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L2 ACQUISITION OF KOREAN *wh* QUANTIFIERS: L1 TRANSFER AT THE LEXICAL MAPPING*

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1 Introduction

This paper, as an interim report on a wider project, aims to investigate L2 knowledge of Korean *wh*-existential quantifiers by Japanese and English speaking learners. *Wh*-quantifiers are available in many languages including Korean, Japanese and Chinese. Their isomorphic function with *Wh* question words allows us to test the effect of L1 since *wh* words in Korean, Japanese and English contrast in an interesting way in terms of their morphological shapes, function and distribution. We adopt the Feature Reassembly Hypothesis (Lardiere, 2005, 2008, 2009) as an L2 model, and assume that the effect of L1 can manifest itself at the mapping process, which consequently determines the feature reassembly process. Most of studies on the Feature Reassembly Hypothesis have tested the Feature Reassembly process, while mapping process has not been widely investigated. This study observes and compares all mapping possibilities in the interlanguage of L2 Korean *wh*-existential quantifiers by two L1 groups, Japanese and English. The paper is organised as follows: section 2 overviews main assumptions of the Feature Reassembly Hypothesis. Section 3 compares the patterns of *wh*-existential quantifiers in Korean with their equivalents in Japanese and English. This will base our predictions with respect to the mapping process. In Section 4, we briefly presents main findings by Choi (2009), a similar study that investigates the same target properties as the current study. Section 5 presents the experimental study and results, followed by the discussion in section discussion. Section 7 concludes the paper.

2 The Feature Reassembly Hypothesis: main assumptions

The Feature Reassembly Hypothesis (FRH, henceforth) was proposed by Lardiere (2005, 2008 and 2009) to model a process how L1 based interlanguage grammar restructures, triggered by L2 input. It follows the main assumptions by Full Transfer/Full Access (FTFA) (Schwartz and Sprouse, 1996), whereby L2 develops with full access to Universal Grammar (Full Transfer) and

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the full representation of L1 defines the initial shape of L2 interlanguage (Full Transfer). However, Lardiere (ibid.) specially defines L2 acquisition as a process of manipulating feature specifications of lexical items transferred from L1, motivated by L2 Input. Within this model, L2 learners face two main acquisition tasks, namely mapping task and feature reassembly task. In the mapping task, learners, when exposed to L2, project equivalences between L1 and L2 based on morpholexical correspondence and create an Interlanguage lexicon. This lexicon consists of L2 lexical items, each of which contains feature specifications that belong to L1. Once mapping is established, the feature set of a given interlanguage lexical item may go through feature reassembly. In some cases, no reassembly is required if the feature specification of a lexical time is not discrepant from L2 input. Otherwise, feature reassembly occurs, that is, the feature set of a lexical item will unpack, and delete/add features from the UG feature inventory, as motivated by L2 input. The feature reassembly task depends on the mapping possibilities. That is, the mapping task is a prerequisite for the feature reassembly task: the former determines the latter, as argued in Gil and Marsden (2013).

It is not yet fully understood what principles underlie the mapping possibilities. Mapping may proceed from the morphological equivalence, or from the functional or distributional equivalence. However, languages differ and there may not be straightforward equivalences between the membership of their respective lexica. For instance, an overt lexical item in one language may not be necessarily expressed overtly, but covertly in another language. Or one lexical item in one language may be realised in many lexical forms in another language or vice versa, or it may not have an equivalent in another language in similar morphological shape or category. Both the mapping possibilities and the feature reassembly task are intertwined to predict the degree of difficulty that L2 learners face (Gil and Marsden, 2013, Slabakova, 2009). For instance, Slabakova (2009) offers the following cline of difficulties, considering whether a certain feature is expressed overtly or covertly (by context), and whether a given mapping requires feature reassembly.

(1) The cline of difficulty in L2 acquisition (Slabakova, 2009:Fig 1, p.321)

Harder to acquire		*Easier to acquire*
$F_{context}$ to $F_{morpheme}$	$F_{morpheme}$ to $F_{morpheme}$ but re-assembly required	$F_{morpheme}$ to $F_{morpheme}$ no re-assembly required

The full spectrum of mapping possibilities have not yet been tested in SLA, and the current study targets to consider the full mapping possibilities so as to test the extent of L1 transfer within the FRH.

3 Linguistic Properties

In this section, we briefly illustrate Korean *wh*-existential quantifiers as the L2 target property and compare their equivalents in L1 Japanese and L1 English. We compare their morphological properties and the feature specifications of the equivalent lexical items to draw on learnability problems that face the L2 learners with respect to the mapping and feature reassembly processes.

3.1 L2 Target property: Korean *wh*-existential quantifiers

Wh words in Korean have a double function: they can serve as *wh*-question words ($\mathrm{WH_Q}$) and *Wh*-indefinites ($\mathrm{WH_{Ind}}$). When *wh* occurs alone without any quantificational particles (bare WH, henceforth), it can be interpreted as a *wh* question word, or as an existential quantifier. Therefore, a question sentence such as (2a) is potentially ambiguous between *wh*-question and *yes-no* question, as indicated in the English translations. In non-question sentences such as in (2b) and (2c), it only serves as an existential quantifier. In all cases, the interpretation is close to that of *some* or *any* in English. While *some* share the same distributional pattern as Korean *wh*-existential quantifier, the distribution of *any* differs in that the distribution of *any* is only limited to certain semantic environments such as *non-veridical* context (Giannakidou, 1997, 1998, 2002)[1]. Therefore, as shown in the English translations below, while *any* can occur in non-verical contexts such as questions and conditionals (2a and 2b), it is ruled out in veridical contexts such as the present progressives (2c).

(2) a. Nwu-ka cha-lul masiko iss-nayo?
who-nom tea-acc drink prog-q
'Who is drinking tea?'
'Is anyone/someone drinking tea?'

b. Nwu-ka sen-ul nemu-myen, kispal-ul tul-era.
who-nom line-acc cross-cond flag-acc raise-imper
'If anyone/someone crosses the line, raise the flag's

c. Nwu-ka cha-lul masiko isseyo.
who-nom tea-acc drink prog
'Someone (*anyone) is drinking tea'

In representing the feature set of Korean *Wh*, we follow a widely accepted assumption that it lacks an inherent quantificational feature and bears just a variable, which can be bound by a question operator. In the absence of such operator, it receives a default existential reading by means of the existential closure (Choi, 2009, Chung, 2000, Kim, 1989, Nishigauchi, 1990, Cheng, 1991, 1997). Following this, we propose the feature specification of *wh* in Korean as below:

(3) Korean *wh*: $\begin{bmatrix} \ldots \\ \varphi \end{bmatrix}$

We take this feature representation as the knowledge that L2 learners should eventually attain. The development of this knowledge may or may not require feature reassembly, depending on whether a given mapping to L1.

3.2 L1 Japanese: *wh* quantifiers

Wh words in Japanese function very much similar to Korean *Wh*: it can serve as a *wh*-question word as well as an existential quantifier (e.g. *dare-ka*) ('someone'). Their distribution is also similar to Korean *Wh* in that they are not subject to any distributional restrictions. The following shows the examples in Japanese that correspond to Korean examples we saw above.

[1] Non-veridical contexts roughly corresponds to the context which do not refer to *fact*

(4) a. John-wa yooku daigaku-de dare-ka-(o) shitte-imasu-ka?
John-top York University-at who-disj-acc know-cop-q
'Does John know somebody at the University of York? '

b. John-wa yooku daigaku-de dare-o shitte-imasu-ka?
John-top York University-at who-acc know-cop-q
'Who does John know at the University of York?

c. Dare-ka-to deeto-o su-reba, naguru (yo/zo)
who-disj-with date-acc do-if hit(will)
'If you date someone, (I) will hit (you)'

d. Watashi-wa tetuyade nani-ka-o yondeita
I-top all.night what-disj-acc read:prog:past
'I was reading something all night'

Based on the distributional, semantic and functional similarities between Japanese *Wh* to Korean *Wh*, and following the widely accepted assumptions on Japanese *wh* (Kuroda, 1965, Nishigauchi, 1990, Kratzer and Shimoyama, 2002, Shimoyama, 2001, 2006), we propose that the same feature specification for Korean *Wh* applies to Japanese as below:

(5) Japanses *wh*: $\begin{bmatrix} ... \\ \varphi \end{bmatrix}$

As the feature specification in L1 Japanese is the same as L2, it is apparent that there is no need for feature reassembly. In addition, the fact that Japanese *wh* can also function as a quantifier can lead to a straightfoward mapping between *wh* quantifiers between L2 Korean and L1 Japanese. Or at least the mapping process would be easier for L1 Japanese learners of Korean than L1 English learners, since the latter group faces more mapping possibilities. The next section explores these mapping possibilities by reviewing the relevant properties in L1 English.

3.3 L1 English: *wh*, *any* and *some*

Unlike Korean and Japanese, English *wh* only functions as a question word, but not as an existential quantifier. Instead, the existential interpretation of Korean *wh* corresponds to polarity item *any* and *some*. *Some* doesn't have any distributional restrictions, while *any* is restricted to some semantic contexts such as *non-veridical* contexts as we saw earlier, and some examples are given below:

(6) a. Is anyone/someone drinking tea?

b. If anyone/someone crosses the line, raise the flag

c. *Anyone is drinking tea/ someone is drinking tea

d. *John drank any tea yesterday/John drank some tea yesterday

Given the above, there are three mapping possibilities for English speaking learners of Korean. It is possible that the learners map Korean *Wh* to English *Wh* purely by the morphological similarity. It is also possible that they map directly to *any* or *some* if they are able to interpret

Korean *Wh* as existentials. The following shows these three L1 lexical items with their feature specifications[2]:

(7) a. Wh_{Q} $\begin{bmatrix} \ldots \\ \varphi \\ -\mathrm{Q} \\ +\mathrm{WH} \end{bmatrix}$ b. *Any* $\begin{bmatrix} \ldots \\ \varphi \\ u\mathrm{NV} \end{bmatrix}$ c. *Some* $\begin{bmatrix} \ldots \\ \varphi \end{bmatrix}$

The brief comparison among the three languages above points to a great advantage for Japanese speaking learners over English speaking learners. This is because the similar function and distribution of Japanese *wh* to Korean may lead to the easier mapping and no feature reassembly is required. In contrast, English speaking learners face a three way mapping possibilities, two of which will then need feature reassembly in the case of mapping to WH_{Q} and *any*.

Before moving onto the current study, we will first report findings from Choi (2009) - one of the previous studies that investigate the same target property in L2 Korean.

4 Previous study: Choi (2009)

In investigating L2 knowledge of Korean *wh* existential quantifiers, Choi (2009) aims to test whether L1 English speaking learners are able to reassemble the features of English WH_{Q} in accordance with Korean $\mathrm{WH}_{\mathrm{Ind}}$: whether the learners are able to delete [−Q, +WH] and to use Korean *wh* correctly in different syntactic structures such as questions and declaratives (i.e., with different licensors (+/-Q in C domain)). The experiment tested two proficiency groups of learners (22 upper intermediate and 23 advanced), using translation tasks (by reading and by listening) plus an acceptability judgement task. The overall results showed that in WH-questions, both groups performed with 84%-93% accuracy in correctly identifying the WH_{Q} use of Korean *wh*. In the yes-no questions, on other hand, the two groups differed: the 12%-15% accuracy in the upper intermediate, and the 60%-82% accuracy in the advanced. The findings indicated that at the upper-intermediate level, the learners appear to have very little knowledge of the existential interpretation of Korean *wh*-expressions, and that by the advanced level, the relevant knowledge is emerging (by successful feature reassembly). This study, however, does not consider all mapping possibilities.

In the previous section, we have established that there are three mapping possibilities for English speaking learners (7a-c). In Choi (2009), the feature reassembly task is assumed to be required since the study considers the mapping to Wh_{Q} only. If other possibilities were considered, however, the emerging knowledge of Korean *why* by the advanced learner group might be equally possible due to the mapping to *some*, for instance, which then would not require feature reassembly. In other words, were other mapping mapping possibilities considered, Choi (2009)'s result by the advanced learners may not be just attributed to the reassembly of the feature of Wh_{Q} or to the feature reassembly at all. To this end, we explore all mapping possibilities by the English speaking learners, in comparison to the Japanese speaking learners.

[2][*u*NV] is used as a licensing feature that is responsible for the distributional restriction of *any*. Other semantic features are equally possible depending on the analysis, e.g, downward entailment (Ladusaw, 1980, 1986) and scalar implicatures (Chierchia, 2004)

5 Current Study

Putting together the relevant properties of each language, the learnability task for each L1 group is schematized below:

(8)

L2	*mapped to*	L1	Feature reassembly
Korean WH_{Ind}	→	Japanese WH_{Ind}	No feature reassembly required
Korean WH_{Ind}	→	English Wh_Q English *any* English *some*	Deletion of [-Q, +WH] Deletion of [*u*NV] No feature reassembly required

(8) shows the mapping possibilities for each L1-L2 pair, followed by the feature reassembly task implied in each mapping case. From both the mapping and feature reassembly tasks, we predict that the Japanese group will perform better than the English group due to the one-to-one mapping possibility with no required feature reassembly. Having to face more mapping possibilities, the English group will perform less well than the Japanese group, or at least their L2 knowledge will be delayed. Within the English group, in the case of mapping to Wh_Q, the failure of feature reassembly will lead English learners to reject all declarative sentences under the interpretation of Korean *wh* as WH_Q, or interpret questions as *wh*-questions only. In the case of mapping to *any*, this will results in only accepting Korean WH_{Ind} in non-veridical contexts.

5.1 Experiment: Subjects and Tasks

49 Japanese and 26 English speaking learners participated in this study, and each group was divided into two proficiency levels: intermediate and advanced. The proficiency level was tested with a cloze test where learners were asked to fill 40 blanks in a 182 word Korean text. An exact word scoring methods showed that both groups scored within the range of minimum 15 and maximum 39. Within this range, we have set score 30 as the divide between intermediate and advanced. This resulted in 31 intermediate and 18 advanced Japanese speaking learners (JK henceforth) and 16 intermediate and 10 advanced English speaking learners (EK henceforth):

(9) Cloze test scores and proficieny groupings

Learner Group	N	Mean	Max.	Min.	Proficiency Group	N
JK	49	28.06	39	15	Interm. (⩽29)	31
					Adv. (⩾30)	18
EK	26	26.69	39	15	Interm. (⩽29)	16
					Adv. (⩾30)	10

The study included two experiment tasks: acceptability Judgement Task (AJT) and translation task. The AJT comprises four test types of sentences (episodic, conditional, non-factive and negative factive sentences) and five tokens in each type. For the sake clarity, we present the examples of Korean test sentences of each type in English below:

(10)

Type	**Example**	**n**
Episodic	Someone met Chelswu yesterday	5
Conditional	If someone comes to see me, call me	5
Non-factive	The cook felt that something (*anything) was lacking in the food	5
Neg. factive	Swumi regretted that she had eaten something (*anything) late at night	5

The AJT also included 30 Distractor Sentences (10 grammatical sentences without 'WH' + 10 ungrammatical sentences with 'WH' + 10 ungrammatical sentences with 'WH')

Each test sentence appeared on a big screen at the front of the room. Learners were asked to rate each sentence using a four point scale: -2 for 'I'm sure this is wrong'; -1 for 'I think this is wrong'; +1 for 'I think this is right'; and +2 for 'I'm sure this is right'. Additionally, a choice was given for 'I don't know'. With no distributional restrictions, Korean WH_{ind} in the above types are all acceptable, and therefore if learners are correct, we expect them to accept all test sentences. The result in this task is expected to be informative, in particular, regarding the knowledge by the English groups. For EK, the test results will inform whether they recognise the use of Korean *wh* as an existential quantifiers in addition to WH as a question word. If they perform well across the test types, it will point towards the mapping to *some* or otherwise, the successful feature reassembly of relevant features in the case of mapping to WH_Q or *any*. On the other hand, different types of result will imply failure in the feature reassembly task. For instance, if they reject across all test types, it will indicate the failure of deleting [-Q, +WH] feature in the case of mapping to WH_Q. On other hand, if they reject sentences in episodics and non-factives, this will indicate the failure of deleting [*uNV*] in the case of mapping to *any*.

The translation task complements the AJT task in that it intends to observe the mapping patterns by learners and it employss different types of test sentences from the AJT: *yes-no* and *wh* questions. It allows us to observe whether they can correctly tease apart the interpretation of WH_{ind} in *yes-no* questions from that of WH_Q in *wh*-questions. At the same time, by means of translation, this task intends to trace possible mapping patterns in each learner group. In this task, the audio recording of each test sentence was played twice and learners were asked to translate each sentence into their L1. There were 15 sentences in total: 5 *wh*-questions and 5 *yes-no* questions, plus 5 distractors.[3] The following is one of the test sentences:

(11) Minswu-ka nwukwu-lul cohahay-yo?
Minswu-NOM who-ACC likes-Q
'Who does Minswu like?'
'Does Minswu like anyone?

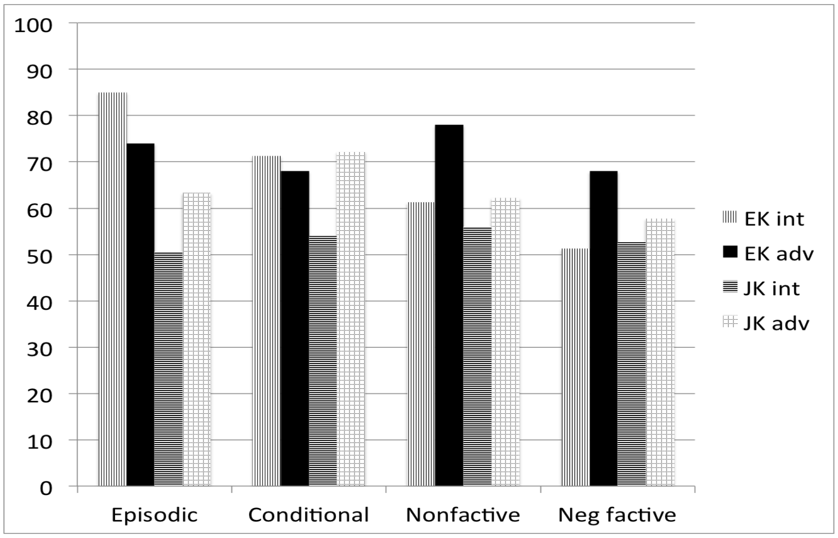
(11) is potentially ambiguous between the *wh* and *yes-no* question readings. These potential readings are disambiguated by different intonations, whereby the lowering intonation at the end of the sentence yields a *wh*-question reading, while the rising intonation a *yes-no* question reading (Choi, 2009). The audio recordings of the test sentences are controlled in intonation . In this task, due to the similar function of WH between Japanese and Korean, JK is expected to differentiate between WH_Q and WH_{ind} more successfully than EK. EK, on the other hand, is predicted to be less successful and to overuse WH_Q across the *wh*-question and *yes-no* questions types.

[3] The test sentences were adopted from Choi (2009)

5.2 Results

For the AJT task, the mean accuracy rates in each group are presented in (12) below. Since Korean WH_{ind} are acceptable in all test types, the accuracy rates correspond to the acceptance rates.

(12) The AJT result by mean accuracy rates



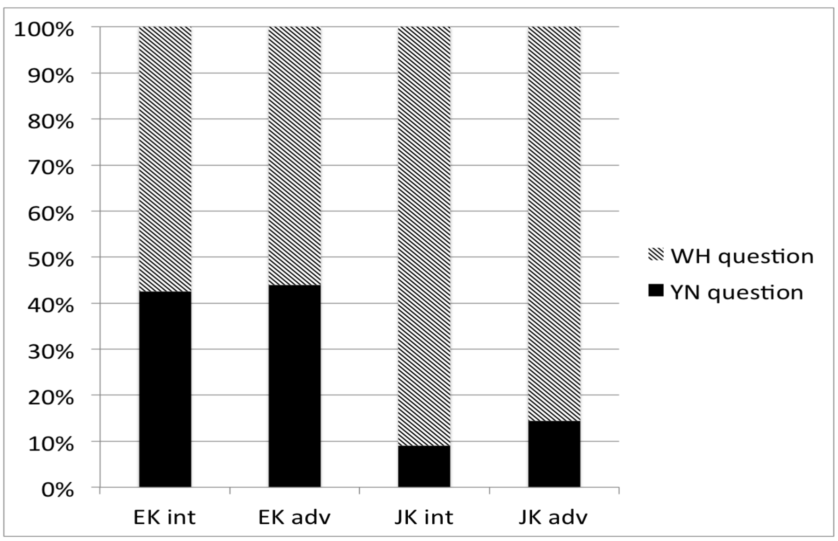
The English groups generally tend to accept all test types of WH_{Ind}, except for the intermediate EK whose accuracy remains around at 50%. If we first look at the accuracy rates of the intermediate EK group (blue bar), the accuracy rates decrease across the test types. This pattern doesn't seem to match the mapping to WH_Q or *any*, since the mapping to WH_Q would lead to the tendency of rejection of all test types, and the mapping to *any* to the tendency of rejection of episodics and non-factive types. If any, it is the latter mapping possibility that seems even more remote, since there is no clear observation of the rejection of episodics and non-factives. This leaves us with the mapping to *some*. With this, the highest accuracy rate in this group is in episodics. The accuracy also seems to reflect the complexity of the test sentences as it shows a significant decrease as the complexity of sentence structure increases towards non-factives and negative factives.

Compare this with the advanced EK (red bar). The accuracy rates in this group are within 68% - 78%, showing significant increase in the latter two types (non-factives and negative factives). The accuracy in conditionals remains the same as the intermediate EK, while the accuracy decreases in episodics though the difference is not significant. The pattern of the advanced EK seems to echo that of the intermeidate in that it doesn't follow the pattern by the mapping possibilities to WH_Q and *any*, while the advanced EK seems to show better performance in the complex sentences than the intermediate.

Let's compare this with the results by JK. The first notable pattern is that JK did not perform better than EK, and this is unexpected. Looking first at the intermediate JK (green bar), the performance by JK did not seem to be affected by the complexity of the sentence structures as the accuracy rates seem to appear constant at around 51%-57% across the test types. This also indicates that a little less than half of the intermediate JK (43%-49%) wrongly rejected Korean WH_{ind}, and their accuracy rates are significantly lower than the EK, in particular in episodics and conditionals. Unlike the EK counterpart, it seems that the intermediate JK are indeterminate about the use of WH_{ind}. For the advanced JK, their accuracy rates (purple bar) seems to improve in general, and more so in episodics and condiitionals. Despite the improvement, however, their accuracy rates are by far lower than the EK counterpart, with the exception of conditionals, where the advanced JK and EK performed similarly ($\sim$70%).

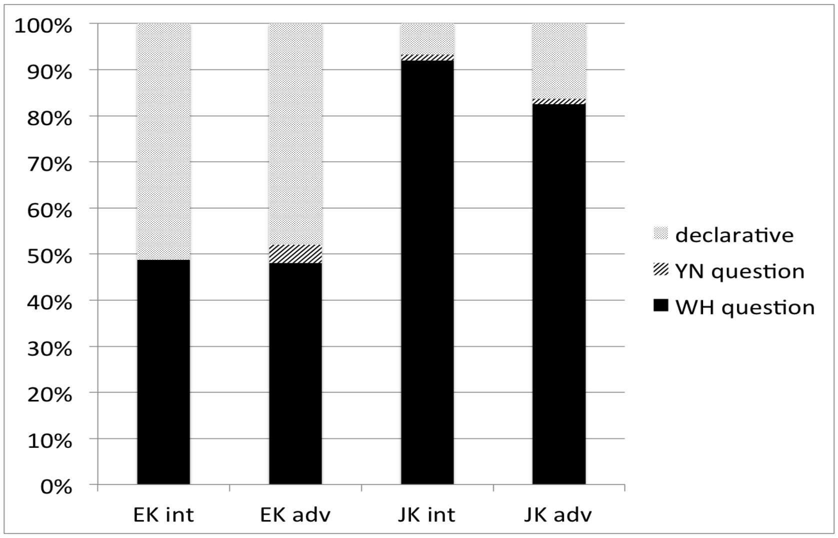
The overall results point to a clearly better performance by EK than JK. The pattern by EK indicate the dominant mapping to *some*, rather than to other possibilities (WH_Q and *any*). despite the similarity between Japanese and Korean, JK has more difficulty with recognising the use of WH_{ind}. We now turn to the translation tasks to observe whether the learner groups are able to recognise the use of WH_{ind} on one hand, and whether they can tease apart the use of WH_{ind} from WH_Q in the question sentences. The following shows the results of how each group translated given Korean *Yes-no* questions. The blue part of each bar represents the rates of correct translation into WH_{ind} (*'some/any'*...), and the red part of the each bar the rates of incorrect translation into WH_Q (*'who/what...'*).

(13) The translation task result: *Yes-No* questions



Within each L1 group, both proficiency groups performed very similarly. In EK, the correct translation into *yes-no* question ranges between 43%-45%, while the incorrect translation into *wh*-questions were slilghty more, around 55%-57%. In comparison, JK performed far less well by providing the correct *yes-no* question translation only by 10%-15%. In general, JK predominantly interpreted Korean WH_{ind} as WH_Q, while EK, though performance was better, was largely indeterminate between the WH_Q and WH_{ind}. Let's now turn to the results in *wh*-questions. The following shows the correct translation (WH_Q) in blue, and the incorrect translation (WH_{Ind}) in red. The green part of the bar shows the alternative translation into declaratives, which we will discuss more below.

(14) The translation task result: *Wh*-questions



Both EK groups correctly translated with the WH_Q reading by 49%-50%. Most of other translation was not with those with *yes-no* questions, but rather with declaratives where WH received WH_{ind} reading by 49%-50%. The responses with *yes-no* questions (WH_{Ind} reading) only occurred in the advanced group, and only marginally at 2%. For the JK, though the rates were significantly different from the EK, the similar translation pattern emerged. In the JK, the majority of translation was correctly with WH_Q (85-90%). Most of the remaining mistranslation was not with *ye-no* questions, but again with declaratives (WH_{Ind} reading) by 5-10%. The responses with the *yes-no* question (WH_{ind}) only appeared marginal at around 1%. The mistranslation with declaratives is unexpected. However, it may be due to the use of the sentence ending particle *'yo'* in the test sentences. *'yo'* can be used as a question marker as well as a declarative marker in Korean. Therefore, it is possible that when the *wh*-questions sentences was accompanied with lowering intonation, the learners perceived them as declaratives. For instance, the following presents an example of translation given for *wh*-questions by EK04, one of the EK participants:

(15)

	Target translation	**EK04's translation**
민수가 누구를 좋아해요?	Who does Minsoo like?	Who does Minsu like?
집 안에 누가 있어요?	Who is there inside home?	There is someone inside the house.
지금 무엇이 떨어졌어요?	What has fallen down now?	Just now, something fell down.
미나는 무엇을 먹었어요?	What did Mina eat?	Mina ate something
수미가 어디로 여행갔어요?	Where did Swumi make a trip to?	Soohee went traveling somewhere.

All five given test sentences were intended as *wh*-question. EK04 correctly translated it as *wh*-questions in one out of 5 *wh*-questions, but incorrectly translated it as a declarative sentence with the WH_{Ind} reading for the remaining four. This overuse of declarative, though incorrect, suggests a sign that learners recognise the use of WH as existentials. This pattern is far greater for the EK while marginal for the JK.

The results in the translation task suggest that Japanese learners prefers to interpret Korean WH_{Ind} as WH_Q. This is unexpected, given that mapping to $_{Ind}$ should lead to strong preference for the WH_{Ind} interpretation, contra the result. In contrast, English learners accepts the interpretation of WH_{Ind} much more readily than Japanese, and even enforce it in WH-questions (though misanalysing them as declaratives), and this shows a clear indication for mapping to *some*.

6 Discussion

Putting together the results of all tasks, there is clear evidence towards mapping to *some* in the EK, rather than to WH_Q. This is unlike what is assumed in Choi (2009). The results of EK does not show signs of mapping to *any* in English learners either. From the translation task, mapping to WH_Q in the EK is a possibility since they translated *yes-no* questions as *wh*-questions almost half the time. However, this might be due to their lack of perception of intonation pattern. If mapping to WH_Q is also available, they would have rejected the declarative test sentences in the AJT. However, we saw that their accuracy in simple episodic sentences was already robust even at the intermediate level. In contrast, the performance by JK was much lower than EK. This is rather unexpected, given the availability of Japanese *wh* as WH_{Ind}.

This led to a closer examination of distribution of Japanese *wh*, and we find that 'bare' WH in Japanese does not serve as WH_{ind}. Rather, it can only function as a quantifier when combined with quantificational suffixes. For instance, when *dare* ('who') is suffixed by *ka* (disjunction marker), the combination can then function as an existential quantifier[4]. In question sentences, bare WH can only function as a *wh* question word when bound by a question operator. That is, when no other overt operator available, it does not behave as an indefinite, unlike Korean (Zavitnevich-Beaulac, 2005). This is exemplified in (16):

(16) a. John-wa yooku daigaku-de dare-(o) shitte-imasu-ka?
John-top York University-at who-acc know-cop-q
'Who does John know at the University of York?
'*Does John know somebody/anybody at the University of York?'

b. Dare-*(ka)-to deeto-o su-reba, naguru (yo/zo)
who-disj-with date-acc do-if hit(will)
'If you date someone, (I) will hit (you)'

c. Watashi-wa tetuyade nani-*(ka)-o yondeita
I-top all.night what-disj-acc read:prog:past
'I was reading some book all night'

The question sentence in (16a), the bare WH can only function as WH_Q, therefore excluding the *yes-no* question reading. In conditional and progressive sentences (16b and 6c), the WH should be suffixed by *ka* (disjunction marker) to yield an existential reading, and the sentences would be ruled out otherwise.

Given this distribution of Japanese *wh*, a further analysis is needed to capture the unavailability of an indefinite reading of bare WH. Our speculation is that unlike the traditional assumption, Japanese *wh* may require an additional feature that requires it to be checked by an overt operator, or that Japanese *wh* is realised as two separate lexical items: one used exclusively as WH question word and the other as WH indefinite licensed by a quantificational suffix.

[4] *mo* (conjunction marker) is another quantification suffix that combines with WH, which combination yields a negative polarity item: *dare-mo* ('anyone')

This subtle difference between Korean and Japanese aside, what the results by the JK show us is that the 'potential' use of WH as WH_{ind} in Japanese did not facilitate JK to acquire WH_{ind} in Korean. Their performance is even less successful than EK whose WH in L1 does not function as WH_{ind}. We propose that the difference in the performance between JK and EK can be accounted for by a constraint on the mapping process, namely by transferability and psychotypology (Kellerman, 1984, 1985). The basic assumption in Kellerman (1984, 1985) is that language learners, following language universals, are able to project a distinction of marked and unmarked features across languages, and that learners' perception of markedness impose a constraints on L1 transfer, coined as transferability. Transferability states that unmarked language-neutral (unmarked) features of the L1 are more transferable than marked/language specific features. Further, transferability interacts with the learner's psychotypology whereby learner's perception of typology affects the transferability constraints at the same time. We suggest that this extends to the results in our study. Japanese and English learners map Korean *wh* to the unmarked WH_Q in their L1s, as shown by the overuse of WH_Q in *yes-no* questions in the translation task. At the same time, Japanese learners perceive Korean as closely related to their L1 within the same typology family, and this led to more persistent mapping to WH_Q, than EK. In contrast, English learners perceive Korean as distant from L1 and they are more susceptible to other mapping possibilities. That is, while they map Korean *wh* to WH_Q in L1 English, they seek to map to another lexical item such as *some* more readily.

7 Conclusion

In this study, we have attempted to explore the mapping process within the Feature Reassembly Hypothesis. The existing studies have mostly focused on the process of feature assembly with a designated mapping possibility. We have maintained that the feature reassembly process cannot be tested without the consideration of full spectrum of mapping possibilities, and it is the mapping process that is key to the observation of L1 transfer effect and, consequently making reliable predictions for feature reassembly. To this end, our study compares two L1 groups, English and Japanese speaking learners of English and considers all mapping possibilities within these L1-L2 pairs. Our results show that despite the morphological similarities, the performance by Japanese speaking learners were less successful than English speaking learners. Our central findings are that the straightforward lexical similarities may not be the best predictor for mapping, and that learners opt for mapping with more unmarked linguistic features by transferability. Learners's perception of typological distance between L1 and L2, that is, psychotypology may play a role in the projection of mapping too. Though the role of transferability is not tested in this study, we suggest that it may play a defining role in making predicting of mapping process and that it is not incompatible with the Feature Reassembly Hypothesis since the mapping process relies on the learner's perceived equivalence between languages. However, a questions still remains as to how transferability can be tested. Our findings also call for a further linguistic account on the nature of Japanese *wh* as to how bare WH cannot be used as an indefinite, unlike what the current literature implicates.

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