Why Are Subject Wh-Questions More Difficult than Object Wh-Questions?  
A Study of Japanese Young Learners of English  

Akiko Muroya  

1. Introduction  

Minimalism (Chomsky, 2000, 2001, 2004) has shifted the focus from the setting of individual formal features to the composition of features onto particular lexical items in functional categories. Features are selected from a universal inventory made available by Universal Grammar (UG, the tacit knowledge of the grammar with which a human is born) and bundled up with other relevant features on a morphological item in a language-specific way. This is based on the two continuous processes that Chomsky characterises as language acquisition: (1) a one-time selection of a particular \(F\) (a subset of linguistic features) from \(F\) (a universal set of linguistic features); (2) a one-time assembly of a particular \(Lex\) (the lexicon of a language \(L\)) from \(F\). Generative second language acquisition (SLA) research has provided a number of hypotheses to account for persistent difficulty in L2 acquisition, by focusing on feature-related properties. For example, the Interpretability Hypothesis (Hawkins & Hattori, 2006; Tsimili & Dimitrakopoulou, 2007) associate the locus of acquisition problems with the unavailability of the uninterpretable features which were not selected or activated in the L1. This hypothesis suggests the permanent deficit of L2 grammar. The Feature Reassembly Hypothesis (Lardiere, 2008, 2009), on the other hand, attributes L2 learners’ variability to L1-L2 differences in featural assembly which are “acquirable” (Lardiere, 2013:10). This view reflects unimpaired L2 grammar, although the ease or difficulty of the acquisition is assumed to depend on L1-L2 pairings. The current study contributes to the discussion by focusing on how the features are involved in the particular difficulty experienced by Japanese learners with English subject wh-questions.  

This paper reports on an empirical study that investigates how Japanese young L2 learners acquire English single wh-questions. English and Japanese have the same features (wh/Q/case) but with their respective different compositions. Furthermore, English wh-questions have another [+tense] feature and there are also differences between subject and object wh-questions, while Japanese wh-questions have neither tense feature nor distinctions between the two types of wh-questions. This study will show a sharp contrast in accuracy between subject wh-questions (7.3%) and object wh-questions (74.5%). The lower accuracy rate of subject wh-questions is attributable to two kinds of unnecessary lexical items:  

- be (e.g., What is catch _ mouse last night?)  
- do-forms (e.g., Who did paint _ picture yesterday?)  
- a non-wh-pronoun (e.g., Who is she who has a doll? / What does he excite? / What is he excited?)  

This also suggests conversion into three types of structures (relative clauses, object wh-questions, and passive voice). The discrepancy reflects more challenging L2 learning tasks in subject wh-questions. The
paper discusses some proposals which may support the results obtained, including the Interpretability Hypothesis and the Feature Reassembly Hypothesis. Ultimately, it is proposed that a particular difficulty with English subject wh-questions is responsible for a failure in feature-reassembly, and not the unavailability of uninterpretable features nor problems in syntactic knowledge.

The article is organised as follows: Section 2 describes the role of the relevant features in Japanese and English single wh-questions. Section 3 presents the research questions and methodology, followed by the results in Section 4. Section 5 discusses three SLA proposals and their key predictions for the current study. Finally, Section 6 provides discussion, some concluding remarks, and directions for future research.

2. Single Wh-questions in Japanese and English

2.1. Wh-Parameter

The Wh-Parameter determines whether a wh-expression is moved to the front of an interrogative sentence: a language either does or does not allow wh-expressions to be systematically fronted. In single wh-questions (i.e., questions including a single wh-word at the beginning), English allows a wh-word (e.g., what, who, when, where, why) to move to the front of the sentence in both object wh-questions and subject wh-questions (1 a/b).

(1)  a. Who does she like?  (Object wh-question)  
   b. Who likes her?  (Subject wh-question)

By contrast, in Japanese, the wh-word (e.g., nani, dare, itsu, doko, naze) is not systematically fronted but remains in situ in both subject and object wh-questions (2 a/b).

(2)  a. Kanojyo-wa dare-o suki-des-u ka.  (Object wh-question)  
      She-TOP who-ACC like-POLITE-PRESENT Q  
      ‘Who does she like?’

   b. Kanojyo-o dare-ga suki-des-u ka.  (Subject wh-question)  
      Her-ACC who-NOM like-POLITE-PRESENT Q  
      ‘Who likes her?’

However, the wh-word ‘can’ move to the initial position by scrambling, not by wh-movement in both types of wh-questions (3 a/b).

(3)  a. Dare-o kanojyo-wa suki-des-u ka.  (Object wh-question)  
     Who-ACC she-TOP like-POLITE-PRESENT Q  
     ‘Who does she like?’

   b. Dare-ga kanojyo-o suki-des-u ka.  (Subject wh-question)  
     Who-NOM her-ACC like-POLITE-PRESENT Q  
     ‘Who likes her?’

2.2. A tense feature in English C

Chomsky (2005) has suggested that it is a wh feature1 that triggers wh-movement: the [+wh] on C in questions attracts a wh-word to move from the VP-complement position to the CPspecifier position. Miyagawa (2001:315) argues that both the wh feature and a Q feature are on a single wh-word, which allows the entire wh-word to pied-pipe to spec-CP to satisfy the EPP feature on C (4).

1 This is also known as ‘an edge feature’.
Furthermore, Radford (2009:168/220) suggests that English single wh-questions entail a tense feature which behaves differently between subject and object wh-questions. In the case of object wh-questions, the tense feature on C attracts the closest tensed T constituent to C. However, the T constituent is spelled out as ‘do + T’ because it is an affix and cannot be realised without a verbal host (DO-support). This suggests that the wh feature on an accusative wh-pronoun drives wh-movement, while the tense feature allows for T-to-C movement of the tensed do form.

By contrast, in subject wh-questions, both the wh and tense features “jointly attract” a single nominative wh-pronoun to spec-C (Pesetsky & Torrego, 2001; Radford, 2009). Thus, economic considerations result in the absence of T-to-C movement: the tense affix remains in T and subsequently is lowered onto the head V of VP (Affix Hopping2). In other words, the wh feature on C requires the wh-word to move to spec-C, and at the same time the tense feature on C requires a tensed constituent to be positioned on the edge of CP. This suggests that a tensed wh-pronoun moves from spec-T to spec-C, to satisfy the requirements of both wh and tense features on C, with a verb marked with the tense affix.

2.3. A Q feature in Japanese C

Miyagawa (2001, 2003) and Soare argue that there is a “morphological split between the Q-feature and the wh-feature” (Soare, 2007:108) in Japanese wh-questions3. Specifically, a Q feature is encoded in a question particle (Q-particle) and the wh feature in the wh-word. In other words, the Q feature on C attracts the Q-particle to the right edge of a sentence, while the wh feature on ‘T’ (not C) attracts the wh-word to spec-TP.

Following Miyagawa, as illustrated in (5) (Miyagawa, 2001:313/319), the Q-particle ka (used when a verb has a polite suffix masu/desu, Iwasaki, 2013:14) “head-raises to C” (Miyagawa, 2001:328) and thus emerges at the right edge of a sentence, to satisfy the Q feature on C, whereas an object wh-word dare-o moves to spec-T, to the front of the sentence, to satisfy the EPP feature on T, only when a subject DP does not move4. This suggests that the fronting of the wh-word is the result of scrambling, not of wh-movement.

---

2 There are two possibilities of an Affix Attachment in the PF operation, if an undeleted weak affix is not attached to an overt verb: either Affix Hopping or DO-support (Radford, 2009:168).
3 This follows Watanabe (1992) and Hagstrom (1998, 2004).
4 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).
It appears plausible to assume that English and Japanese have distinct features that play a crucial role in \textit{wh}-question formation. In English, the \textit{wh} feature triggers \textit{wh}-movement and the tense feature allows the differences between subject and object \textit{wh}-questions: the different location of the tense feature and the different case feature on a \textit{wh}-pronoun. By contrast, in Japanese, the Q feature contributes to the absence of \textit{wh}-movement but no feature creates any distinctions between the two types of \textit{wh}-questions: it is easy to change an object \textit{wh}-question (6a) to a subject \textit{wh}-question (6b, repeated 3a/b), by replacing the accusative case particle -\textit{o} with a nominative one -\textit{ga} after the \textit{wh}-word \textit{dare} at the beginning, the topic marking particle -\textit{wa} with a case particle -\textit{o} after the pronoun \textit{kanojyo} respectively.

\begin{itemize}
  \item[(6) a.] \textbf{Dare-o} \textit{kanojyo-wa} \textit{suki-des-u} \textit{ka}. (Object \textit{wh}-question)
  \begin{itemize}
    \item Who-ACC she-TOP like- POLITE-PRESENT Q
    \end{itemize}
  \textit{Who does she like?}
  \item[(6) b.] \textbf{Dare-ga} \textit{kanojyo-o} \textit{suki-des-u} \textit{ka}. (Subject \textit{wh}-question)
  \begin{itemize}
    \item Who-NOM her-ACC like- POLITE-PRESENT Q
  \end{itemize}
  \textit{Who likes her?}
\end{itemize}

3. The Study

3.1. Research questions

This study investigates how Japanese young instructed learners acquire English subject and object \textit{wh}-questions. The research questions are as follows:

\begin{itemize}
  \item (1) Will Japanese young learners of L2 English succeed in \textit{wh}-movement in both types of \textit{wh}-questions?
  \item (2) Will Japanese young learners of L2 English acquire DO-support and nominative case marking in object-\textit{wh} questions?
  \item (3) Will Japanese young learners of L2 English succeed in Affix-Hopping in subject \textit{wh}-questions?
\end{itemize}

3.2. Participants

Participants in the study were selected from two (integrated junior and senior) high schools (one public and one private) and one university, all located in urban areas of Japan. A total of 132 young Japanese-speaking instructed learners of English took part in the study. Table 1 shows the breakdown of these learners by age.
Table 1
Participants (W: Written; S: Spoken)

<table>
<thead>
<tr>
<th>Grade/Year</th>
<th>Age</th>
<th>Number by task</th>
<th>Hours of English Class Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Junior high (CEFR A1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1st</td>
<td>12-13</td>
<td>30 (W)</td>
<td>160</td>
</tr>
<tr>
<td>2nd</td>
<td>13-14</td>
<td>30 (W)</td>
<td>360</td>
</tr>
<tr>
<td>3rd</td>
<td>14-15</td>
<td>30 (W)</td>
<td>560</td>
</tr>
<tr>
<td>University (CEFR B1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2nd</td>
<td>19-20</td>
<td>30 (W)</td>
<td>1560</td>
</tr>
</tbody>
</table>

Junior high school students were recruited to investigate the L2 initial state and early development because Japanese children started to receive formal English instruction from the first grade of junior high school. University students, on the other hand, were selected to examine later development, because, given their proficiency level, they are assumed to be in neither the L2 initial nor the end state. The experiment was conducted when the first-grade junior high school students had received eight months of exposure to English. L2 learners in the earliest stages of acquisition are assumed to go through ‘a silent period’ which usually lasts around six months. The number of hours of English class exposure was adopted as a proficiency measure. This was calculated by taking the total hours per week by the number of teaching weeks in the academic year in Japan.

Additional measures were taken to guarantee homogeneity of proficiency within the same group. For junior high school students, a linguistic background questionnaire was carried out to exclude any students who had received English immersion education, either in Japan or in English-speaking countries, before or after entering junior high school. For university students, the TOEIC (Test of English for International Communication) was employed, whereby the students with scores between 650-680 were selected. This study had no control group as it examined core properties of English that even the least proficient learners could answer. Additionally, it should be noted that a pilot study carried out prior to the current study showed native speakers of English to make no errors.

3.3. Materials and procedure

As a result of the pilot study findings and the requirement to conduct only one task, a production task was selected as the best single method to test the grammatical knowledge that both early stage and developmentally more advanced young instructed learners have. Each test item consisted of a question in Japanese and a picture with a few prompt words in English. Below please see a sample practice item (7) and a sample test item (8) from the study. The actual test items had no English glosses nor the expected answers, which are added here for illustration purposes only.

---

5 According to a contrastive table made by an organisation consisting of six groups which are the members of the panel related to the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) in Japan, junior high school students and university 2nd year students fall into a category CEFR (Common European Framework of References for Languages) A1 and B1 respectively.

6 The experiment was carried out two months before the formal introduction of English language teaching in Japanese elementary schools in April 2011.

7 Grüter and Conradie (2006) and White (2003b) both note that it might be impossible to explore whether grammatical knowledge is present in the earliest production data.

8 Five hours x 40 weeks (excluding eight weeks as summer, winter, and spring holidays) amount to 200 hours per year.

9 The overall high accuracy rates suggested that comprehension-based tasks are not suitable for exploring grammatical knowledge in very early stages.

10 The two junior-senior schools which kindly cooperated set certain restrictions due to their tightly-managed curriculum.
A sample test item from the study

(8) 35. 「自転車が欲しい人」を尋ねてください。

‘Please ask a question about a person who wants a bike.’ (Question)

bike (自転車), want [An expected answer: Who wants a bike?]

The pilot study highlighted a number of issues which careful written and spoken instructions sought to prevent. First, to remove the participants’ excessive obsession with correctness, they were instructed to: (1) write or say whatever they first thought of; (2) neither revise their writing by using an eraser nor repeat/correct what they had said. They were warned that if they did repeat or correct anything, these answers would not be scored. Second, to prevent the learners from struggling with the meaning or spelling of English stimulus words, Japanese translations were provided thereof. Spelling errors and writing in Japanese Katakana\(^{11}\) were not marked as errors. Third, to reduce the likelihood of the participants drawing on their metalinguistic knowledge and to further encourage them to finish all of the question items, they were informed of the time every five minutes, during which they had to answer ten items.

4. Results

4.1. Subject-object *wh* asymmetry in accuracy

Figures 1 - 4 show the mean percentages for accuracy in subject and object *wh*-questions in both obligatory contexts (3SG -s and past tense\(^{12}\)). These demonstrated a clear asymmetry, regardless of the type of production task (Figures 1/2) or participant groups (Figures 3/4). Looking first at each production task (Figures 1/2), a one-way ANOVA confirms a statistically significant difference between subject and object *wh*-question within-subject variables: (Written) \(p < 0.01\); (Spoken) \(p < 0.05\). In the group results (Figures 3/4), the one-way ANOVA confirms a statistically significant difference between subject and object *wh*-question: (3SG) \(F = 67.08, p < 0.01\); (Past) \(F = 17.60, p < 0.05\). Furthermore, another distinction

---

\(^{11}\) In Japanese, *katakana* is used to write loan words. Both *katakana* and *hiragana* are syllabaries, where each of the 46 symbols represents a unit of ‘mora’: either a single vowel (V) or a consonant-vowel combination (CV) (Iwasaki, 2013:25) (e.g., テスト=te-su-to=test).

\(^{12}\) The past tense was conflated as one group in subject *wh*-questions (regular -ed and irregular forms) in order to allow comparison with the past category in object *wh*-questions (did).
was found between the two types of *wh*-questions. In object *wh*-questions, the accuracy rates corresponded to the number of hours of English class exposure, except for junior high (JH) second-grade. This suggests a trend such that the greater the number of hours of English exposure, the more accurately the learners could produce object *wh*-questions. By contrast, subject *wh*-questions showed no correlation between accuracy rates and the length of English exposure. This could reflect the Japanese learners’ persistent difficulty with subject *wh*-questions. The one-way ANOVA confirms a significant group effect (*p* < 0.05) in both types of *wh*-questions; however, the multiple comparisons, using the HSD method, show a statistically significant difference only between JH second-grade and JH third-grade/university (U) second-year groups in subject *wh*-questions (Figure 5) and between JH first-grade and U second-year in object *wh*-questions (Figure 6).

**Figure 1.** Accuracy rates in written and spoken productions (%): 3SG *-s/does*

<table>
<thead>
<tr>
<th></th>
<th>Subject-wh</th>
<th>Object-wh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written (n=120)</td>
<td>5.1</td>
<td>76.3</td>
</tr>
<tr>
<td>Spoken (n=12)</td>
<td>26.2</td>
<td>89.1</td>
</tr>
</tbody>
</table>

**Figure 2.** Accuracy rates in written and spoken productions (%): past (-ed/irregular) *did*

<table>
<thead>
<tr>
<th></th>
<th>Subject-wh</th>
<th>Object-wh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written (n=120)</td>
<td>9.5</td>
<td>64.6</td>
</tr>
<tr>
<td>Spoken (n=12)</td>
<td>23.9</td>
<td>84.6</td>
</tr>
</tbody>
</table>

---

13 The learners from the junior high schools consisted of two groups. One group of second-grade junior high school learners exhibited a higher deviation than the other school of first and third-grade junior high school learners.
Figure 3. Accuracy rates by participant groups in written production (%): 3SG -s/does

<table>
<thead>
<tr>
<th>Group</th>
<th>Subject-wh</th>
<th>Object-wh</th>
</tr>
</thead>
<tbody>
<tr>
<td>JH1(n=30)</td>
<td>3.6</td>
<td>52.0</td>
</tr>
<tr>
<td>JH2(n=30)</td>
<td>13.3</td>
<td>86.7</td>
</tr>
<tr>
<td>JH3(n=30)</td>
<td>3.3</td>
<td>72.4</td>
</tr>
<tr>
<td>UN2(n=30)</td>
<td>0</td>
<td>90.0</td>
</tr>
</tbody>
</table>

Figure 4. Accuracy rates by participant groups in written production (%): past (-ed/ irregular)/did

<table>
<thead>
<tr>
<th>Group</th>
<th>Subject-wh</th>
<th>Object-wh</th>
</tr>
</thead>
<tbody>
<tr>
<td>JH1(n=30)</td>
<td>7.7</td>
<td>41.7</td>
</tr>
<tr>
<td>JH2(n=30)</td>
<td>23.3</td>
<td>65.5</td>
</tr>
<tr>
<td>JH3(n=30)</td>
<td>0</td>
<td>53.3</td>
</tr>
<tr>
<td>UN2(n=30)</td>
<td>0</td>
<td>93.3</td>
</tr>
</tbody>
</table>

Figure 5. Subject wh-questions by participant groups in both contexts

<table>
<thead>
<tr>
<th>Group</th>
<th>JH1</th>
<th>JH2</th>
<th>JH3</th>
<th>UN2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4.2. Subject-object wh asymmetry of errors

Another asymmetry was observed in the erroneous production between subject and object wh-questions. In subject wh-questions, all learner groups exhibited insertion of two items (be and do) and conversion into three types of structures (object wh-questions, passive voice, and relative clauses). In Figure 7, it should be noted that all the junior high school students frequently inserted do. The inserted do is assumed to be the auxiliary/support do, as emphatic do is not included in the English curriculum for junior high schools in Japan. Based on the results of error types (Figure 7), the insertion of be and the conversion to object wh-questions show no statistically significant correlation with the hours of English class exposure (see Table 1), while the other error types show a weak correlation ($p < 0.01$). It is assumed that the two error types are attributable to the persistent difficulty that Japanese learners of English face.

By contrast, the object wh-questions showed the opposite effect, with very few cases of converted subject wh-questions observed, as shown in Figure 8. The descriptive results suggest that the conversion might be unidirectional from subject to object wh-questions. The conversion rates tended to become lower as the length of English exposure increased.
4.3. Two redundant constituents in erroneous production of subject wh-questions

As illustrated in Section 4.2, all participant groups produced the two erroneous patterns (insertion and conversion) only in subject wh-questions. It should be further noted that the erroneous pattern is related to the kind of main verbs used in subject wh-questions: (1) standard verbs (like, have, know, want, go, paint, write, watch, study, receive, see, meet, buy, invite, play, catch, attack); (2) psychological state verbs (surprise, excite, disturb, interest). On the one hand, 87% of insertion and 78% of conversion into sentences with relative pronouns were observed in questions with standard verbs (see Example 9); however, the earliest learner group (JH first-grade) produced no cases of the relative clause because they had yet to learn it. On the other hand, in question items with the psychological state verbs, 62% of converted object wh-questions and 87% of converted passive sentences were found (Example 10).

(9) Standard verbs
[Insertion: Wh+do/be+V?]
  a. Who did paint _ picture yesterday? [JH 1st No.2, Spoken]
  b. What is catch _ mouse last night? [JH 1st No.3, Written]
[Relative clause: Wh+is+S+relative pronouns +V]
  c. Who is she who has a doll? [JH 2nd No.2, Written]
  d. Who is the girl that have the doll? [U 2nd No.6, Written]

(10) Psychological State (Experiencer object) verbs
[Object wh-questions: Wh+do/be+S+V?]
  a. What does he excite? [JH 1st No.5, Spoken]
  b. What does he surprise yesterday? [JH 2nd No.13, Written]
[Passive voice: Wh+be+S+past participle]
  c. What is he interested in? [JH 1st No.11, Spoken]
  d. What is he excited? [JH 3rd No.10, Written]

Overall the results demonstrated a strong tendency to produce two types of unnecessary constituents, but only in subject wh-questions: (1) do or be; (2) non-wh pronoun. It should be noted that over half of the production (53% of the written; 71.2 % of the spoken) marked the tense on either do or be, not on a main verb, but that the accuracy rates of the tense on do/be was relatively high in both written (78.1%) and spoken (74.5%) data.
5. L2 Research Hypotheses

5.1. The Interpretability Hypothesis
(Hawkins & Hattori, 2006; Tsimpli & Dimitrakopoulou, 2007)

The Interpretability Hypothesis (IH, Tsimpli & Dimitrakopoulou, 2007) proposes that uninterpretable morphosyntactic features are problematic for L2 learners. Uninterpretable features serve as the morpho-phonological exponent of syntactic expressions (e.g., [wh]) and the selection requires linguistic input during a critical period. By contrast, interpretable features function as the semantic component of syntactic expressions (e.g., [Q]), permanently controlled by Universal Grammar (UG, see Section 1). It is assumed that the uninterpretable features that have not been selected in L1 acquisition will disappear from the UG inventory, while any interpretable features are available throughout life. This hypothesis suggests a permanent impairment of L2 grammar. In other words, the uninterpretable features not selected in the L1 but required in the L2 are never acquirable. Under the IH, it is predicted that Japanese learners of English are likely to be unable to acquire an uninterpretable feature that drives wh-movement in interrogative sentences because the uninterpretable [uwh] feature was not selected during a critical period when all the features were available: they will face lifelong difficulties with English wh-questions due to the unavailability of the uninterpretable features not selected in the L1.

Hawkins and Hattori (2006) tested the Interpretability Hypothesis (Tsimpli & Dimitrakopoulou, 2007), by investigating how nineteen L1 Japanese advanced speakers (aged 22-43) interpret L2 English bi-clausal multiple wh-questions (e.g., Where did the professor say the students studies when?). They explain the difference in single wh-questions between Japanese and English, applying Adger (2003)'s proposal that Agree involves valuing and deleting an uninterpretable feature. Both Japanese and English wh-questions have an interpretable feature [uwh:] in situ.

(11) [C, Q, uwh:] ... [D, wh] → [C, Q, uwh: wh] ... [D, wh]

On the other hand, English wh-questions have an additional requirement [uwh*:] (valuing of [uwh:] within the immediate projection of interrogative C) that forces a wh-expression to move to the specifier of [C, Q, uwh:*] to value [uwh:*] (12), which leads to wh-fronting.

(12) [C, Q, uwh:*] ... [D, wh] → [D, wh [C, Q, uwh: wh]] ... <[D, wh]>

According to Adger (2003:368/369), English has the valued uninterpretable feature triggering wh-movement [uwh*], while Japanese has a “[w]eak [uwh] feature” (Adger, 2003:370). This suggests the absent uninterpretable feature prevents successful acquisition of English wh-question by Japanese learners. The results revealed that the highly-proficient Japanese adults exhibited the unavailability of the uninterpretable feature [uwh*] that requires the movement of a wh-word/phrase in English wh-questions, which is compatible with the IH’s prediction. It is assumed that the wh-fronting aims to value an uninterpretable feature [uFoc*] of Focus, not the [uwh*] feature of C. This suggests obligatory scrambling, not wh-movement. It is also noted that the “apparent target-like L2 performance” (Hawkins & Hattori, 2006:298) does not provide evidence for the successful acquisition of L2 grammar because all constituents, except for the unselected uninterpretable features in L1, remain available in the UG inventory throughout life in the process of L2 acquisition.

5.2. The Feature Reassembly Hypothesis (Lardiere 2008, 2009)

The Feature Reassembly Hypothesis (FRH, Lardiere, 2008, 2009) suggests that an L1 entrenched system of features, categories, and conditions is a possible source of learnability problems in L2 acquisition. Lardiere assumes that the differences between L1 and L2 grammars are attributable to the different manners in which interpretable and uninterpretable features are selected and configured into morpholexical items.

This hypothesis “follows and builds on FT/FA” (Lardiere, 2009:191). The FTFA (Schwartz and Sprouse, 1994, 1998) proposes that L2 initial grammar is unimpaired and L1-based and the development

14 “by assuming the ‘full transfer’ part and attempting to further develop the ‘full access’ part” (Lardiere, 2009:191).
is L2 input-driven. Under the FTFA, it is predicted that Japanese learners of English have L1-transferred functional categories with specified features (i.e., [-wh][+Q] in Japanese C) but can restructure their interlanguage grammars when the L1-based grammar cannot incorporate L2 input: they will be able to form English single wh-questions, by choosing features (e.g., [tense]) from the UG inventory or changing the specification (e.g., [+wh][+Q] on what), based on L2 input.

The FRH, framed within the Minimalist Programme (Chomsky, 1995, 1998, 2001, 2005), presupposes that features come from the universal inventory for all languages but are selected and assembled in a language-specific way. This feature-based hypothesis has two underlying assumptions about the L2 acquisition process. First, the FRH assumes two L2 learning tasks, based on Chomsky’s two continuous processes with which L1 language acquisition is characterised (Chomsky, 2000, 2001, 2004): feature selection and feature assembly into a particular L2 morpholexical item (13).

(13) Two learning tasks in L2 acquisition (F: features/ML: morpholexical items)
1. Feature Selection  
   \[ \text{L1 Japanese} \rightarrow \text{L2 English} \]
2. Feature Reassembly  
   \[ \text{L1 Japanese} \rightarrow \text{L2 English} \]

This suggests that L2 learners must select features and package them into L2-specific morpholexical items, whereby successful L2 acquisition depends on the differences and similarities (between L1 and L2) in the selection and assembly of the features.

Table 2 illustrates two learning tasks for L1 Japanese learners to produce L2 English single wh-questions. As explained in Section 2, in Japanese, single wh-questions have a morphological split (Miyagawa, 2001, 2003; Soare, 2007), where a wh feature is encoded in a wh-word and a Q feature in a question particle ka\textsuperscript{15}. There is no distinction in feature composition between subject and object wh-questions. By contrast, in English single wh-questions, both wh and Q features are on a single wh-word. In addition, a tense feature plays a different role between subject and object wh-questions (Radford, 2009:168/220).

Table 2  
Two Learning tasks for L1 Japanese learners of L2 English

<table>
<thead>
<tr>
<th>L1 Japanese [F → ML]</th>
<th>L2 English [F → ML]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[-wh] e.g., nani</td>
<td>[+wh] e.g., what</td>
</tr>
<tr>
<td>[+Q] ka</td>
<td>[+Q]</td>
</tr>
<tr>
<td>Object wh [accusative] - o -</td>
<td>[accusative] e.g., what</td>
</tr>
<tr>
<td>Subject wh [nominative] - ga -</td>
<td>[nominative]</td>
</tr>
<tr>
<td></td>
<td>[+tense] e.g., what (-s/-ed)</td>
</tr>
</tbody>
</table>

Table 3 demonstrates the differences in learning tasks between subject and object wh-questions. Japanese learners of English have to notice: (1) the new tense feature and its different location; (2) the different case features on a wh-pronoun in subject versus object wh-questions.

Table 3  
Differences in learning tasks between object and subject wh-questions in L2 English

<table>
<thead>
<tr>
<th>L2 English Object wh-questions [F → ML]</th>
<th>L2 English Subject wh-questions [F → ML]</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+wh] [+Q] [accusative]</td>
<td>e.g., what</td>
</tr>
<tr>
<td>[accusative]</td>
<td>do/does/did</td>
</tr>
<tr>
<td>Subject wh [nominative] [+tense]</td>
<td>e.g., what (-s/-ed)</td>
</tr>
</tbody>
</table>

\textsuperscript{15} ‘no’ (a nominaliser or sentence extender SE, not a question particle) is used with the abrupt verb form (the form without the polite suffix ‘desu/masu’) and a rising intonation (Iwasaki, 2013:14).
Second, this hypothesis assumes two determinants of learnability problems in L2 acquisition (14).

(14) Two determinants of L2 learnability problems
1. Same Features \( L1\ [F] = L2\ [F] \)
2. Different Configurations \( L1\ [F \rightarrow ML] \neq L2\ [F\rightarrow ML] \)

Lardiere assumes “the greater difficulty for the second language acquirers” to be in those cases where interpretatable or uninterpreatable features are shared by both L1 and L2 but are configured differently (Lardiere, 2009:215) because it might be more difficult to delearn already-assembled lexical items than to learn new assembly. This suggests that L2 learners must assemble the right combinations of both existing L1 features and possible newly-acquired L2 features into the correct morpholexical items for the L2. Under the FRH, it is predicted that Japanese learners of English will face a more complex L1-L2 contrast, a puzzling configuration of the existing L1 ([wh][Q][case]) and new L2 ([tense]) features. They will have to: (1) notice the new tense feature which functions differently between subject and object wh-questions; (2) learn the different case features on a wh-pronoun in both types of wh-questions.

Choi and Lardiere (2006a, b) investigated how the same 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 [wh] and [Q] features from the universal inventory of features for realising wh-questions. However, in L1 English, both [+wh] and [+Q] features are assembled into a single lexical item, wh-word (who [+human]/what [-human]). In L2 Korean, each feature is assembled into independent words: the wh feature is encoded in mues (‘thing’), the [-human] form, whereas the Q feature is encoded in -ci or –ta, morphological particles on verbs. One of the particles -ci has the feature [+Q] which determines that mues will be interpreted as ‘what’, whereas the other -ta has the feature [-Q] which determines that mues will be interpreted as ‘something’, as illustrated in (15 a/b) (Lardiere, 2009:186). This creates an additional representation that L1 English learners must reassemble.

(15) a. John-un Mary-ka mues-ul sassunu-ci an-ta
   John-TOP Mary-NOM ‘thing’-ACC bought-Q know-DECL
   ‘John knows what Mary bought’

b. John-un Mary-ka mues-ul sas-ta-ko an-ta
   John-TOP Mary-NOM ‘thing’-ACC bought-DECL-C know-DECL
   ‘John knows (that) Mary bought something’

Results from Choi and Lardiere (2006a)’s study showed that: (1) eighty adult L1 English speakers of intermediate proficiency in Korean had difficulties in distinguishing -ci [+Q] from -ta [-Q]; (2) they tended to interpret the two expressions [+Q][-Q] as the single [+Q] (=what [-human]). This suggests that acquisition problems can be attributed to the different ways of assembling [wh] and [Q] features for wh-questions between L1 and L2. However, with sufficient exposure to the target language, “the correct interpretations of Korean variable expressions are ultimately acquirable” (Lardiere, 2009:187). In a subsequent study, Choi and Lardiere (2006b) found that about 17% of highly-advanced L1 English learners showed target-like interpretation in both production and judgement tasks. This leads to the assumption that L1-L2 morpholexical correspondence can be detected, based on “semantic meaning or grammatical function” (Lardiere, 2009: 191).


Organic Grammar (OG, Vainikka & Scholten, 2009, 2013) is the new version of the Minimal Trees Hypothesis (Vainikka and Scholten, 1994, 1996a/b). This hypothesis contrasts with the Full Transfer Full Access Hypothesis (FTFA, Schwartz and Sprouse, 1994, 1996) in terms of the initial state and developing process in L2 acquisition. OG claims that functional categories and related features are absent at the early stages but are gradually acquired in the development process. This hypothesis suggests that L2 initial grammar is temporarily impaired and the development is UG-driven. It is assumed that L2 initial grammar has no transfer of L1 functional projections with relevant features, but the syntactic structure is gradually built in a fixed order (VP(i) < VP(ii) < NegP < TP < AgrP < CP). More specifically, the L2 initial grammar
lacking functional projections develops into a language-specific functional structure (i.e., “Master Tree”, Vainikka and Scholten, 2009:63), by interacting with primary linguistic data, which are led by UG options, as in L1 child acquisition: “the interaction of primary linguistic data with UG enables the learner to progress further to build functional structure that begins to resemble that of the target language” (Vainikka and Scholten, 2009:55/56). In the L2 hierarchical syntactic structure, a Complementiser Phase (CP) projection, where a wh-question is formed, is the highest and last stage. This suggests the complete acquisition of the lower functional projections and the corresponding functional morphology. Under OG, it is hypothesised that Japanese early learners of English have yet to acquire the last CP stage: they will be unable to produce English subject and object wh-questions.

Mobaraki, Vainikka, and Young-Scholten (2008) suggest that early L2 English data from two Farsi child learners provide evidence for the absence of nominative case marking in the L2 initial state. The early L2 data are in stark contrast with those of Haznedar’s study (2001) from a Turkish-speaking boy, demonstrating the presence of nominative case-marked subjects from early on. The results showed both “non-target pronominal subjects” at the early stages and a “decline in null subjects with emergence of finite verbs and nominative case marking” in the subsequent development (Mobaraki, Vainikka, and Young-Scholten, 2008:210/231). It is concluded that the findings provide evidence for the acquisition of a new layer in the target structure (a functional projection AgrP) as in UG-driven L1 acquisition and confirm the OG’s predictions.

6. Discussion and Conclusions

6.1. Discussion of findings

The aim of this study was to examine how Japanese young instructed learners acquire the two types of English single wh-questions, by addressing the following three research questions (repetition from Section 3.1).

(1) Will Japanese young learners of L2 English succeed in wh-movement in both types of wh-questions?
(2) Will Japanese young learners of L2 English acquire DO-support and nominative case marking in object wh-questions?
(3) Will Japanese young learners of L2 English succeed in Affix-Hopping in subject wh-questions?

Regarding the first research question, Japanese learners, across all groups, exhibited a 100% target-like wh-movement in both types of wh-questions, despite the marked discrepancy in accuracy between the two kinds of wh-questions. It should be assumed that the perfect success of wh-fronting reflects no impairment in L2 initial and developing grammars. The results obtained in this study thus do not support the IH’s prediction that Japanese has not selected the locally-valued uninterpretable feature [uwh*:] in L1 acquisition (Hawkins and Hattori, 2006:276). Also, the unavailability of the valued uninterpretable features in L2 acquisition could not explain the asymmetry in accuracy between the two types of wh-questions (see Figures 1/2). Adger (2003:361-369) argues that English subject and object wh-questions share the same uninterpretable feature [uclause-type] on T but differ as to the valuing. This suggests that object wh-questions involve T-to-C movement, but subject wh-questions lack the movement. More specifically, in object wh-questions, the uninterpretable feature is valued as [Q], where T-to-C movement has occurred, and wh-expression moves into the specifier of CP. In subject wh-questions, on the other hand, the [uclause-type] feature is valued as [wh], which prevents T-to-C movement, and the wh-expression moves into the specifier of TP. The clear asymmetry in accuracy between the two types of wh-questions might be attributable to the difference in valuing of the same uninterpretable feature. However, it appears implausible to assume that the results obtained in this study lend some support to the IH’s predictions. In other words, further investigation is needed to explore how the specifically-valued uninterpretable feature would be involved in the Japanese learners’ difficulty with English subject wh-questions.

In terms of the second research question, the learners across all groups had no difficulty with DO-support in both the accurate and erroneous converted object wh-questions. In addition, they produced appropriate nominative subjects and operated wh-fronting. The results indicated that the relevant
functional categories and the specified features, which allow the successful syntactic operations, were present. This suggests that their L2 initial and developing grammars are assumed to have the functional categories T and C in parallel. The findings are consistent with the FTFA, which proposes that L2 early learners already have functional categories (e.g., T and Agr) with the specified features (e.g., φ, an EPP, and finite) necessary for syntactic operations (e.g., nominative overt subjects). Under the FTFA, even Japanese earliest learners (e.g., JH first-grade) are likely to succeed in the syntactic operations when they can restructure their L1-transferred initial grammar. In other words, the successful DO-support and nominative case marking provide counterevidence for OG’s claims that L2 initial grammar has no transfer of functional categories and the development is “stagelike” (Vainikka and Scholten, 2011:581), “constrained by only UG” (Vainikka and Scholten, 2009:56) as in L1 child acquisition (see Section 5.3).

Specifically, the L2 syntactic structure is gradually and hierarchically built in a fixed order (VP(i) < VP(ii) < NegP < TP < AgrP < CP), where a Complementiser Phrase (CP) projection for a wh-question formation is the highest and last stage. Under OG, it is predicted that Japanese initial learners (e.g., JH first-grade) will be unable to notice syntactic properties beyond a VP projection: they will have difficulty producing wh-questions, regardless of the types of single wh-questions. This suggests that OG’s claims are unable to explain the asymmetry between the two types of wh-questions.

In relation to the third research question, Japanese young learners demonstrated a complete failure in Affix-Hopping, instead replacing it with the inserted and converted subject wh-questions. However, the results indicated that the insertion and conversion were not attributable to the syntactic impairment of L2 grammar. First, both inserted and converted patterns exhibited: (1) relatively high accuracy rates of the tense on do/be in both written (78.1%) and spoken (74.5%) data; (2) 100% wh-fronting; (3) 100% nominative case marking. Second, the converted patterns showed: (1) the total absence of overt resumptive pronouns of the erroneous relative clauses; (2) the consistent use of DO-support. The accuracy of nominative case marking and the consistent use of DO-support are both suggestive of a functional category T, as in object wh-questions. Furthermore, it should be noted that the total absence of resumptive pronouns in the converted relative clauses could provide supporting evidence for a functional category C. These inserted and converted erroneous subject wh-questions point to: (1) the initial presence of functional categories (T and C) and relevant specified features transferred from L1; (2) the restructuring process to accommodate differences between the two kinds of wh-questions in early L2 development. This is consistent with the FTFA’s predictions which underlie the FRH (see Section 5.2). Under the FTFA, it is hypothesised that Japanese initial learners have L1-transferred functional categories with specified features (e.g., [-wh] [+Q] in Japanese C) but can change their L1-based grammar into L2 knowledge, led by UG, when they fail to parse L2 input. L1 Japanese will be able to choose any interpretable/uninterpretable features from the UG inventory (e.g., [tense]), or changing the specification (e.g., [+wh]), based on L2 input (e.g., [+wh] [+Q] [tense]). However, they will face difficulty acquiring English wh-questions, in the cases where some L1 features (e.g., specification, composition, and representation) have strong and persistent effects on the restructuring.

The results obtained in this study showed no impairment in the L2 initial grammar but a sharp contrast in accuracy between subject and object wh-questions, both of which could be better explained by the FRH’s predictions. In other words, the results confirmed the key prediction that L2 learnability problems are attributable to reassembling the same features into different configurations. Under the FRH, Japanese learners of English are assumed to face complex learning tasks of the existing L1 ([wh][Q][case]) and new L2 ([tense]) features, as encapsulated in Table 4 (repetition of Table 1). More specifically, they are likely to show an inability to notice the different assembly of the same features between the two types of wh-questions: (1) the tense feature on different lexical items; (2) different case features on a wh-pronouns in subject versus and object wh-questions.
Table 4
Two learning tasks for L1 Japanese

<table>
<thead>
<tr>
<th>L1 Japanese</th>
<th>L2 English</th>
</tr>
</thead>
<tbody>
<tr>
<td>([\text{F} \rightarrow \text{ML}])</td>
<td>([\text{F} \rightarrow \text{ML}])</td>
</tr>
<tr>
<td>([-\text{wh}])</td>
<td>([+\text{wh}])</td>
</tr>
<tr>
<td>(\text{e.g., } \text{nani})</td>
<td>(\text{e.g., } \text{what})</td>
</tr>
<tr>
<td>([+\text{Q}])</td>
<td>([+\text{Q}])</td>
</tr>
<tr>
<td>(\text{ka})</td>
<td>(\text{do}/\text{does}/\text{did})</td>
</tr>
</tbody>
</table>

Object \(\text{wh}\) [accusative] 
- 
- 

Subject \(\text{wh}\) [nominative] 
- 
- 

All participant groups (even the earliest learner group) succeeded in assembling the \(\text{wh}\) and Q features (shared by L1 and L2) into a single \(\text{wh}\)-word (different configurations) without any exception, regardless of the types of \(\text{wh}\)-questions. In other words, Japanese young learners were able to unlearn the movement of the Q-particle to check the \([\text{Q}]\) feature and learn the T-to-C movement of the \(\text{wh}\)-word to check the \([+\text{wh}]\) feature on C. Furthermore, it is predicted that Japanese learners of English will have to assemble the same features (the existing \([\text{wh}]\)[case] and the new \([\text{tense}]\) features) in a different manner between the two types of \(\text{wh}\)-questions (see Table 2). In object \(\text{wh}\)-questions, where accuracy rates were relatively high (Figures 1-4), Japanese learners of English appear able to select the new tense feature and to assemble it into \(\text{do}\) forms.

However, in subject \(\text{wh}\)-questions, the learners failed to notice the assembly of the mixed multiple features into a single \(\text{wh}\)-word, which resulted in the two erroneous patterns, as illustrated in Table 5.

Table 5
Two erroneous patterns with two verb types

<table>
<thead>
<tr>
<th>Verb Types</th>
<th>Erroneous Patterns</th>
<th>Two Redundant Items</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>be/do</td>
</tr>
<tr>
<td>Standard</td>
<td>Insertion</td>
<td>√</td>
</tr>
<tr>
<td></td>
<td>Conversion: Relative clauses</td>
<td>√</td>
</tr>
<tr>
<td>Psychological</td>
<td>Conversion: Object (\text{wh})</td>
<td>√</td>
</tr>
<tr>
<td>State</td>
<td>Conversion: Passive structures</td>
<td>√</td>
</tr>
</tbody>
</table>

First, the errors with standard verbs (insertion of \(\text{be}/\text{do}\) and conversion into relative pronouns) (see Example 9) suggest the failure to select and assemble the new tense feature into a \(\text{wh}\)-word. Particularly, the earliest learners (JH first-grade) showed the highest average rates of inserted \(\text{be}\): 11.4% (Spoken); 6.2% (Written). This lends some support to Paradis (2007)’s assumption that early L2 learners could identify \(\text{be}\) as a general all-purpose finiteness marker. Second, the errors with psychological state verbs involving an Experiencer-object (conversion into object \(\text{wh}\)-questions and passive sentences) (see Example 10) indicated that the \([\text{wh}]\)[case]/[tense] features were assembled into the respective lexical items (a \(\text{wh}\)-word, a non-\(\text{wh}\)-pronoun, and \(\text{do}/\text{be}\)). In addition, they might reflect a further failure to discern another feature \([+\text{human}]\) on an Experiencer object due to the absence of Experiencer object-verbs\(^{16}\) in Japanese. This could cause the learners to seek an Experiencer \([+\text{human}]\) subject, which resulted in the conversion into object \(\text{wh}\)-questions and passive sentences. Given the overall results, it is plausible to assume that Japanese young learners of English produce \(\text{be}\) or \(\text{do}\) to mark \([\text{tense}]\) and a non-\(\text{wh}\)-pronoun to assemble both \([\text{nominative}]\) and \([+\text{human}]\). In other words, the two types of redundant constituents are reflective of their failure to notice a joint distribution ([\(\text{wh}]\)[tense][case][human]) into a single \(\text{wh}\)-word, which is

---

\(^{16}\) Japanese has to take a combination of ‘Experiencer subject-verbs + causative morphology’ to make an equivalent form of English Experiencer-object verbs: e.g., \text{odorok-u} (intransitive verbs with causer-subject) → \text{odorok} (stem) + \text{a} (stem forming suffix) + \text{ser} (auxiliary suffix) + \text{u} (Iwasaki, 2013) = surprise.
essential for English subject *wh*-questions. This suggests that Japanese learners of English must recognise 'a tensed /nominative *wh*-pronoun' in subject *wh*-questions (Radford, 2009:220/222).

6.2. Conclusions and directions for future research

The overall results of the four Japanese learner groups have provided some evidence for an unimpaired L2 initial grammar; however, they have exhibited a persistent difficulty with subject *wh*-questions, where a strong tendency to produce the two types of redundant constituents was found: *be/do* and a non-*wh* pronoun. This is reflective of Japanese learners’ failure to recognise ‘a tensed /nominative *wh*-pronoun’ in subject *wh*-questions (Radford, 2009:220/222). The results revealed that Japanese young learners of English were unable to notice the assembly of multiple features into a single *wh*-word in subject *wh*-questions. The findings are consistent with the FRH prediction that L2 learnability problems are attributable to the different assembly of the existing features shared by both L1 and L2. This feature-based hypothesis could account for why these learners exhibited the clear asymmetry in accuracy between subject and object *wh*-questions. Furthermore, the FRH can provide a fine-grained explanation for the erroneous structures (insertion and conversion) observed in the subject *wh*-questions, which are ascribed to the L1-L2 difference in feature configuration, and not to syntactic impairment. In future research, it would be useful to increase the number of verb types used in the test items and to collect further spoken production data from learners with varying lengths of English exposure. In addition, future study will need to investigate the L2 acquisition of Japanese *wh*-questions by L1 English young instructed learners, which could be a great help to further examine the predictive power of the FRH.

References


