *-(n)un* for *Topic, -i/ka* for *Nominative, -(l)ul* for *Accusative*.

Second, amongst the two functions of *-ey, Location* outranked *Time* in the input distribution. In particular, ΔP scores revealed different degrees of association for individual functions involving *-ey*. This way of asymmetry invites two additional predictions: (1) based on raw input frequency, *Location* should become a prototypical function of *-ey* in the textbook, and (2) the beginners should

employ *-ey* in their writing at a higher rate when they need to use *Time* than when they need to use *Location*.

Based on these findings, we collected and analysed essays written by L1-English L2-Korean beginners who used the same textbook we investigated in this section, focusing on their use of postpositions relative to the characteristics of the textbook.

4. Characteristics of L2 output (with reference to L2 input): Analysis of learner writing

4.1 Methods

4.1.1 *Participants*

Twenty-three English-speaking undergraduate students attending a university in the United States participated in a writing activity. They had taken the first half beginner-level Korean language course and started to take the second half at the moment of data collection. We classified the participants uniformly as beginners on the basis of the course level that they were taking, interview reports from an instructor, and separate self-assessment (Lee-Ellis, 2009) for proficiency measurement (see Appendix B for the details about the results of self-assessment).

4.1.2 *Essay writing*

Participants were asked to write an essay by describing a series of scenes in an 8-cut cartoon in 20 minutes with no limit to the length (see Appendix C for the cartoon used for the writing). We chose narrative as a genre for writing in consideration of participants' overall Korean language proficiency. The cartoon was designed to elicit all the postpositions relevant to this study. Participants were encouraged to describe what was happening in the cartoon in detail. The writing session was administered by the instructor of the class, and the participants were not allowed to use any electronic devices during the session.

4.1.3 *Data coding and analysis*

The essays were converted into electronic files and annotated manually due to the errors made by the participants. All the postposition occurrences that fell into acceptable use were included in the analysis. The proportion of errors was 10.05% (22 out of 219 cases). Table 5 exemplifies the types of errors that participants made that were not counted as acceptable use.

Appropriateness of the participants' use of the four postpositions was cross-validated by two external coders, all of whom were native speakers of Korean. The

Table 5. Examples of postposition use errors

Type	Example	Reason
Inappropriate use	theylleypicen-i pwa-yo television-NOM watch-SE "The man watches television." (from participant 2)	*-i* (*Nominative*) must be *-ul* (*Accusative*)
	namca-lul ilena-yo. man-ACC get.up-SE "The man gets up." (from participant 9)	*-lul* (*Accusative*) must be *-ka* (*Nominative*)
	koyangi-nun ilkop.si-eyse ca-yo. cat-TOP seven.hour-LOC sleep-SE "The cat sleeps at seven." (from participant 15)	*-eyse* (*Location*) must be *-ey* (*Time*)
Redundant use	namca-nun uyca-ka wi-ey iss-eyo man-TOP chair-NOM above-LOC exist-SE "The man is on (top of) the chair." (from participant 4)	*-ka* (*Nominative*) must be deleted
	ohwu yeses.si-ey i-yeyyo. afternoon six.hour-TIM be-SE "It is 6:00 pm." (from participant 6)	*-ey* (*Time*) must be deleted

agreement rate amongst the coders on the appropriateness of postposition use was 0.942 (244 out of 259 cases), and instances that produced disagreement between the coders were resolved after the coders went over the individual cases.

4.2 Results

As Tables 6 and 7 present, the way that participants produced postpositions in their writing bears a curious resemblance to the tendency observed in the textbook (cf. Tables 2 and 3). We found that the forms and functions involving the four postpositions of interest in this study explained almost 90 per cent of the overall postposition use in learner writing. It was also found that the particular forms and their prototypical functions were strongly connected to each other in production as well: *-i/ka* and *Nominative, -(l)ul* and *Accusative, -(n)un* and *Topic*, and *-ey* and *Time/Location*. These general trends were precisely what we reported in the textbook analysis in Section 3.

Table 6. Overall frequency and proportion of postposition use in learner writing: Form

Type	Frequency (#)	Proportion (%)
-i/ka	62	31.47
-(l)ul	42	21.32
-(n)un	35	17.77
-ey	35	17.77
…	…	
Top 4 sum	174	88.32
Grand sum	197	

Note. The proportions of each form were calculated out of the grand sum of forms attested in learner writing.

Table 7. Overall frequency and proportion of postposition use in learner writing: Function

Type	Frequency (#)	Proportion (%)
Nominative	62	31.47
Accusative	42	21.32
Topic	35	17.77
Time	25	12.69
Location	13	6.60
…		
Top 5 sum	177	89.84
Grand sum	197	

Note. The proportions of each function were calculated out of the grand sum of functions attested in learner writing.

Moreover, Pearson contingency coefficients (Table 8) showed a positive relationship between the learner writing and the textbook. This indicates that the textbook input was predictive of the learner output with respect to the four postpositions of interest in this study. These findings suggest that frequency distribution of the postposition use in the beginner textbook was reflected in the beginners' use of target language items, supporting the major argument of the usage-based approach.

However, participants' use of individual postpositions diverged relative to the tendency found in the textbook. For example, *-(n)un* and *-i/ka* (and their corresponding functions) were dominant both in the textbook and in the learner

Table 8. Pearson contingency coefficients: Textbook and learner writing

Type	Contingency coefficient	*p*
Form	.523	< .001
Function	.526	

writing, but participants used the two postpositions in a reversed manner that the textbook provided them with. They over-produced *-(l)ul* compared to their use of the other postpositions and the corresponding input distribution in the textbook. Participants' use of *-ey* was also inconsistent with the input distribution: the textbook provided *-ey* with *Location* far more frequently than *-ey* with *Time*, but participants preferred to use *Time* over *Location.*

We revisit each point in the next section, highlighting L1-L2 differences and form-function mapping involving these postpositions.

5. Discussions and conclusion

The present study investigated how L2 textbook input affects L2 written production, focusing on the use of postpositions for beginners, via analyses of a textbook and learner writing. Textbook analysis showed that the occurrence of postpositions in the textbook was skewed towards several postposition types with forms and functions strongly connected. Learner writing analysis revealed that the skewedness in the textbook was generally reflected in beginners' written production, but that individual postpositions showed disparity in their use between the textbook and the writing.

5.1 Implications of the findings

The global-level similarity between the textbook and learner writing with respect to postposition use indicates the connection between textbook input and learner production for L2 beginners. Given that our beginner participants had little exposure to Korean before they took Korean language courses, it is reasonably clear that input from the textbook guided their understanding and use of postpositions in the initial stage of language learning considerably. This lends support to the core assumption of the usage-based approach that emphasises the role of input for language development.

The beginners' use of individual postpositions is worthy of investigation. Participants produced *-i/ka* at a higher rate and *-(n)un* at a lower rate than was observed in the textbook. One promising reason for this discrepancy comes from

cross-linguistic differences between learners' native language (English) and target language (Korean), as suggested in previous research (e.g., Jiang et al., 2011; Kim, 2004). Korean, as a topic-prominent language, differentiates a subject (marked by the nominative case marker *-i/ka*) from a topic (marked by the topic marker *-(n)un*) structurally (Sohn, 1999). In contrast, English is a subject-prominent language with no structural distinction between a subject and a topic (Li & Thompson, 1976). This difference leads to a situation where knowledge about *-i/ka* can be assisted by English, but knowledge about *-(n)un* cannot be searchable in English. This aspect may have influenced our English-speaking beginners' reliance on the two postpositions such that participants used *-i/ka* more as a substitution of *-(n)un*.

If this interpretation is valid, we may find cross-linguistic influences on the acquisition of Korean postpositions similar to the issue of *-(n)un* and *-i/ka*. Indeed, there is a case where two postpositions are interchangeable in indicating the same function in Korean but only one side of knowledge is searchable in English. For example, the locational *-ey* and the accusative *-(l)ul*, when accompanying a movement verb, are interchangeable with the core meaning intact (e.g., *hakkyo-ey/lul ka-ss-ta* 'I went to school.'). In this case, *-ey* corresponds to the English preposition 'to' as an indicator of direction, but there is no correspondence of the accusative *-(l)ul* in English. Future research will benefit from exploring how L2 learners acquire this kind of knowledge engaging in cross-linguistic differences between the native language and the target language(s).

Next, over-production of *-(l)ul* relative to the rate of occurrence in the textbook suggests that the way that form-function mapping is presented to learners affects the success of L2 learning, particularly in the initial stage of L2 development. The textbook provided a uniform form-function pairing (*-(l)ul* & *Accusative*) for this postposition, in contrast to *-(n)un* and *-i/ka* where the individual form-function pairings show overlap in their manifestation. Presenting the consistent, invariable mapping involving *-(l)ul* intensively may have allowed the beginners in this study to form a strong basis on how this postposition works, possibly leading to constant use of the postposition when needed in their writing. This interpretation aligns with the role of consistency of form-function mapping (e.g., Cameron-Faulkner et al., 2007), together with the manner that frequency information is delivered (e.g., Goldberg, Casenhiser, & Sethuraman, 2004), in boosting the effectiveness of learning.

In a broader context, this implication is consistent with the contribution of skewed input to the early stage of learning. There is a debate on the effectiveness of skewed/balanced input in L2 learning (e.g., McDonough & Nekrasova-Becker, 2014; Nakamura, 2012), and some studies argue that skewed input (comprising a single high frequent exemplar that is also prototypical in its meaning/function)

assists learners' optimisation of language acquisition processes by providing a fix on the target item (e.g., Casenhiser & Goldberg, 2005; Ellis & Ferreira-Junior, 2009b). Our finding supports their idea that low-variance, yet frequently-attested, item in the input boosts beginners' formation of target knowledge effectively. Indeed, participants in this study produced *-(n)un* and *-i/ka* very frequently in an appropriate manner, the reason of which is ascribable to the mapping nature: a uniform form-function association (despite the overlapping nature and cross-linguistic influences). Similarly, the fact that the beginners' use of *-ey* did not resemble the frequency tendency in the textbook implies that they may have been distracted from getting a fix on the target item early in acquisition because of two functions for one form in the input. Note that, however, we are not against benefits of balanced input in language learning; the supportive role of balanced input in L2 learners' acquisition of Korean postpositions should be fully incorporated into future research.

Regarding the postposition *-ey*, the beginners' production did not fully align with the tendency in the textbook: *Time* outranked *Location* in the writing whereas the reverse happened in the textbook. This may stem from task effects: the change of time appeared three times in the cartoon, but the change of place happened once (from inside to outside the house), which might have affected the production of *-ey* to indicate *Location*. The beginners might also have been susceptible to possible interference from other postpositions in expressing a place (e.g., *-eyse*). Polysemy involving *-ey* in the textbook may also have influenced their production of this postposition. The beginners encountered two related, yet distinctive, functions of *-ey*, which means that the mapping of *-ey* and its corresponding functions was not straightforward compared to the other three postpositions. This characteristic involving *-ey* may thus have prohibited the beginners from getting a fix on the use of *-ey* from the input.

Upon closer inspection, the relatively higher rate of production of *-ey* for *Time* than for *Location* is also explainable by the asymmetric degrees of form-function association, as attested in the textbook analysis. We found in the ΔP scores that *Time* was more predictive of the use of *-ey* than *Location*. The beginners may have been tuned to this asymmetry, resulting in more use of *-ey* for *Time* than *Location* when needed. This possibility should be further verified by exploring effects of multiple form-function pairings involving Korean postpositions in input on beginners' (and the other proficiency groups') use of these pairings in their comprehension/production.

5.2 Implications for the early stage of L2 learning-teaching

Based on the findings of this study, it is reasonably clear that input, intertwined with L1-L2 differences and characteristics of form-function mapping, plays an important role in the initial stage of L2 acquisition. This calls for systematic accounts of how to compose/present input so that beginners can benefit from what they receive. As L2 learners' exposure to the target language is largely limited to formal classroom settings, L2 input should be enhanced in a way that not only reflects properties of the target language knowledge but also ensures the effectiveness of learning through the input. We thus suggest that textbooks need to provide beginners with structured input centring upon target items in the following ways.

First, providing clear one-to-one form-function mapping of the target language knowledge would encourage beginners to effectively acquire its basic use. Korean postpositions manifest many-to-many pairings between form and function (Choo & Kwak, 2008), which may prevent beginners from getting an initial reference point regarding how to use them appropriately. To expedite learning of the specifics involving a function word such as Korean postpositions, presenting beginners with its prototypical form-function pairing intensively may serve as one core strategy, considering the effectiveness of skewed input on the early stage of language development (e.g., Casenhiser & Goldberg, 2005; Ellis & Ferreira-Junior, 2009b). A fine-grained investigation of properties of target items through actual language use is a prerequisite for this purpose. Some studies reported representative use of postpositions through various perspectives (e.g., Jung, 2020; Kang & Kim, 2009; Türker, 2005); future research should precisely measure the degree to which L2-Korean textbooks reflect characteristics of target language use.

Explicit exposure to target items, with proper intervention, would also assist L2 beginners' understanding and use of the items, particularly if they are not searchable in the learners' L1. We have seen an asymmetry in the beginners' writing regarding *-(n)un* and *-i/ka*, which was not found in the textbook. Part of the reason involves cross-linguistic differences between the target language (Korean) and the learners' L1 (English). Highlighting this difference through input enhancement (e.g., Smith, 1991) from the outset may afford beginners a better chance to raise sensitivity to the functional differences of each postposition. An empirical follow-up experiment would verify whether this way of intervention is effective for beginners to alleviate difficulty in L2 acquisition induced by cross-linguistic differences.

5.3 Limitations and directions for future study

There is still room for future study. We targeted L2 beginners of Korean who were taking the second half of the elementary course, implying that this study does not provide a full explanation of L2 development. This leaves open the question of, for example, how the learners' knowledge about multiple form-function pairings of Korean postpositions develop longitudinally with regard to the change of input distribution in textbooks as learning proceeds.

This study also limited its investigation to one beginner textbook and 23 essays from the beginners who used the same textbook, in order to conservatively measure input-output relations. This might be problematic in terms of the extent to which the findings of this study achieve generalisability. Comparisons across various L2 textbooks and more instances/types of learner writing will allow for a stronger argument in relation to input-output relations that we attempted to address in this study. Further inquiry should thus include a multifaceted analysis of learner output in relation to diverse types of input relating to L2 acquisition.

In addition, we utilised the explicit way of output (written production) as a reflection of the influence of input (textbook), focusing on frequency effects and morpho-syntactic knowledge in L2 acquisition. This renders how beginners proceed to learning internally unclear (cf. Han, Park, & Comb, 2008). Moreover, there are factors that we could not control and that possibly interfered with the learners' performance (e.g., lexical items combined with postpositions, task environment, individual differences). We admit that the beginners' deployment of 'invisible' factors, along with other confounding variables, needs to be addressed more rigorously, with designated assessment and/or discussions about how input processing occurred internally in L2 beginners.

Despite these limitations, we believe that the implications of this study open the window to the direct input-output connection for L2 development. This study thus points towards robust areas for future research, in consideration of realistic L2 input and frequency effects (together with various [non-]linguistic factors) on explaining developmental trajectories of L2 learners.

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Abbreviations

ACC accusative case marker
LOC locative marker
NOM nominative case marker
PST past tense marker
SE sentence ender
TIM time marker
TOP topic marker

References

Abbot-Smith, K., & Tomasello, M. (2006). Exemplar-learning and schematization in a usage-based account of syntactic acquisition. *The Linguistic Review*, *23*(3), 275–290. https://doi.org/10.1515/TLR.2006.011

Allan, L. G. (1980). A note on measurement of contingency between two binary variables in judgment tasks. *Bulletin of the Psychonomic Society*, *15*(3), 147–149. https://doi.org/10.3758/BF03334492

Alsaif, A., & Milton, J. (2012). Vocabulary input from school textbooks as a potential contributor to the small uptake gained by English as a foreign language learners in Saudi Arabia. *The Language Learning Journal*, *40*(1), 21–33. https://doi.org/10.1080/09571736.2012.658221

Ambridge, B., Kidd, E., Rowland, C. F., & Theakston, A. L. (2015). The ubiquity of frequency effects in first language acquisition. *Journal of Child Language*, *42*(2), 239–273. https://doi.org/10.1017/S030500091400049X

Behrens, H. (2009). Usage-based and emergentist approaches to language acquisition. *Linguistics*, *47*(2), 383–411. https://doi.org/10.1515/LING.2009.014

Cao, F., Sussman, B. L., Rios, V., Yan, X., Wang, Z., Spray, G. J., & Mack, R. M. (2017). Different mechanisms in learning different second languages: Evidence from English speakers learning Chinese and Spanish. *NeuroImage*, *148*, 284–295. https://doi.org/10.1016/j.neuroimage.2017.01.042

Casenhiser, D., & Goldberg, A. E. (2005). Fast mapping between a phrasal form and meaning. *Developmental Science*, *8*(6), 500–508. https://doi.org/10.1111/j.1467-7687.2005.00441.x

Cho, I. J. (2006). Comparative linguistic analysis of subject and object case marking errors by English speaking learners of Korean. *Journal of Korean Language Education*, *17*(3), 281–299.

Choo, M., & Kwak, H. Y. (2008). *Using Korean*. Cambridge University Press. https://doi.org/10.1017/CBO9781139168496

Chu, K-H. (2009). *Hankwuke mwunpep kyoyuklon: Cosalul taysangulo* [Korean grammar education: Regarding particles]. Pakiceng.

Coughlin, C. E., & Tremblay, A. (2015). Morphological decomposition in native and non-native French speakers. *Bilingualism: Language and Cognition*, *18*(3), 524–542. https://doi.org/10.1017/S1366728914000200

Davis, M., & Face, T. (2006). Vocabulary coverage in Spanish textbooks: How representatives is it? In N. Sagarra & A. J. Toribio (Eds.), *Selected proceedings of the 9th Hispanic Linguistics Symposium* (pp. 132–143). Cascadilla Proceedings Project.

Dąbrowska, E. (2008). The effects of frequency and neighbourhood density on adult speakers' productivity with Polish case inflections: An empirical test of usage-based approaches to morphology. *Journal of Memory and Language*, *58*(4), 931–951. https://doi.org/10.1016/j.jml.2007.11.005

Desagulier, G. (2016). A lesson from associative learning: Asymmetry and productivity in multiple-slot constructions. *Corpus Linguistics and Linguistic Theory*, *12*(2), 173–219. https://doi.org/10.1515/cllt-2015-0012

Ellis, N. C. (2002). Frequency effects in language processing: A review with implications for theories of implicit and explicit language acquisition. *Studies in Second Language Acquisition*, *24*(2), 143–188. https://doi.org/10.1017/S0272263102002024

Ellis, N. C., & Ferreira-Junior, F. (2009a). Construction learning as a function of frequency, frequency distribution, and function. *The Modern Language Journal*, *93*(3), 370–385. https://doi.org/10.1111/j.1540-4781.2009.00896.x

Ellis, N. C., & Ferreira-Junior, F. (2009b). Constructions and their acquisition: Islands and the distinctiveness of their occupancy. *Annual Review of Cognitive Linguistics*, *7*(1), 188–221. https://doi.org/10.1075/arcl.7.08ell

Ellis, N. C., O'Donnell, M. B., & Römer, U. (2015). Usage-based language learning. In B. MacWhinney & W. O'Grady (Eds.), *The handbook of language emergence* (pp. 163–180). John Wiley & Sons.

Frenck-Mestre, C., Kim, S. K., Choo, H., Ghio, A., Herschensohn, J., & Koh, S. (2019). Look and listen! The online processing of Korean case by native and non-native speakers. *Language, Cognition and Neuroscience*, *34*(3), 385–404. https://doi.org/10.1080/23273798.2018.1549332

Goldberg, A. E. (2019). *Explain me this: Creativity, competition, and the partial productivity of constructions*. Princeton University Press.

Goldberg, A. E., Casenhiser, D. M., & Sethuraman, N. (2004). Learning argument structure generalizations. *Cognitive Linguistics*, *15*(3), 289–316. https://doi.org/10.1515/cogl.2004.011

Ha, K., & Choi, S. (2012). Adult second language learners' acquisition of word order and case markers in Korean. *Korean Language in America*, *17*, 1–23.

Han, S-M. (2014). An analysis of errors on the usage of particles in the discussions of advanced Korean language learners. *Bilingual Research*, *57*, 223–255. https://doi.org/10.17296/korbil.2014..57.223

Han, S. H., & Won, M. J. (2017). Analysis of distribution and selection factor of 'un/nun' and 'i/ka' in the native speaker corpus and the Korean learner's corpus. *Enesasilkwa kwancem* [Language Facts and Perspectives], *41*, 49–83. https://doi.org/10.20988/lfp.2017.41..49

Han, Z., Park, E. S., & Combs, C. (2008). Textual enhancement of input: Issues and possibilities. *Applied Linguistics*, *29*(4), 597–618. https://doi.org/10.1093/applin/amn010

Hilpert, M., & Diessel, H. (2017). Entrenchment in Construction Grammar. In H.-J. Schmid (Eds.), *Entrenchment and the psychology of language learning: How we reorganize and adapt linguistic knowledge* (pp. 57–74). Walter de Gruyter.

Jiang, N., Novokshanova, E., Masuda, K., & Wang, X. (2011). Morphological congruency and the acquisition of L2 morphemes. *Language Learning*, *61*(3), 940–967. https://doi.org/10.1111/j.1467-9922.2010.00627.x

Jung, B. K. (2020). *Verb use for the locative functions of three adverbial postpositions (-ey, -eyse, and -(u)lo) in Korean: Analysis of L1-Korean corpora and L2-Korean textbooks* (Unpublished doctoral dissertation). University of Hawai'i.

Kang, B.M., & Kim, H.G. (2009). *Hankwuke sayong pindo* [Usage frequency of Korean language]. Hankwuk Mwunhwsa.

Kim, J.-E. (2004). The Japanese learners misuse aspect for Korean particles. *Journal of Korean Language Education*, *15*(1), 1–31.

Kim, J.-E. (2015). Analysis on interrelation between error of particles by learners of Korean language and education contents. *Journal of Korean Language Education*, *26*(4), 1–38. https://doi.org/10.18209/iakle.2015.26.4.1

Kim, M.-J. (2013). Analysis of error of particles in Korean language among Chinese students in Korea. *Yengcuemwun* [Yeongju Literacy Society], *26*, 61–89.

Kim, Y. (1999). The effects of case marking information on Korean sentence processing. *Language and Cognitive Processes*, *14*(5/6), 687–714. https://doi.org/10.1080/016909699386239

Kim, Y. (2016). A study on the semantic function and situational model of 'eun/neun' and 'yi/ga': Focusing on basic level learners. *Language & Information Society*, *28*, 59–107. https://doi.org/10.29211/soli.2016.28..003

Kim, Y.-J., & Guo, J. (2016). A study on the acquisition of Korean adverbial case marker *ey* in spoken production by Chinese Korean L2 learners. *Kwukekyoyukyenkwu* [Korean Education Research], *38*, 1–26. https://doi.org/10.17313/jkorle.2016..38.1

Ko, S.-J. (2004). *Hyentay Hankwuke cosauy yenkwu I* [Research on modern Korean particles]. Hankwukmwunhwasa.

Ko, S.-J., Kim, M.O., Kim, J., Seo, S-G., Jung, H-J., & Han, S.H. (2004). *'Hankwuke haksupca' malmwungchiwa olyu pwunsek* ['Korean learners' corpus and error analysis]. Hankwukmwunhwasa.

Ko, Y.K., & Kwu, P-K. (2008). *Wulimal mwunpeplon* [The Korean grammar]. Cipmwuntang.

Kyle, K. (2016). *Measuring syntactic development in L2 writing: Fine grained indices of syntactic complexity and usage-based indices of syntactic sophistication* (Unpublished doctoral dissertation). Georgia State University.

Kyle, K., & Crossley, S. (2017). Assessing syntactic sophistication in L2 writing: A usage-based approach. *Language Testing*, *34*(4), 513–535. https://doi.org/10.1177/0265532217712554

Langacker, R.W. (1987). *Foundations of cognitive grammar: Theoretical prerequisites* (Vol. *1*). Stanford University Press.

Lee, C.-K., & Ko, Y-J. (2013). Hankwuke kokup haksupcauy cosa 'ey'ey tayhan insikkwa sayong yangsang yenkwu [The degree of advanced Korean learners' recognition of postposition]. *Emwunnoncip* [The Journal of Language & Literature], *56*, 485–511.

Lee, J. (2012). Analyzing errors in the use of particles by Japanese learners of Korean – For students of University of Shimane. *Bilingual Research*, *49*, 299–319. Retrieved on November 14, 2018, from https://doi.org/10.17296/korbil.2012..49.299

Lee, Y. (2012). A study on the development of Korean grammar textbooks for English-speaking learners based on an analysis of textbooks and learners' needs. *Journal of Korean Language Education*, *23*(3), 289–314. https://doi.org/10.18209/iakle.2012.23.3.289

Lee-Ellis, S. (2009). The development and validation of a Korean C-Test using Rasch Analysis. *Language Testing*, *26*(2), 245–274. https://doi.org/10.1177/0265532208101007

Lew-Williams, C., & Fernald, A. (2010). Real-time processing of gender-marked articles by native and non-native Spanish speakers. *Journal of Memory and Language*, *63*(4), 447–464. https://doi.org/10.1016/j.jml.2010.07.003

Li, C.N., & Thomson, S.A. (1976). Subject and topic: A new typology of language. In C.N. Li (Eds.), *Subject and topic* (pp. 457–489). Academic Press.

Madlener, K. (2015). *Frequency effects in instructed second language acquisition* (Vol. *29*). Walter de Gruyter GmbH & Co KG. https://doi.org/10.1515/9783110405538

McDonough, K., & Kim, Y. (2009). Syntactic priming, type frequency, and EFL learners' production of *wh*-questions. *The Modern Language Journal*, *93*(3), 386–398. https://doi.org/10.1111/j.1540-4781.2009.00897.x

McDonough, K., & Nekrasova-Becker, T. (2014). Comparing the effect of skewed and balanced input on English as a foreign language learners' comprehension of the double-object dative construction. *Applied Psycholinguistics*, *35*(2), 419–442. https://doi.org/10.1017/S0142716412000446

Nakamura, D. (2012). Input skewedness, consistency, and order of frequent verbs in frequency-driven second language construction learning: A replication and extension of Casenhiser and Goldberg (2005) to adult second language acquisition. *International Review of Applied Linguistics in Language Teaching*, *50*(1), 1–37. Retrieved on December 21, 2018, from https://doi.org/10.1515/iral-2012-0001

Oh, A., & Park, S.H. (2016). Chinese L2 acquisition of Korean particle i/ka and eun/nun. *Enesasilkwa kwancem*, *39*, 221–247. https://doi.org/10.20988/lfp.2016.39..221

Römer, U. (2004). Comparing real and ideal language learner input: The use of an EFL textbook corpus in corpus linguistics and language teaching. In G. Aston, S. Bernardini, & D. Steward (Eds.), *Corpora and language learners* (pp. 151–168). John Benjamins Pub. https://doi.org/10.1075/scl.17.12rom

Shin, G.-H., & Jung, B.K. (in press). Automatic analysis of learner corpora in Korean: Written production of Korean passive constructions for Mandarin-speaking learners of Korean. *International Journal of Learner Corpus Research*.

Smith, M.S. (1991). Speaking to many minds: On the relevance of different types of language information for the L2 learner. *Interlanguage Studies Bulletin (Utrecht)*, *7*(2), 118–132. https://doi.org/10.1177/026765839100700204

Sohn, H.M. (1999). *The Korean language*. Cambridge University Press.

Stefanowitsch, A. (2011). Constructional preemption by contextual mismatch: A corpus-linguistic investigation. *Cognitive Linguistics*, *22*(1), 107–129. https://doi.org/10.1515/cogl.2011.005

Straka, M., & Straková, J. (2017). Tokenizing, POS Tagging, lemmatizing and parsing UD 2.0 with UDPipe. In J. Hajič & D. Zeman (Eds.), *Proceedings of the CoNLL 2017 "Shared task: Multilingual parsing from raw text to universal dependencies"* (pp. 88–99). Association for Computational Linguistics. https://doi.org/10.18653/v1/K17-3009

Theakston, A.L. (2004). The role of entrenchment in children's and adults' performance on grammaticality judgment tasks. *Cognitive Development*, *19*(1), 15–34. https://doi.org/10.1016/j.cogdev.2003.08.001

Tomasello, M. (2003). *Constructing a language: A usage-based theory of language acquisition*. Cambridge, MA: Harvard University Press.

Türker, E. (2005). *Locative expressions in Korean and Turkish: A cognitive grammar approach* (Unpublished doctoral dissertation). University of Hawaii at Manoa.

Year, J., & Gordon, P. (2009). Korean speakers' acquisition of the English ditransitive construction: The role of verb prototype, input distribution, and frequency. *The Modern Language Journal*, *93*(3), 399–417. https://doi.org/10.1111/j.1540-4781.2009.00898.x

Appendix A. Information about Beginner 1

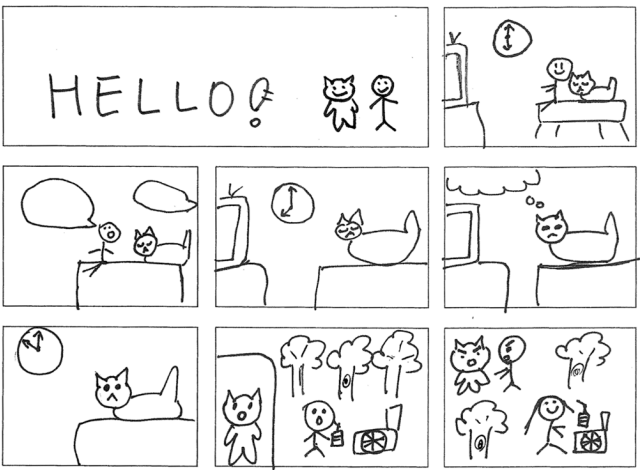
Lesson	Lesson point for postposition
1	1.1. Equational expressions: N1-*(n)un* N2-*ieyyo/yeyyo* [N1 is N2]
	1.3. Comparting items: *-(n)un* vs. *-to* [Contrastive vs. Inclusive]
	1.5. Negative equational expression: N1-*(n)un* N2-*i/ka anieyyo* [N1 is not N2]
2	2.1. The subject postposition: *-i/ka*
	2.2. Expressing location: [Place]*ey isseyo* [Subject is in [Place]]
	2.3. Changing the topic: postposition *-(n)un*
3	3.1. Expressing possession: N-*i/ka isseyo/epseyo* [There is/isn't N, I have/don't have N]
	3.3. The object postposition: *-(l)ul*
	3.4. Omission of postposition
4	4.4. Expressing possessive relation: N1(*-uy*) N2 [N1 (possessor) N2 (possessed)]
5	5.1. The locational postposition: *-eyse*
	5.3. *-(u)le* [place]*ey kayo* [go to [place] in order to do something]
6	6.1. N-*(u)lo* ['by means of N']
8	8.4. N-*(u)lo* ['towards N']

Appendix B. Results: Self-assessment questionnaire (from Lee-Ellis, 2009)

Mean (out of 75)	SD	Max	Min
32.17	6.07	42	22

Note. The survey consisted of 15 questions on a scale of 5, from 1 (very difficult) to 5 (very easy).

Appendix C. Cartoon for essay writing



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