

Null Prepositions in Wh-Questions and Passives

Tomohiro Hokari and Shigenori Wakabayashi

Chuo University

1. Introduction

It has been reported that L2 learners often omit required prepositions in wh-questions and/or relative clauses even though they can supply the same prepositions in their declarative counterparts (e.g., Klein, 1993a, 1993b, 1995, 2001; Jourdain, 1996; Dekydtspotter et al., 1998; Klein & Casco, 1999). For instance, when the complement of the English preposition *about* in (1) undergoes wh-movement to form an interrogative, the preposition must be either stranded (2a) or pied-piped (2b). However, L2 learners of English (SLEs) often accept/produce wh-questions with no preposition, as in (2c), even when they correctly supply the very same preposition in declarative sentences as in (1).

- (1) The student is worrying about the exam.
- (2) a. Which exam is the student worrying about? (P-stranding)
b. About which exam is the student worrying? (Pied-piping)
c. *Which exam is the student worrying? (Null preposition)

Previous studies have revealed several characteristics of this *null prep(osition)* phenomenon, some of which are summarized in (3).

- (3) a. L2 learners accept/produce null prep regardless of L1 (Klein, 1993b, 1995) or the onset of L2 acquisition (Klein, 1993a).
b. Null prep occurs not only in L2 acquisition of English but also in L2 acquisition of French (Jourdain, 1996).
c. Though L2 learners gradually cease to accept/produce null prep as their general proficiency in English increases, highly proficient learners still sometimes omit required prepositions (Klein, 1993b, 1995).
d. Null prep arises not only in relative clauses but also in wh-questions, where omissions of prepositions are rarely observed in natural languages (Klein, 1993a, 1993b, 1995).¹
e. Prepositions can be omitted regardless of whether they are subcategorized by verbs (Klein & Casco 1999; Klein 2001).

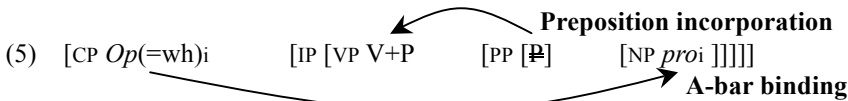
(3a) and (3b) imply that null prep may be a universal characteristic of L2 development. (3c) indicates that it is difficult for L2 learners to overcome null prep even at later developmental stages. In addition, the facts (3a) and (3d) reveal that null prep is unlikely to be the result of L1 influence.

In order to account for the interlanguage grammar that causes this non-target-like behavior among L2 learners, several explanations have been offered. Dekydtspotter et al. (1998), for example, argue that null prep derives from L2 learners' general strategy of relying on A-bar binding and resulting preposition incorporation. In natural languages, two types of operator-variable dependency are available. One involves operator movement as in (4a), and the other includes non-movement A-bar binding as in (4b).

¹ Based on the fact that omissions of prepositions in interrogatives are not observed in natural languages, Klein (1993a, 1993b, 1995) claims that null prep in L2 grammar is evidence for *wild* grammar, though she abandons this claim in later work (Klein & Casco, 1999; Klein, 2001).

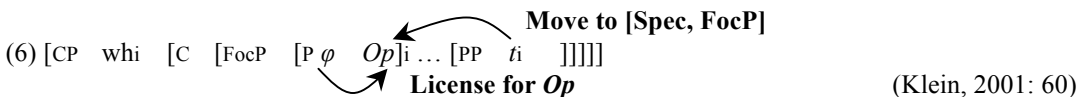
- (4) a. [CP *Op*_i [IP.....[PP *t_i*].....]]
 b. [CP *Op*_i [IP.....[PP *pro*_i].....]] (Dekydspotter et al., 1998: 348)

Though (4a) is an option available in languages that exhibit subadjacency effects (e.g., English), Dekydspotter et al. claim that L2 learners choose (4b) over (4a) because (4b) involves Merge only and is more economical computationally than (4a), which includes Merge and Move (Chomsky, 1995). Once (4b) is selected, prepositions are inevitably incorporated into verbs in order for the verbs to properly govern *pro*, which results in null prep in the L2 grammar. The underlying representation they propose is shown in (5).



(Dekydspotter et al., 1998: 348, 353)

On the other hand, Klein & Casco (1999) and Klein (2001) argue against Dekydspotter et al.'s (1998) account by pointing out the fact (3e): Prepositions can be omitted regardless of whether they are subcategorized by verbs. Since incorporation of a preposition into a verb is allowed only if the preposition is subcategorized by the verb (van Riemsdijk, 1978; Hornstein & Weinberg, 1981; Law, 2006), (3e) is problematic for an explanation based on preposition incorporation. Instead, Klein & Casco (1999) and Klein (2001) point out that L2 learners (SLEs in their study) face a conflict between their knowledge of language in general and the L2 (English) input. Languages that allow P-stranding are cross-linguistically quite rare (van Riemsdijk, 1978; Hornstein & Weinberg, 1981; Sugisaki & Snyder, 2002; Law, 2006), and hence L2 learners have a bias toward P-stranding based on prior linguistic experience.² In the case of English, however, P-stranding is frequently found in the input and is preferred over pied-piping. They maintain that this conflict leads SLEs to choose the more conservative movement using a null-operator, which requires a null preposition as its licensor, as shown in (6).



In summary, though details of the previous analyses are different, what they have in common is that null prep results from a difficulty in acquiring target-like wh-movement.

Note, however, that these previous analyses exclusively focus on null prep in constructions with wh-movement and do not address whether null prep arises in constructions without wh-movement as well.³ Therefore, their accounts may be too narrowly designed for null prep in these constructions. In fact, recent studies have reported that L2 learners do allow null prep in prepositional passives, which arguably do not involve wh-movement (Handa, 2004; Tanaka, 2005; Hokari et al., 2008). These studies illustrate that null prep may be a more pervasive phenomenon than previously thought. One might object, however, that previous accounts could potentially be applicable to null prep in prepositional passives because it remains possible that prepositional passives might be analyzed as A-bar in L2 grammar involving constructions such as topic or focus constructions. Though it might follow logically and warrant further investigation, additional data indicating further complexity of this phenomenon

² One point that should be noted here which weakens their argument is that they collapsed participants from various L1 backgrounds together for analysis. Unfortunately, they do not report whether their study included participants whose L1 allows a stranding option.

³ Though Dekydspotter et al. (1998) report data from English-speaking learners' of French *en*-cliticization, which does not involve operator-variable dependency, their concern is whether English-speaking learners of French show sensitivity to the distinction between *de*-agents and *par*-agents in extraction, and they do not investigate whether prepositions are dropped in *en*-cliticization.

and the inadequacy of previous accounts are found in Handa (2004). Handa (2004) conducted a grammaticality judgment task along with a correction task with twenty-one Japanese learners of English (JLEs) to investigate whether null prep occurs in passives as well as wh-questions. Her results are summarized in Table 1.

Table 1: Mean percentages of null prep acceptances in Handa (2004: 35-36)

Group	Passive (t = 8)	Wh-question (t = 8)
Elementary (n = 7)	0.78	0.43
Intermediate (n = 8)	0.51	0.37
Advanced (n = 6)	0.49	0.27
Native Speaker (n = 6)	0.21	0.08

As can be seen from Table 1, JLEs in this study accepted null prep more often in passive sentences than in wh-questions. Mere application of the previously proposed analyses to null prep in passives neither predicts the occurrence of null prep in passives nor explains the difference in frequency between the two constructions.

However, Handa's study has at least two shortcomings with its materials and hence the data are not entirely reliable. First, the native speakers judged passive sentences unnatural and changed them into their active counterparts (Handa, 2004: 45). These unexpected responses probably result from lack of a context where the use of passive sentences is preferred over that of active sentences. Without an appropriate context, active sentences usually sound more natural than passives. Because of this problem, the sentences used in Handa (2004) may not be appropriate for the intended purpose of her experiment. In fact, Tanaka (2005) even reports that such unexpected responses by English native speakers actually decreased if appropriate contexts are given. Second, Handa's materials included a prepositional verb that can be used as a transitive verb as well, namely, the verb *worry* in *worry about*. Due to the inclusion of this verb in the materials, the percentage of null prep acceptance became relatively high, even for the native control group (i.e., 21 % for passives and 8% for wh-questions), given that adult English native speakers in previous studies almost never allowed null prep (e.g., Klein, 1993b).⁴

Though Handa's (2004) results are not conclusive, her findings are worthy of further investigation because her data appear to suggest previously unknown properties of null prep in interlanguage. In the present study, we report results of an experiment designed to overcome Handa's (2004) limitations and test whether different frequencies of null prep are observed in wh-questions and passive sentences.

2. Wh-questions and passives in English and Japanese

Wh-questions and prepositional passives are similar in that they are both extraction constructions. However, English wh-questions and prepositional passives are different in the position(s) where prepositions are permitted when their complements are extracted. English wh-questions allow P-stranding (7a) as well as pied-piping (7b), whereas English passives permit only P-stranding as the contrast in grammaticality between (8a) and (8b) illustrates.

- (7) a. Who did the stranger speak to? (P-stranding)
 b. To whom did the stranger speak? (Pied-piping)
- (8) a. Mary was spoken to by a stranger. (P-stranding)
 b. *To Mary was spoken by a stranger. (Pied-piping)

⁴ For instance, Klein's (1993b) adult English native speakers allowed null prep only at a rate of 1 % in wh-questions (and 2 % in relative clauses). Although Klein's study did not include passive sentences and hence it remains possible that native speakers might tend to allow null prep in passives, we will show in Section 3 that native speakers indeed fail to allow null prep in passives when we carefully select prepositional verbs.

The difference in im/possibility of pied-piping of prepositions between two constructions is attributed to the difference in type of movement. Since passivization (or NP-movement) is Case-driven (Chomsky, 1981, 1986), the dislocated element must be a NP, and consequently the pied-piping option is prohibited. On the other hand, wh-movement is triggered to check the [+wh] feature and EPP feature on C and such restriction is not imposed on an element that undergoes movement.

Japanese wh-questions behave differently from English ones in position of adpositions. Japanese is a postpositional language. In addition, Japanese is a wh-in-situ language, and hence wh-words need not move to [Spec, CP] in overt syntax (Huang, 1982). However, wh-words can move to a left-periphery position through scrambling.⁵ When wh-words are scrambled, pied-piping is the only available option as shown in (10b). Postpositions are never stranded as in (10a) or omitted as in (10c).

- (9) Hanako-ga Taro-ni/-e hanasikake-ta. (Active/Declarative)
 Hanako-NOM Taro-to speak-PAST
 ‘Hanako spoke to Taro.’
- (10) a. *[NP dare]_i Taro-wa [PP [NP *t*]_i -ni/-e] hanasikake-ta-no? (P-stranding)
 who Taro-TOP to speak-PAST-Q
 ‘Lit: Who did Taro speak to?’
 b. [PP dare-ni/-e]_i Taro-wa [PP *t*]_i hanasikake-ta-no? (Pied-piping)
 who-to Taro-TOP speak-PAST-Q
 ‘To whom did Taro speak?’
 c. ?*[NP dare]_i Taro-wa [PP [NP *t*]_i - ϕ] hanasikake-ta-no? (Null postposition)
 who Taro-TOP speak-PAST-Q
 ‘Lit: *Who did Taro speak?’

On the other hand, Japanese passives involve NP-movement just as English passives do, though the denotation of Japanese passives does not completely match those in English.⁶ When passivization applies to the complements of postpositions, neither P-stranding (11a) nor pied-piping (11b) is available. Instead, postpositions are obligatorily deleted as in (11c).

- (11) a. *[NP Taro]_i -ga Hanako-ni [PP [NP *t*]_i [P -ni/-e]] hanashikake-rare-ta. (P-stranding)
 Taro-NOM Hanako-by to speak-PASSIVE-PAST
 ‘Taro was spoken to by Hanako.’

⁵ Though scrambling is clearly different from Case-motivated movement of passivization, the exact landing site of scrambling and its motivation are controversial among Japanese grammarians. See Saito (1989), Nemoto, (1999), Miyagawa (2001, 2005) and references cited there.

⁶ How many types of passives exist in Japanese and what representations they have are still controversial. For example, apart from indirect passives where no clear equivalents exist in English, Hoshi (1994, 1999) claims that Japanese has at least two types of passives: *Ni yotte* (direct) passives and *ni* (direct) passives. Though they are apparently similar but for the presence/absence of *yotte* ‘owning’ in an adverbial agentive phrase, Hoshi maintains that it is *ni yotte* (direct) passives that have exactly the same structure as English passives. *Ni* passives also involve NP-movement but what undergoes movement is not an overt NP but PRO, which is generated as the complement of a verb. Thus, according to Hoshi, *ni yotte* passives and *ni* passives have the following structures.

- (i) a. [NP Sensei]_i -ga gakusei-ni yotte *t*_i hihans-are-ta. (*Ni yotte* passive)
 teacher-NOM student-to owning criticize-PASS.-PAST
 ‘The teacher was criticized by his student.’ (Hoshi, 1999: 210)
 b. [S1 [NP Sensei]_i -ga [S2 PRO_i [VP gakusei-ni *t*_i hihans-are-ta]]]. (*Ni* passive)
 teacher-NOM student-by criticize-PASS.-PAST
 ‘The teacher was affected by his student’s criticizing him.’ (Hoshi, 1999: 211-212)

Although the questions of which structure JLEs transfer when acquiring English passives and whether they transfer neither of them are left open in this study, it is evident that NP-movement exists in Japanese.

- b. *[PP Taro-ni/-e]i -ga Hanako-ni [PP t]i hanashikake-rare-ta. (Pied-piping)
 Taro-to-NOM Hanako-by speak-PASSIVE-PAST
 ‘Lit: *To Taro was spoken by Hanako.’
- c. [NP Taro]i -ga Hanako-ni [PP [NP t]i [P φ]] hanashikake-rare-ta. (Null postposition?)
 Taro-NOM Hanako-by speak-PASSIVE-PAST
 ‘Lit: *Taro was spoken by Hanako.’

Apparently, (11c) is similar to null prep in L2 grammar. However, the distinction between postpositions and case particles is not entirely clear in Japanese because both are particles and cannot be morphologically separated from their hosts. Hence, a question remains as to whether (11c) can be treated on par with null prep in L2 grammars. Nonetheless, it is likely that this surface similarity between Japanese passives and null prep may affect the rate of null prep occurrence.

3. Experiment

3.1. Participants

Participants included sixty-seven Japanese learners of English (JLEs). All of them were either undergraduate or graduate students. They were divided into three groups according to their general proficiency in English as measured by the Oxford Quick Placement Test: twelve elementary (EL) learners; thirty-four lower intermediate (LI) learners; twenty-one upper intermediate (UI) learners. In addition, twelve English native speakers (NSs) also participated in the experiment as a control group.

3.2. Procedures and Materials

We employed a grammaticality judgment and correction task. Participants were asked to read pairs of contexts written in their native language and a following target English sentence, and then to judge whether the target sentence is grammatically correct or not by using a 5-point scale (from -2 to +2) with an additional option *don't know*, which was set apart from the scale. A rating of -2 represented *Impossible*, whereas +2 stood for *Possible*. Participants were encouraged to use 0 when they could not decide the grammaticality of a sentence, and to use *don't know* when a sentence included unknown words or expressions. Furthermore, if participants judge a sentence grammatically incorrect, they were asked to correct it.

Three prepositional verbs were prepared as targets: *speaking to*, *waiting for*, and *talk about*. They were selected from popular textbooks used in Japanese high schools. For each prepositional verb, five structure types (i.e., one active declarative sentence, two passive sentences, and two wh-questions) were prepared as shown in (12). All target prepositional verbs were presented without the required prepositions. In (12) the positions where prepositions should be supplied are underlined for the purpose of exposition.

(12) a. Active declarative sentence

Hanako spoke ___ the transfer student after the morning meeting.

b. Passive 1: V + (P)+ CP (*when* clause)

Hanako was spoken ___ when she was about to leave.

c. Passive 2: V +(P) + PP (locative or temporal PP)

Last night, Hanako was spoken ___ on her way home.

d. Wh-question 1: V + (P)+ CP (*when* clause)

Who did Hanako speak ___ when she was at the station?

e. Wh-question 2: V +(P) + PP (locative or temporal PP)

Who did Hanako speak ___ on her way home from school?

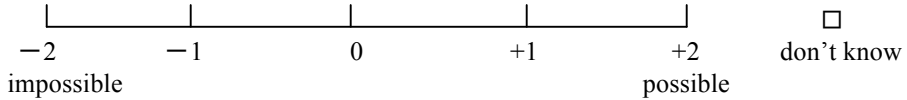
Active declarative sentences were used to ascertain participants' knowledge of verb subcategorizations. In passive sentences and wh-questions, the positions where prepositions should be supplied were followed by an adjunct CP or PP in order to eliminate position effects. (13) is a sample question

presented to NSs.

(13) Sample question:

(Context) The topic of today's class meeting was the plan for the school trip, and students made several suggestions.

(Target) At the class meeting, students talked the plan for the school trip.



Fifteen target sentences were presented along with forty-nine distracters, which included grammatical sentences with prepositional verbs and transitive verbs, and other unrelated sentence types.⁷ Resulting materials included 33 grammatical and 31 ungrammatical sentences. Four different orders of the test sentences were prepared in order to mitigate learning effects.⁸

3.3. Data Selection

In order to detect occurrences of null prep, we established the following selection criteria. First, we collapsed -2 and -1, on the one hand, and +1 and +2, on the other, as our concern was participants' corrections, particularly, whether the participants could insert an appropriate preposition into target sentences. Second, when a participant failed to supply an appropriate preposition in an active declarative sentence, we excluded the corresponding passives and wh-questions from analysis, because s/he is likely to lack the relevant knowledge of subcategorization as discussed in Klein (1993b). Third, we also excluded sentences judged 0 or *don't know* from the analysis. Fourth, we regarded responses irrelevant to prepositions as acceptance of null prep. Fifth, we considered insertion of a preposition other than the target one as rejection of null prep to the extent that use of the preposition was acceptable in the given context. Finally, one passive sentence using the verb *wait* was excluded from analysis because of its context failed to elicit a passive structure.

3.4. Results

3.4.1. Group results

The overall results are summarized in Table 2.

Table 2: Mean percentages of null prep acceptances in passives and wh-questions (%)

	Passive (t = 5)	Wh-question (t = 6)	Total (t = 11)
EL (n = 12)	0.92 (22/24)*	0.54 (20/37)	0.69 (42/61)
LI (n = 34)	0.53 (53/100)	0.26 (36/138)	0.37 (89/238)
UI (n = 21)	0.46 (38/83)	0.20 (20/101)	0.32 (58/184)
NS (n = 12)	0 (0/48)	0.01 (1/68)	0.01 (1/116)

* (Number of null prep occurrences / total number of sentences passing the selection criteria)

As Table 2 shows, NSs almost never allowed null prep in either construction. We found only one instance of null prep among NSs' responses. On the other hand, all of the L2 groups accepted null prep in both constructions. More importantly, the mean percentage of null prep for passives was higher than that for wh-questions in all L2 groups.

⁷ One distracter was excluded for a typographical error.

⁸ In order to investigate whether the different occurrence rates of null prep among individual prepositional verbs are attributable to a difference in familiarity with these prepositional verbs, we also conducted a familiarity test after the grammaticality judgment task. We do not report the results here for lack of space.

A 2 (Structure) X 4 (Group) mixed factorial ANOVA revealed a significant main effect of Structure ($F(1, 75) = 27.35, p < .01$) and Group ($F(3, 75) = 27.99, p < .01$). There was also an interaction between the two factors ($F(3, 75) = 3.68, p < .05$). The distinction between two structures was significant for all L2 groups (EL: $F(1, 75) = 18.20, p < .01$; LI: $F(1, 75) = 10.83, p < .01$; UI: $F(1, 75) = 9.34, p < .01$) though it was not significant for NSs ($F(1, 75) = 0.02, ns$). These results indicate that JLEs, regardless of their proficiency in English, had particular difficulty in supplying prepositions in passives. Multiple comparison by Ryan's method showed that null prep occurrences in passives were significantly different among all groups except for between LI and UI (NS-EL: $t(150) = 7.76, p < .01$; NS-LI: $t(150) = 5.74, p < .01$; NS-UI: $t(150) = 4.63, p < .01$; EL-LI: $t(150) = 3.70, p < .01$; EL-UI: $t(150) = 4.12, p < .01$; LI-UI: $t(150) = 0.90, ns$). On the other hand, differences of null prep occurrences in wh-questions were significant between EL and the other groups (EL-NS: $t(150) = 4.43, p < .01$; EL-LI: $t(150) = 2.80, p < .01$; EL-UI: $t(150) = 3.09, p < .01$) and between LI and NS ($t(150) = 2.58, p < .05$) but did not reach significance between LI and UI ($t(150) = 0.64, ns$), or between LI and NS ($t(150) = 1.90, ns$). These results suggest that although it is possible for JLEs to gradually overcome null prep in cases of wh-questions and to attain native-like performance as their proficiency in English increases, JLEs still have difficulty inserting prepositions in passives even at later stages.

In summary, JLEs accepted null prep more often in passives than in wh-questions irrespective of their proficiency in English. In addition, overcoming null prep in passives was more difficult for JLEs than null prep in wh-questions.

3.4.2. Individual results

To investigate whether the group results reflect individual learners' response patterns, Table 3 classifies JLEs into four groups according to their patterns of un/acceptance of null prep in two constructions: Pattern A represents participants who allowed null prep at least once in both constructions; Pattern B shows participants who allowed null prep at least once in passives but disallowed it in wh-questions; Pattern C corresponds to participants who allowed null prep at least once in wh-questions but disallowed it in passives; Pattern D means participants who disallowed null prep in both constructions.

Table 3: Patterns of individual learners' responses

	Participants who allowed null prep in ...			
	Both constructions (Pattern A)	Only passives (Pattern B)	Only wh-questions (Pattern C)	Neither construction (Pattern D)
EL (n = 12)	11	1	0	0
LI (n = 34)	17	10	2	5
UI (n = 21)	14	3	0	4
Total (n = 67)	42	14	2	9

As we can see from Table 3, the majority of JLEs exhibited Pattern A. However, notable results relevant to the present discussion are the distribution of participants in the other categories. While fourteen participants allowed null prep only in passive sentences (Pattern B), the number of participants who permitted null prep only in wh-questions (Pattern C) was as few as two.⁹ Instead, JLEs who disallowed null prep in passives strongly tended to disallow null prep in wh-questions as well, as the number of participants in Pattern D indicates. These results reveal an implicational relation between passives and wh-questions in the use of prepositions: Learners who can supply required prepositions in passives can supply the same prepositions in wh-questions but learners who can supply prepositions in wh-questions may or may not do so in passives. This implicational relation is consistent

⁹ A careful look at the responses of two participants who displayed Pattern C revealed that four out of five of their passive sentences could not be analyzed because they did not satisfy the criteria discussed in 3.3. Thus, their responses might be merely accidental.

with the group results reported in 3.4.1. In short, individual results as well as group results showed that JLEs had particular difficulty in using prepositions in passive sentences.

4. Discussion

The present study revealed that JLEs accepted null prep more frequently in passives than in wh-questions. This finding lies beyond the accounts of previous analyses (e.g., Dekydtspotter et al., 1998; Klein, 2001) because those studies concern themselves only with wh-related constructions and hence do not address null prep in these constructions. More importantly, those analyses do not account for the different acceptance rates of null prep between passives and wh-questions or the implicational relation between the uses of prepositions in these constructions. In this section we focus our discussion on the different frequencies of null prep occurrences and the implicational relation between the two constructions and propose three possible explanations in turn.

The first possibility is influence from Japanese passives. As we have already seen in (11), repeated here as (14), neither P-stranding nor pied-piping is allowed in Japanese passives. Postpositions must be omitted as shown in (14c).

- (14) a. *[NP Taro]_i -ga Hanako-ni [PP [NP *t*]_i [P -ni/-e]] hanashikake-rare-ta. (P-stranding)
 Taro-NOM Hanako-by to speak-PASSIVE-PAST
 ‘Taro was spoken to by Hanako.’
- b. *[PP Taro-ni/-e]_i -ga Hanako-ni [PP *t*]_i hanashikake-rare-ta. (Pied-piping)
 Taro-to-NOM Hanako-by speak-PASSIVE-PAST
 ‘Lit: *To Taro was spoken by Hanako.’
- c. [NP Taro]_i -ga Hanako-ni [PP [NP *t*]_i [P ϕ]] hanashikake-rare-ta. (Null postposition?)
 Taro-NOM Hanako-by speak-PASSIVE-PAST
 ‘Lit: *Taro was spoken by Hanako.’

Though the precise mechanism causing omissions of postpositions is not necessarily the same as null prep (see Section 2), one might argue that this property of Japanese passives causes the higher rate of null prep occurrences in L2 English passives. However, this account fails to explain some additional empirical facts discussed below.

The condition in which postpositions present in related active declarative sentences are obligatorily omitted is not peculiar to passives but also holds true in relative clauses, as illustrated in (15) from Ohba (2003).

- (15) a. Watashi-wa sono ie ni suide-iru. (Declarative)
 I-TOP that house in live-PRES
 ‘I live in that house.’ (Ohba, 2003: 145)
- b. Sore-ga watashi-ga sunde iru ie desu. (Relative clause)
 That-NOM I-NOM live PRES house COP (ibid.)

If the absence of postpositions that appear in active declarative sentences from the corresponding passives affects the occurrences of null prep in L2 grammar, the same must hold true in relative clauses. However, Watanabe (2008) reports that lower proficiency JLEs accepted null prep more often in wh-questions than in relative clauses and such differences in rates of null prep completely disappeared among higher proficiency JLEs. Both of these findings clearly contradict our prediction based on L1 influence. Therefore, the surface similarity between Japanese passives and null prep in L2 grammar seems not to be a plausible account for the behavior among JLEs.

The second possible explanation for the different occurrence rates between passives and wh-questions is a conflict between L2 learners’ knowledge about P-stranding and L2 English input, which is similar to the account proposed in Klein (2001). Klein (2001) argues that L2 learners’ knowledge of a prohibition against P-stranding in natural languages and the frequent occurrence of P-stranding in English input leads L2 learners to adopt a conservative null operator movement, which

results in null prep in wh-questions (and relative clauses). In a similar fashion, we may be able to account for the different acceptance rates of null prep in passives and wh-questions as follows. Cross-linguistically, P-stranding in passive sentences is a more marked phenomenon than in wh-questions (van Riemsdijk, 1978; Sugisaki & Snyder, 2002; Law, 2006). Furthermore, unlike wh-questions, P-stranding is the only available option in passives. Thus, L2 learners' knowledge as to the rarity of P-stranding in natural languages and the unavailability of pied-piping caused the higher acceptance rates of null prep in passive sentences.

Although this explanation is satisfactory to some extent, it is insufficient insofar as it lacks some explanation for why P-stranding, though marked in many languages, is part of the grammar of English or for what underlying system is responsible for the determination of markedness in a given language. That is, what we need in order for our account to be more than merely *ad hoc* is not only a description of typological facts but a theory of the psychological system responsible for such observable markedness. However, as Klein (1993b) discusses at length, this is not an easy task and remains far from clear at the moment.¹⁰

The alternative possibility is that the different roles prepositions play in wh-questions and in passives made it more difficult for L2 learners to supply prepositions in passives and caused the higher rates of null prep. As discussed in Section 2, the two constructions are similar in that they are both extractions, but they differ in their motivations for movement: Wh-movement is force-driven whereas NP-movement is Case-driven. This difference leads to different roles for prepositions in the two constructions: Prepositions in wh-questions assign Case to their complements, while such Case-assigning function of prepositions is canceled somehow in passive sentences due to the presence of passive morphology. Thus, we can hypothesize that what is difficult for L2 learners to acquire and consequently makes null prep arise at a higher rate in passives is a native-like mechanism that prohibits prepositions from assigning Case to their complements, say, *reanalysis* (van Riemsdijk, 1978; Hornstein & Weinberg, 1981; Stowell, 1982) or more recently *Case-feature movement* (Law, 2006).¹¹

According to this explanation, the observed implicational relationship between the use of prepositions in wh-questions and passives — namely the fact that JLEs who can supply prepositions in passives can correctly supply them in related wh-questions as well but the reverse is not true — can be

¹⁰ For the psychological mechanism responsible for the typological markedness of P-stranding, see also van Riemsdijk (1978), Hornstein & Weinberg, (1981), Stowell (1982), Law (2006), and references cited there.

¹¹ We assume that Case-absorption for prepositions by passive morphology is implemented *before* Syntactic computation, presumably in the process of word formation, as hinted at in Sugisaki & Snyder (2002: 302 fn 16). That is, we assume that reanalysis of verbs and prepositions (or Case-feature movement in the case of Law (2006)) is not implemented in Syntax, but reanalyzed verbs are introduced in syntactic computation. This seems not implausible if we take a restriction on prepositional passives into account. As is well known, prepositional passives become ungrammatical if adjacency between verbs and prepositions is disrupted (van Riemsdijk, 1978; Stowell, 1982; Radford, 1988, among others).

- (i) a. The committee agreed *unanimously* on the resolution.
 b. *The resolution was agreed *unanimously* on by the committee. (Radford, 1988: 428)
- (ii) a. You can depend *entirely* on his integrity.
 b. *His integrity can be depended *entirely* on. (ibid.)

Given that information relevant to linear orders such as adjacency is not a property of Syntax (Chomsky, 1995), reanalysis should take place outside Syntax. In addition, as Baltin & Postal (1996) argue, if reanalysis is implemented in Syntax, pruning of a PP node must follow in order for a reanalyzed preposition to c-command its trace. However, this results in a violation of the Projection Principle (Chomsky, 1981, 1986). If reanalysis occurs before syntactic derivations, such a problem does not arise. Furthermore, the idea that reanalysis takes place before Syntax is consistent with Stowell's (1982) observation, which is subsequently supported by L1 acquisition data (Sugisaki & Snyder, 2002), that the possibility of P-stranding depends on the presence of a word formation rule to create a *verb + particle* complex predicate. Though Stowell himself assumes that reanalysis arises in D-structure in the case of passives, it is not surprising that a similar kind of word formation process exists in the case of prepositional verbs in passive sentences. Though we have to leave the precise formulation of the Case-absorption process for future research, we believe that this is a right kind of approach.

straightforwardly accounted for. In order for L2 learners to acquire wh-movement of complements of prepositions, it is sufficient to notice the positions where prepositions are permitted in English. This can be achieved by exposure to positive input. However, in order to correctly acquire prepositional passives, L2 learners have to learn more. That is, they have to acquire the productive mechanism that prevents prepositions from Case-marking their complements. If such a mechanism is absent in the L2 learner's grammar, complements of prepositions are doubly Case-marked and derivations do not converge. One solution is to omit prepositions, resulting in null prep. The other solution is to memorize individual combinations of *verb + preposition* as chunks one by one, which results in the sporadic use of prepositions in prepositional passives. In other words, the delay in the correct use of prepositions in passives would be expected given the absence of a native-like productive mechanism to prevent prepositions from assigning Case to their complements.

In summary, our study showed that JLEs accepted null prep more frequently in passive sentences than in wh-questions, which is consistent with Handa's (2004) observation, and we proposed that the higher occurrence rate of null prep in passives may result from the difficulty in acquiring a native-like productive system of Case-absorption for prepositions. Though we see a need for a more sophisticated and formal explanation in future research, the present study revealed that null prep in interlanguage is a far more complex phenomenon than previously reported and consequently previous accounts for null prep should be modified to take into account the present results.

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