Abstract
In recent work by Lardiere (2008, 2009), it is claimed that a considerable amount of the variability observed in the use of target morphology by second language (L2) learners can be explained by differences in the way in which universal features of linguistic representation are assembled into lexical items in the first language (L1) and L2. Variability is the result of learners having not yet fully reassembled features in a target-like way. This study examines the production of English subject wh-questions by Japanese adolescent classroom learners of English within the framework of the Feature Reassembly Hypothesis. Single wh-questions like “Who does she like? /Who likes Akina?” were elicited from learners at different proficiency levels. The results show a strong tendency to convert subject wh-questions into object wh-questions as well as an apparent failure in tense marking in subject wh-questions. It is argued that the delay in acquiring the form of subject wh-questions in relation to object wh-questions could be accounted for by a failure to reassemble wh and tense features in a target-like way.

1 Introduction

It has been one of the primary goals of L2 generative research to account for the widespread non-target-like production of inflectional morphology by L2 speakers. Recently, Lardiere has proposed a new approach to explaining this phenomenon by highlighting the difference in feature assembly between L1 and L2: variable production of morphology is derived from a failure to reassemble features into lexical items in the target language in a native-like way. This study applies the approach to accounting for the production of English single wh-questions by L1 Japanese adolescent classroom learners of English in elicited written and spoken production tasks. The findings suggest that the feature reassembly approach could explain similarities and differences
in production between the two types of \textit{wh}-questions: object and subject \textit{wh}-questions similarly obtained ‘be+non-finite V’ constructions and successful \textit{wh}-fronting, which suggests full access to UG and full transfer of functional elements; by contrast, only subject \textit{wh}-questions exhibited a strong tendency to insert \textit{do/be} and non-\textit{wh}-pronoun nominative subjects, which could be attributed to an evident failure to reassemble the two \textit{wh} and tense features into a single \textit{wh}-pronoun nominative subject.

The article is organised as follows. Section 2 reviews the feature reassembly account as applied by Lardiere (2009) to \textit{wh}-questions in three languages (English, Chinese, and Korean), and outlines the assumptions about the syntactic properties of single \textit{wh}-questions in English and Japanese, the two languages under investigation in this study. Section 3 describes the methodology used. The results of an experimental study are presented in Section 4, followed by discussion of the results in Section 5. The final section offers some concluding remarks.

2 Theoretical Background

2.1 \textit{Wh}-questions in the Feature Reassembly Hypothesis (Lardiere 2008, 2009)

The Feature Reassembly Hypothesis (henceforth, the FRH) proposes that persistent L2 variable morphological production (e.g., omission, faulty use, and overgeneration) is attributable to differences in the manner of and the “conditioning environments” for the assembly of features into lexical items between L1 and L2 (“the feature-reassembly approach”, Lardiere, 2008:114; 2009: 218). The FRH contrasts with approaches that attribute non-target-like production of morphology to failure to select appropriate features for L2 morphemes (“the feature-selection approach”, Lardiere, 2008:114).
The FRH is framed within the Minimalist Program (Chomsky, 1995, 1998, 2001, 2005) which assumes that language acquisition involves both universal constraints on the form that grammars can take and the learning of language-particular properties. The features, from which lexical items are constructed, form a universal and small set that are accessed by a uniform computational mechanism. However, the lexical items themselves, and the way the features are selected and assembled into those lexical items, are language-specific and must be learned from input from the target language.

Choi and Lardiere (2006a, b) investigated how the same universal features are assembled and realised differently in the formation of wh-questions in English and Korean, and how feature reassembly occurs in the L2 acquisition of Korean wh-questions by L1 English speakers. Both English and Korean select the features \([wh]\) and \([Q]\) (part of the universal inventory of features) for realising wh-questions. However, in English, both \([+wh]\) and \([+Q]\) features are assembled into a single lexical item, the *wh*-words *who* \([+human]\) or *what* \([-human]\). In Korean, each feature is assembled into independent words: the *wh* feature is encoded in the \([-human]\) form *mues*, meaning *‘thing’*, while the Q feature is encoded in the particles -ci or -ta. -ci has the feature \([+Q]\) and determines that *mues* will be interpreted as *‘what’*, while -ta has the feature \([-Q]\) and determines that *mues* will be interpreted as *‘something’*, as illustrated in (1 a/b, from Lardiere 2009:186).

1  
a. John-un Mary-ka *mues-ul* sassnun-ci an-ta  
   John-\textsc{top} Mary-\textsc{nominative} *thing*-\textsc{acc} bought-\textsc{qnom} know-\textsc{decl}  
   ‘John knows *what* Mary bought’  
b. John-un Mary-ka *mues-ul* sass-ta-ko an-ta  
   John-\textsc{top} Mary-\textsc{nominative} *thing*-\textsc{acc} bought-\textsc{decl}-\textsc{c} know-\textsc{decl}  
   ‘John knows (that) Mary bought *something’
Choi and Lardiere (2006a) found that 80 adult L1 English speakers of intermediate proficiency in Korean have difficulties in distinguishing -ci [+Q] from -ta [-Q]. They tend to interpret both as having a ‘question’ interpretation. This suggests that acquisition problems are attributed to the different ways of assembling [+wh] and [+Q] features for wh-questions between L1 and L2.

At the same time, Lardiere claims “the correct interpretations of Korean variable expressions are ultimately acquirable” (2009:187), based on the findings of a subsequent study (Choi and Lardiere 2006b): about 17% of highly-advanced L1 English learners showed target-like interpretation in both production and judgement tasks. This leads to an assumption that L1-L2 morpholexical correspondence can be detected, based on “semantic meaning or grammatical function” (2009:191). Lardiere assumes that L2 learners “initially seek the morpholexical equivalents” from “already-assembled lexical items” in the L1 to analyse L2 conditioning environments (2009:213).

2.2 Wh-questions in English and Japanese

As far as wh-movement goes, languages only have two possibilities. Wh-words either do or do not move to the front of the sentence: English has wh-movement, while Japanese exhibits no wh-movement. In English single wh-questions, a single word with wh- (e.g., what, who, when, where, why) moves to the beginning of the sentence (2a/b, from question items No.1 and No.29 in this study).

2a. Who does she like? (object wh-question)
2b. Who likes her? (subject wh-question)
By contrast, in Japanese, *wh*-words (e.g., *nani, dare, itsu, doko, naze*) remain in situ (3 a), but they ‘can’ move to the initial position through a scrambling operation, which is independent of *wh*-movement (3 b).

3  
      **She-TOP** **who-ACC** like-POLITE-PRESENT Q  
      ‘Who does she like?’
   
   b. **Dare-o** kanojyo-wa suki-des-u ka.  
      **Who-ACC** **she-TOP** like-POLITE-PRESENT Q  
      ‘Who does she like?’

Chomsky (2005) suggests that, in English, a *wh* feature on C in questions triggers *wh*-movement which results in the closest *wh*-word moving to the specifier position of C, just as an EPP feature on T results in a constituent moving to the specifier position of T. However, in the case of object *wh*-questions, C additionally attracts T itself. This suggests that *wh*-questions need two syntactic features: in addition to the *wh* feature, a tense feature on C attracts the closest tensed T constituent to C.

Radford (2009) uses these two features to account for a contrast between subject and object *wh*-questions in English. In object *wh*-questions, the *wh* feature on C attracts *wh*-words into a Spec C position (*wh*-movement), while the tense feature requires a tensed affix to move from T to C (T-to-C movement). In addition, the moved tensed affix on C, which is unable to find a verbal host, is spelled out as an inflected form of *do* (DO-support). By contrast, in subject *wh*-questions, both of the features “jointly attract” (Radford, 2009:220) nominative *wh*-pronouns into Spec C. Due to the

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1. The moved tensed affix on C is stranded because “the complement of C is not VP headed by an overt verb”, “but TP headed by a null T” (Radford, 2009:170/171).
2. Radford (2009: 168) mentions that *do*-support is “no DO-insertion operation” but “the spellout of a stranded affix”.
absence of T-to-C movement, a tense affix remains in T, which enables the affix to be lowered onto the head V of VP (Affix hopping\(^4\)).

In Japanese, a single wh-question is realised by two constituents, regardless of the kind of wh-question involved: a wh-word which is not fronted (dare/nani) and a clause-final question particle (\(ka^5\), no). Miyagawa (2001, 2003) and Soare (2007, 2012) argue that the absence of wh-movement in Japanese is attributable to the relation between a wh-feature and an EPP feature. In English, both Q feature and wh feature are on a wh-word, which allows the entire wh-word to pied-pipe to Spec, CP to satisfy the EPP feature on C (4, from Miyagawa, 2001:315).

By contrast, in Japanese wh-questions\(^6\), both assume a “morphological split between the Q-feature and the wh-feature” (Soare: 2007:108): the Q feature is encoded in a question particle (Q-particle) and the wh feature in the wh-word. Only the Q feature on C

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\(^4\) There are two ways of an Affix Attachment in PF operation, if an undeleted weak affix is not attached to an overt verb: either Affix Hopping or DO-support (Radford, 2009:168).

\(^5\) \(ka\) is used “in formal style and in all indirect questions” (Miyagawa, 2001:311).

\(^6\) This follows Watanabe (1992) and Hagstrom (1998, 2004).
attracts a Q-particle to satisfy the EPP feature on C, which results in the Q-particle ka at the right edge of a sentence. Miyagawa claims that the wh feature on T can move the wh-word to Spec, TP to satisfy the EPP feature on T, not to Spec, CP because it isn’t on C. This suggests that overt wh-movement in Japanese is a scrambling phenomenon of a wh-word. As shown in 5 (based on Miyagawa, 2001:313,319), a Q-particle ka “head-raises to C” (2001:328), in which ka emerges at the right edge of a sentence; while an object wh-word Dare-o moves to Spec, TP, to the front of the sentence, only when a subject DP does not move to satisfy the EPP feature on T.

5 Japanese

```
  C
   /\     
  /   \     
 TP   C
     +Q
```

\[\text{Dare-o} \quad \text{kanojyo-wa} \quad \text{suki-des-u} \quad \text{ka}.
\text{Who-ACC she-NOM like-POLITE-PRESENT Q}
\]

‘Who does she like?’

Soare (2012\textsuperscript{8}) argues that “the absence of an EPP feature associated with the \textit{wh}-feature” (2012:11) results in no \textit{wh}-movement in Japanese. Following the ‘feature

\textsuperscript{7} This analysis is based on the claim that an EPP feature is checked by either subject raising (A-movement) or verb raising (head-movement) (Chomsky, 2000; Alexiadou and Anagnostopoulou, 1998).

\textsuperscript{8} This article is under review as of 2012.
split’ analysis⁹, she assumes that the Q feature is on the Force head in “the left periphery” and the wh feature is on Focus head and that both of these two features ‘can’ be associated with an EPP feature which triggers “AGREE+MOVE” operations (2012:2). She categorises Japanese as a language with a “Q-feature [+EPP]” and a “Wh-feature [-EPP]”. As shown in 6 (based on Soare, 2012:7)¹⁰, with the EPP feature on the Q feature, Japanese has both AGREE and MOVE. The Q-particle no raises to Spec, ForceP (MOVE 2), via the movement to Spec, TP (MOVE 1); the uninterpretable valued wh feature on the wh-word nani-o agrees with “a covert interpretable unvalued wh-feature” (2011:11) on Focus (AGREE) before the movement to Spec, Force. On the other hand, with the absence of the EPP feature on the wh feature, Japanese undergoes only AGREE, without MOVE: the wh feature on the wh-word only agrees with the wh feature on Focus. It is argued that a ‘covert wh-feature without an EPP feature” (2012:11) causes a wh-word to stay in situ in Japanese.

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⁹ Soare claims that Miyagawa (2001), following Alexiadou and Anagnostopoulou (1998), suggests that Japanese should choose the Q- particle’s head-movement “for reasons of economy” (2007:111). However, Miyagawa clearly mentions that “I will take a different approach” (2001:317).

¹⁰ Soare assumes that the heads in Japanese are on the left branching node, as in English: the chart (6) (2007:110) shows a Q-particle no at the left edge, unlike that of Miyagawa (2001:313/319) (see chart 5).
6  Japanese

\[
\begin{array}{c}
\text{ForceP} \\
\text{no}_{+EPP} \\
\text{FocP} \\
\text{wh} \\
\text{TP} \\
\text{MOVE(2)} \\
\text{FocP} \\
\text{vP} \\
\text{SubjP} \\
\text{ObjP} \\
\text{AGREE} \\
\text{nani-o} \\
\text{kat} \\
\end{array}
\]

John-ga  nani-o  katta\textsuperscript{11}  no?  
John-NOM  what-ACC  bought  Q
`What did John buy?`

3  The Study

3.1 Participants

There were 132 Japanese adolescent learners of English who had received formal instruction in a classroom setting in this study. Table 2 summarises the details of the participants.

<table>
<thead>
<tr>
<th>L2 Data Mode</th>
<th>Number of Participants</th>
<th>Grade/Year</th>
<th>Age</th>
<th>Length of Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>132</td>
<td>12-20</td>
<td></td>
<td>8months-7.8years</td>
</tr>
</tbody>
</table>

\textsuperscript{11} kat-ta (buy-PAST)
They were divided into four groups, based not on a proficiency test\(^{12}\), but on length of English exposure\(^{13}\), as well as: (1) grade and the outcome of a linguistic background questionnaire for junior high school students; (2) age\(^{14}\) and TOEIC score (Test of English for international Communication\(^{15}\)) for university students. Junior high school students were recruited because in Japan English teaching started in the 1\(^{st}\) grade\(^{16}\) of junior high schools at the time of the experiment\(^{17}\): they were tested to investigate gradual development in each of three early stages of L2 acquisition. The 2\(^{nd}\)-year university students were recruited because a compulsory TOEIC course was scheduled in the 2\(^{nd}\) year in the non-English related department: they were tested to compare their interlanguage grammars in later L2 development with those of learners in early L2 development.

\(^{12}\) Only two junior high schools agreed to participate in this study, on condition that the task needs to: (1) take less than 40 minutes (including instructions and the distribution of materials); (2) be a written task; (3) be collected by their teachers in English class, because of their tightly-organised curriculum. Therefore, it was impossible to arrange a proficiency test with the equivalent number of participants for the spoken task.

\(^{13}\) In Slabakova’s study (2009:283), the number of class hours of German was employed to set the proficiency level for university students.

\(^{14}\) Unlike junior high school students, university students are not always the same age in the same year, which suggests the presence of students who have received additional English teaching for a year or more to take an entrance exam again.

\(^{15}\) A 400 multiple-choice task is expected to answer in 2 hours, designed to measure each ability of listening and reading comprehensions of L2 English learners: the perfect score is 990.

\(^{16}\) This is equivalent to the 7\(^{th}\) grade in the UK: the grade of junior high school students is indicated by that of the UK hereafter in this article.

\(^{17}\) English teaching in Japan has been moved forward by two years: from the 5\(^{th}\) grade of primary schools since April 2011, which was just after this study was conducted.
3.2 Materials

A picture-stimulus task was created with 63 items that participants had to complete in 30 minutes. It was designed to: (1) elicit both spoken and written production from the least proficient learners; (2) elicit both morphological and syntactic production including 28 grammatical properties relating to the Tense, Complementiser, and Determiner categories. The task allowed a comparison to be made between the production of verbal morphology and *wh*-fronting in single *wh*-questions in the same test item. Participants were required to make one of two responses: either to answer a question or to form a question. Each item consisted of: (1) a Japanese question sentence; (2) a bracketed Japanese instruction about which type of response was required; (3) a picture and one to three English words to help the participants write and speak an English answer; (4) 3rd singular personal proper nouns (e.g., *Ayako, Koji*), to have participants supply both nominative pronominal subjects and subject-verb agreement markers in the present tense.\(^{18}\)

3.3 Procedure

A main goal of the experiment was to make the elicited data from classroom leaners as spontaneous as possible. First, to prevent participants from drawing on their metalinguistic knowledge, the instructions given to them required: (1) that they write or speak whatever they first thought of, without worrying about the correctness; (2) that they neither asked for oral instructions during the task, nor revised their writing\(^ {19}\) or repeated their speaking. Furthermore, to stop them returning to previous answers, they were informed of the time at 5-minute intervals during which they were required to

\(^{18}\) The only exception is No.37, in which participants were expected to supply a 3rd person “plural” pronoun ‘they’ (in the expected answer “they aren’t kind”).

\(^{19}\) In the written task, the participants were prohibited from using an eraser.
respond to 10 items. Second, to prevent participants from being distracted by English words’ meanings and spellings, the Japanese translation of 10 English prompt words was given: in the written task, neither spelling errors nor answers in Japanese Katakana were regarded as wrong answers. Pilot studies found that thinking of the meanings and spellings of English words prevented initial learners from writing and speaking English in the very limited time.

4 Results

4.1 Wh-fronting
The rate with which participants fronted *wh*-words (who, what) in object and subject *wh*-questions was compared. Six of the items requiring a ‘question’ response involved *what* and six involved *who* (three 3ps-s contexts and three past contexts for each *wh*-word). Particularly in subject *wh*-questions, 8 standard transitive verbs (7 a) and 4 object Experiencer (OE) psychological (psych) verbs (7 b) were used.

7  
   a. **Who** painted the picture yesterday? (No. 13)  
   b. **What** disturbs him? (No.44)

Participants fronted *wh*-words in 100% of cases, regardless of the *wh*-word and type of

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20 12.3% of the total.  
21 ‘Katakana’ is used to transcribe foreign words into Japanese (e.g., カインド = ka-i-n-do = ‘kind’; バイク = ba-i-ku = ‘bike’) and to write loan words (e.g., アルバイト = a-ru-ba-i-to which is derived from ‘arbeit’ = “part-time job”).  
22 In 2007, 105 junior high school students answered a different elicited task; in 2010, 4 junior high school students did the same elicited task as that in this study.  
23 The total number of items is 12 (No.1, 7, 9, 11,16,22,26,32,41,51,57,63).  
24 The total number of items is 12 (No. 4,13,19,24,29,35,38,44,46,49,54,60).  
25 Object Experiencer verbs have an argument EXPERICNER, who “experiences some psychological state” (Radford, 2009: 245), in the object position: excite (No.38), disturb (No.44), interest (No.49) for 3ps present tense and surprise (No.24) for past tense.
question (object or subject) involved, as shown in Table 2.

Table 2  Accuracy of wh-fronting (%)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Object wh-questions</th>
<th>Subject wh-questions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Written Data</td>
<td>Spoken Data</td>
</tr>
<tr>
<td>JH 7th</td>
<td>n=27 100</td>
<td>n=12 100</td>
</tr>
<tr>
<td></td>
<td>(137/137)</td>
<td></td>
</tr>
<tr>
<td>8th</td>
<td>n=30 100</td>
<td></td>
</tr>
<tr>
<td>9th</td>
<td>n=30 100</td>
<td></td>
</tr>
<tr>
<td>U 2nd</td>
<td>n=30 100</td>
<td></td>
</tr>
</tbody>
</table>

(JH=Junior high school students; U=University students)

4.2 A clear asymmetry in tense marking between the two types of wh-questions

There was a sharp contrast in tense-marking between object wh-questions and subject wh-questions, as shown in Tables (3/4): accuracy rates were much higher for inflected do-forms in object wh-questions than for affixal forms in subject wh-questions. Ionin and Wexler (2002) found a similar asymmetry between affixal and inflected do forms, regardless of their different obligatory contexts. Furthermore, object wh-questions showed no difference between present 3ps and past tense, while with subject wh-questions the regular past-d was supplied more frequently than 3ps present-s.

Table 3  Suppliance rates in obligatory single object wh-question contexts (%)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Written Data</th>
<th>Spoken Data</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present</td>
<td>Past</td>
</tr>
<tr>
<td></td>
<td>does</td>
<td>did</td>
</tr>
<tr>
<td>Junior 7th</td>
<td>n=24 62.0</td>
<td>n=19 60.0</td>
</tr>
<tr>
<td>8th</td>
<td>n=27 85.6</td>
<td>n=28 81.7</td>
</tr>
</tbody>
</table>

Affixal forms were in affirmative sentences; do-forms were in negation contexts.
### Table 4  Suppliance rates in obligatory single subject *wh*-question contexts (%)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Written Data</th>
<th>Spoken Data (^{27})</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Present</td>
<td>Past</td>
</tr>
<tr>
<td>Junior 7th High School</td>
<td>n=25</td>
<td>4.0</td>
</tr>
<tr>
<td>8th</td>
<td>n=30</td>
<td>13.3</td>
</tr>
<tr>
<td>9th</td>
<td>n=29</td>
<td>10.3</td>
</tr>
<tr>
<td>University 2nd</td>
<td>n=30</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>114</td>
<td>7.9</td>
</tr>
</tbody>
</table>

#### 4.3 Conversion of subject *wh*-questions into object *wh*-questions

In the case of subject *wh*-questions, the participants showed a clear tendency to turn them into object *wh*-questions by inserting either *do* or *be* and adding another non-*wh*-pronoun, human subject (as in *What is he excite?* for the expected *What excites him?* – see section 4.4 for further discussion of the ‘*be* + bare *V*’ construction). Tables (5/6) show that in 49.4% (written data\(^{28}\)) and 67.1% (spoken data) of the expected subject *wh*-questions were produced with tense marked not on main verbs, but on either *do* or *be*. However, the appropriateness of tense marking in these cases was high, in both written (78.1%) and spoken (74.5%) data\(^{29}\). In addition, different trends were observed between standard verbs and OE psych verbs\(^{30}\). On the one hand, questions

\(^{27}\) The small total number of subject *wh*-questions in spoken data was caused by high incidence of erroneous production (i.e., insertion/conversion, see Table 6).

\(^{28}\) The mean of all proficiency groups in written data (57.2+36.4+47.7+56.4%).

\(^{29}\) Accuracy of tense marking in insertion/conversion/passive *do/be*: Written (78.1%: 434/556=72/112+89/113+86/127+187/204); Spoken (74.5%: 70/94).

\(^{30}\) Written data: Insertion: **standard** (245=40+38+57+110), object experiencer verbs (36=5+9+6+16). Conversion: standard (83=15+13+34+21), **object experiencer** (135=50+33+37+15). Passive: standard (11=0+4+7+0), **object experiencer** (73=2+16+13+42).
with standard verbs showed higher rates of: (1) *do/be* insertion to mark tense (in both written and spoken data); (2) relative pronouns with another verb to mark tense (in written data). On the other hand, questions with OE psych verbs showed higher rates of: (1) conversion into object *wh*-questions (in both written and spoken data); (2) passive sentences (in written data). In both of the cases, another non-*wh*-pronoun human subject as well as *do/be* were produced (see footnote 30).

### Table 5  Transformation in obligatory subject *wh*-questions (%) (Written data)\(^{31}\)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Insertion</th>
<th>Conversion</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wh+<em>do/be</em> +V?</td>
<td>Wh+*do/be+S+V?</td>
<td>Wh+<em>be</em>S+PP</td>
</tr>
<tr>
<td>Junior High School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7(^{th})</td>
<td>n=20</td>
<td>23 (45/196)</td>
<td>33.2 (65/196)</td>
</tr>
<tr>
<td>8(^{th})</td>
<td>n=30</td>
<td>15 (47/313)</td>
<td>15 (46/313)</td>
</tr>
<tr>
<td>9(^{th})</td>
<td>n=28</td>
<td>19.5 (63/323)</td>
<td>22 (71/323)</td>
</tr>
<tr>
<td>University</td>
<td>n=30</td>
<td>35 (126/360)</td>
<td>10 (36/360)</td>
</tr>
<tr>
<td>Total</td>
<td>108</td>
<td>23.6 (281/1192)</td>
<td>18.3 (218/1192)</td>
</tr>
</tbody>
</table>

(PP=past participle)

### Table 6  Transformation in obligatory subject *wh*-questions (%) (Spoken data)\(^{32}\)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Insertion</th>
<th>Conversion</th>
<th>Passive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wh+<em>do/be</em> +V?</td>
<td>Wh+*do/be+S+V?</td>
<td>Wh+<em>be</em>S+PP</td>
</tr>
<tr>
<td>Junior High</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7(^{th}) (n=12)</td>
<td>40 (56/140)</td>
<td>25.7 (36/140)</td>
<td>1.4 (2/140)</td>
</tr>
</tbody>
</table>

By contrast, there were few opposite cases of conversion of object *wh*-questions into subject *wh*-questions. In the written production data, the rate of conversions was 1.4%\(^{33}\). In addition, in those cases which look like they might be conversions of object

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31 Insertion: *do* (243=33+42+49+119), *be* (38=12+5+14+7: *be*+non-finite V). Conversion: *do* (187=58+37+57+35), *be* (31=7+9+14+1: *be*+S+non-finite V).

32 Insertion: *do* (41), *be* (15= *be*+non-finite V). Conversion: *do* (24), *be* (12= *be*+S+non-finite V).

33 Written: 7\(^{th}\) 3.1% (4/131), 8\(^{th}\) 1.9% (6/315), 9\(^{th}\) 1.8% (6/334), U2\(^{nd}\) 0% (0/351). Spoken: 7\(^{th}\)
wh-questions into subject wh-questions, an alternative interpretation is that they were object wh-questions with OVS order (e.g., *Who likes Kaori?/ Who likes she?*; *What know everyone?/ Who help Yusuke*), judging from the expected answers.

### 4.4 ‘Be+non-finite verb’ constructions

As observed in section 4.3, there were a number of cases where in both object and subject wh-questions, ‘be with a non-finite verb complement’ was produced instead of *do*. In object wh-questions, in most cases, *be* was used for auxiliary *do*, followed by a subject and a non-finite verb (‘Wh-word+*be*+subject+non-finite verb’, 8 a/b); in a few cases, ‘Wh-word+[*be*+non-finite verb]+subject’ was observed (9 a/b). In subject wh-questions, two different patterns were observed: ‘Wh-word+[*be*+non-finite verb]’ (10 a/b) was produced as a subject wh-question, while ‘Wh-word+*be*+subject+non-finite verb’ (11 a/b) was produced as a converted object wh-question in obligatory subject wh-question contexts.

<table>
<thead>
<tr>
<th>Case</th>
<th>Sentence</th>
<th>Participant</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 a</td>
<td>What is everyone know?</td>
<td>[JH 7th P9]</td>
<td>Spoken</td>
</tr>
<tr>
<td></td>
<td>(No.22 What does everyone know?)</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>8 b</td>
<td>Who is he see every morning?</td>
<td>[JH 9th P9]</td>
<td>Written</td>
</tr>
<tr>
<td></td>
<td>(No. 9 Who does he see every morning?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 a</td>
<td>Who is invite he last week?</td>
<td>[JH 7th P3]</td>
<td>Spoken</td>
</tr>
<tr>
<td></td>
<td>(No.41 Who did he invite last week?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 b</td>
<td>Who is like she?</td>
<td>[JH 9th P23]</td>
<td>Written</td>
</tr>
<tr>
<td></td>
<td>(No.1 Who does she like?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 a</td>
<td>What is excite Takashi?</td>
<td>[JH 7th P3]</td>
<td>Spoken</td>
</tr>
</tbody>
</table>

0 % (0/137).

34 Expected answers: No.1 *Who does she (Kaori) like?*; No.22 *What does everyone know?*; No.51 *Who did he (Yusuke) help yesterday?* They account for 37.5% (6/16) of the total cases of converted object wh-questions.

35 Junior high school students, the 7th grade, participant No.9.

36 Question No.22 and the expected answer.
As shown in Tables (7/8), between subject and object wh-questions, there was no discrepancy in the incidence of ‘be+bareV’ in either type of production data. However, the spoken data and less proficient groups showed the higher incidence rates than the written data and more proficient groups (except for the 9th group).

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Object wh-questions</th>
<th>Subject wh-questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior High School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th (n=21)</td>
<td>16.8% (22/131)</td>
<td>8.2% (19/233)</td>
</tr>
<tr>
<td>8th (n=30)</td>
<td>0.3% (1/315)</td>
<td>4.5% (14/313)</td>
</tr>
<tr>
<td>9th (n=30)</td>
<td>7.8% (26/334)</td>
<td>8.2% (28/341)</td>
</tr>
<tr>
<td>University</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd (n=30)</td>
<td>2.6% (9/351)</td>
<td>2.2% (8/358)</td>
</tr>
<tr>
<td>Total</td>
<td>n= 117</td>
<td>5.4% (61/1131)</td>
</tr>
</tbody>
</table>

Table 8  Incidence of ‘be+bareV’ (%) (Spoken Data)

<table>
<thead>
<tr>
<th>Proficiency Groups</th>
<th>Object wh-questions</th>
<th>Subject wh-questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7th (n=12)</td>
<td>13.1% (18/137)</td>
<td>19.3% (27/140)</td>
</tr>
</tbody>
</table>

The ‘be+bareV’ construction has been observed in previous studies of the early English of L2 learners across a variety of L1s, ages of first exposure and context of learning.

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37 ‘be+bareV+S’ is included: Written 7th (1 case), 8th (1 case), 9th (5 cases); Spoken 7th (4 cases).
38 ‘be+bareV’ (69)=Insertion[Wh-word+ be+non-finite verb] (38=12+5+14+7) +Conversion[Wh-word+be+S+non-finite verb] (31=7+9+14+1).
39 ‘be+bareV’ (27)=Wh-word+ be+non-finite verb (15)+Wh-word+be+S+non-finite verb (12).
Some of the studies are summarised in Table 9.

<table>
<thead>
<tr>
<th>L2 English Studies</th>
<th>L2 Data Mode</th>
<th>‘be+bare V’</th>
<th>L1 background</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionin&amp;Wexler</td>
<td>Spoken</td>
<td>25%</td>
<td>Russian</td>
<td>3-13</td>
</tr>
<tr>
<td>(2002:111)</td>
<td>Spontaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yang and Huang</td>
<td>Written</td>
<td>23% (45/191)</td>
<td>Cantonese</td>
<td>-</td>
</tr>
<tr>
<td>(2004)</td>
<td>Classroom</td>
<td>9% (164/1821)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>García Mayo et al.</td>
<td>Spoken</td>
<td>6% (4/62)</td>
<td>Basque/Spanish</td>
<td>7-15</td>
</tr>
<tr>
<td>(2005:466)</td>
<td>Spontaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 Discussion

5.1 Full access and full transfer

The results suggest full access to UG and full transfer of functional components. Firstly, the distribution of ‘be+non-finite V’ was similarly observed in both types of wh-questions (see Tables 7/8), as in other L2 English studies, regardless of differences in learners’ L1 backgrounds and ages (see Table 9). In particular, the less learners are exposed to L2 English teaching, the more they produced wh-questions involving ‘be+non-finite V’ (see Table 7). This suggests that the construction is reflective of a UG-derived restructuring process in early L2 development and that UG guides early L2 learners in identifying be forms as “general all-purpose finiteness markers” (Paradis, 2007:392).

Secondly, 100% target-like wh-fronting in both subject and object wh-questions (see

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Based on the descriptions from Hawkins and Casillas (2008: 598) because it was impossible to obtain the article: 23% in unaccusative verb contexts, 9% in other verbal contexts.
Table 2), as well as no resumptive pronouns in the relative clauses which were produced as substitutes for subject *wh*-questions\(^{41}\) (see footnote 30), entail the presence of a functional category C: a *wh* feature on C forces a *wh*-word in VP to move into Spec of CP (*wh*-movement). Furthermore, consistent use of *do*-support, including the conversion of subject to object *wh*-questions (see Tables 3, 5, 6), might be evidence for the presence of a functional category T (Ionin and Wexler, 2002:113): a tense feature on C moves *do* in TP to head C of CP (T-to-C movement). In addition, use of *be* forms “implicat[es] the presence in the syntactic representation of the associated functional category” (Lardiere, 1999: 394). The findings could provide strong support for the argument that syntactic knowledge has no impairment.

### 5.2 Reassembly of [*wh*] and [*Q*] features

The fronting of *wh*-words exhibited no failure in either subject or object *wh*-questions (see Table 2), regardless of differences in feature assembly between L1 and L2, as shown in Table 10 below. This suggests success in reassembly of the [*+wh*] and [*+Q*] features into a single L2 lexical item ‘*wh*-word’, as well as clear evidence for unimpaired L2 grammar (see section 5.1).

Table 10 Feature assembly in Japanese and English *wh*-questions

<table>
<thead>
<tr>
<th>Lexical items</th>
<th>Features</th>
<th>Japanese</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[<em>+wh</em>]</td>
<td>-</td>
<td><em>what</em> / <em>who</em></td>
</tr>
<tr>
<td></td>
<td>[- <em>wh</em>]</td>
<td><em>nani</em> / <em>dare</em></td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>[<em>+Q</em>]</td>
<td><em>ka</em> / <em>no</em></td>
<td>Ø</td>
</tr>
</tbody>
</table>

\(^{41}\) The relative clauses as substitutes were found in object *wh*-questions as well, although the number was smaller than that in subject *wh*-questions. This study includes neither data nor discussion because it doesn’t focus on this issue.
In Japanese \textit{wh}-questions (see section 2.2), it is assumed that: (1) the two features are represented by two respective lexical items: one is [-\textit{wh}] on a \textit{wh}-word ‘\textit{nani/dare}’, the other is [+\textit{Q}] on a \textit{Q}-particle ‘\textit{ka/no}’ (Watanabe, 1992; Hagstrom, 1998, 2004); (2) the Japanese \textit{wh} feature disallows the \textit{wh}-word to satisfy an EPP feature on C, which results in the absence of \textit{wh}-movement; (3) only the \textit{Q} feature on C attracts a \textit{Q}-particle to satisfy the EPP feature on C, which results in the \textit{Q} particle \textit{ka/no} at the right edge of a sentence (Miyagawa, 2001, 2003; Soare, 2007\textsuperscript{42}, 2012). By contrast, in English, it is assumed that both \textit{Q} feature and \textit{wh} feature are on a \textit{wh}-word, which allows the entire \textit{wh}-word to pied-pipe to Spec, CP to satisfy the EPP feature on C (Miyagawa, 2001).

5.3 \textbf{Reassembly of [\textit{wh}] and [\textit{tense}] features}

As discussed above (see sections 5.1/2), ‘\textit{be}+\text{non-finite \textit{V}}’, ‘\textit{do-support}’, and \textit{wh}-fronting showed similar results in both types of \textit{wh}-questions. By contrast, tense marking showed a clear asymmetry between object and subject \textit{wh}-questions. First, subject \textit{wh}-questions demonstrated lower accuracy rates than object \textit{wh}-questions (see Tables 3/4). Second, subject \textit{wh}-questions exhibited a strong, unidirectional trend: subject \textit{wh}-questions were converted into object \textit{wh}-questions (the mean 22\%, see Tables 5/6), while object \textit{wh}-questions were hardly converted into subject \textit{wh}-questions (the mean 1.4\%, see footnote 33). The results in this study, as well as pilot studies\textsuperscript{43}, revealed that in subject \textit{wh}-question formation, L1 Japanese adolescent classroom learners, regardless of proficiency, showed a strong tendency to produce two lexical items to assemble two features respectively: (1) another non-\textit{wh}-pronominal subject to assign nominative case; (2) auxiliary \textit{do/be} forms to mark tense [+/-past]. This might

\begin{footnotesize}
\textsuperscript{42} See footnote 10.
\textsuperscript{43} 2007: 105 junior high school students (8th grade) in the different written task. 2010: 4 junior high school students (7th) in the same written task. Both of the participants showed a similar tendency in \textit{wh}-question formation.
\end{footnotesize}
be reflective of a failure to reassemble morphosyntactic and semantic features into lexical representations, caused by a difference in feature assembly between L1 Japanese and L2 English.

In Japanese, single _wh_-questions show no difference in lexical representation between object and subject _wh_-questions. Two features are assembled into the two respective constituents: a _wh_-word (_dare/nani_) for [-_wh_] and a question particle (_ka, no_) for [+Q] (see example 3 in section 2.2). On the other hand, in English object _wh_-questions, two features are assembled into the two lexical items respectively: a _wh_-word for [+_wh_] in _wh_-movement and _do_-support for [tense] in T-to-C movement. This could help successful tense marking on _do_ forms\(^{44}\) and little discrepancy in accuracy between _does_ and _did_ (see Table 3). However, in English subject _wh_-questions, both features are assembled into a single _wh_-pronoun which is a nominative subject: a _wh_-word represents [+_wh_] as a nominative subject, while a tense affix is marked on a main verb, as a result of no T-to-C movement (Pesetsky and Torrego, 2001; Radford, 2009, see section 2.2). In particular, such an affix lowering on main verbs could cause: (1) difficulties in tense marking; (2) a clear asymmetry in suppliance between 3ps-s and regular past-\(d\) (see Table 4), as observed in affirmative and affirmative with-VP-adverb contexts in this study. This suggests another failure to reassemble relevant morphosyntactic features on the main verbs into lexical representations. In 3ps-s, there is a difference in manner of feature assembly between L1 and L2. In L2 English, three agreement features [-past][3rd person][singular] are assembled into a single lexical item -s, while L1 Japanese has neither corresponding process nor lexical item. L1

\(^{44}\) Applying the assumption about the success in _be_ forms (Ionin and Wexler, 2002: 128), highly accurate tense marking of _do_ forms could be attributed to UG access, because: (1) the consistent production of _do_-support were observed also in another L2 English study (Ionin and Wexler, 2002); (2) _do_ forms performed in the same way as _be_ forms in this study.
Japanese assembles a feature [-past] into a lexical item-\textit{ru}\textsuperscript{45} and has neither indefinite markers that corresponds to ‘\textit{a}’ in English (Yoshida, 2009: 426), nor equivalent lexical items to encode ‘semantically singular’. By contrast, in regular past-\textit{d}, L1 Japanese has one-to-one corresponding lexical item-\textit{ta/da} with phonetic similarities\textsuperscript{46}.

Furthermore, differences were found between standard verbs and OE psych verbs in subject \textit{wh}-questions: (1) standard verbs showed either insertion of \textit{do/be} or relative clauses involving another non-\textit{wh}-pronoun human subject and verb; (2) OE psych verbs exhibited either conversion into object \textit{wh}-questions or passive sentences involving another non-\textit{wh}-pronoun human subject (see footnote 30). Particularly in OE psych verbs, such a redundant human pronoun subject might be attributed to difficulty in reassembling semantic features [+human] [+aminate] into an EXPERIENCER object. Japanese counterparts of OE psych verbs allow people in both THEME-subject and EXPERIENCER-object as given in 12. This causes difficulty in distinguishing subject experiencer verbs (i.e., \textit{fear}) from OE verbs (i.e., \textit{frighten}), as shown in 13 (from White et al., 1999:171,175).

12 Yutaro-wa okaasan-o odoroka-se-ta.  
\textit{Yutaro-TOP Mother-ACC surprise-CAUSE-PAST}  
‘Yutaro surprised Mother.’

13 John \textbf{fears} exams.  \textit{(EXPERIENCER-subject)}  
*John frightens exams. \textit{(EXPERIENCER-object in the subject position)}

Also, a different transitive-intransitive correspondence in Japanese could cause a failure in reassembly of the semantic features: intransitive verbs are a base form and transitive

\textsuperscript{45} Japanese has regular present morphology –\textit{ru} (Kubo and Suwa, 2007; Kudo, 1985).

\textsuperscript{46} Both are alveolar stops and have similar allophones (based on the presentation slides by Nasukawa, 2012).
verbs need additional causative morphemes. Intransitive verbs, as well as verbal adjectives, are prioritised to describe the psychological states, in which EXPERIENCERS are consistently in the subject position, as given in 14. This could result in passive sentences involving human subjects in obligatory subject $wh$-question contexts, in order to switch the EXPERIENCER from object to subject, as shown in 15.

14 Yutaro-wa sono hanashi-ni odoroi-ta.
   Yutaro-TOP the story-at surprise-PAST
   ‘Yutaro was surprised at the story.’

15 What surprised him? (object-EXPERIENCER)
   What was he surprised at? (conversion to subject-EXPERIENCER)

6 Conclusion

The central goal of this study was to account for the variable production of L2 English subject $wh$-questions by L1 Japanese adolescent classroom learners in both written and spoken data, within the framework of the Feature Reassembly Hypothesis. This study found: (1) adolescent Japanese-English interlanguage suggests no deficit in syntactic knowledge; (2) reassembly failures could be the source of selective variability in L2 English $wh$-questions. This suggests that the evident failure in acquiring the form of subject $wh$-questions could be accounted for by the claims of the feature reassembly approach. Future research, involving a larger sample size in spoken tasks, additional semantic features in relation to lexical aspect and argument structure, must be undertaken, to provide further support for the feature reassembly account in single English $wh$-question formation.
Acknowledgements

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References


