These findings are compatible with the ‘modulated structure building’ account of L2 grammar-building which we have been developing. Initial grammars consist of lexical projections with the structural properties of the L1 in principle – but evidence in the input for different head-complement orders in those projections may lead to rapid restructuring. Functional projections like IP and CP are established later than lexical projections, again in principle, but the rapidity with which they are established depends on the property of I or C in question, and the evidence available in the input the learner gets. Vainikka and Young-Scholten claim that there is no L1 influence on the way that the functional category I develops in L2 German. However, given that ‘modulated structure building’ proposes that L1 influence only becomes relevant at appropriate points in the specification of functional categories, it could be that Vainikka and Young-Scholten’s subjects are either too elementary or too advanced in their development to show such effects.

In the next section we will consider the role that CP plays in the structure of English questions, and examine whether L2 learners of English acquire English question formation by building the appropriate representation for CP in their mental grammars.

More Advanced Discussion

4.8 The second language acquisition of English questions

Section 4.8 illustrates the difference between yes/no and wh-questions, and outlines a descriptive generalization about the L2 development of questions. The role that CP plays in question formation is then discussed, and a proposed parametric difference between languages is described. Finally, we ask whether the L2 descriptive generalization can be explained as the result of learners building a grammatical representation for CP.

There are two main types of question in English. Firstly, yes/no questions to which one can answer simply ‘yes’ or ‘no’; these are formed by moving copula be, auxiliary be, have, a modal verb (like can, must, may) or expletive do (when a thematic verb is the main verb) to the front of the sentence, as illustrated in (27a); or by using a ‘tag’ formula at the end of the sentence, as in (27b). Secondly, there are information or wh-questions, which are introduced by phrases which go generally under the name of wh-phrases like who? what? which book? why? how? In wh-questions a finite copula, auxiliary, modal or expletive do moves to second position in the clause, as illustrated in (27c); i.e. the contraction is just like the more general ‘verb second’ construction in German:

27a  Is she happy?
     Can I have some...
     Does she know you?
     She's happy, isn’t she?
     I can have some...
     She knows you, doesn’t she?
     c  Why is she happy?
     What can I have?
     Which book did you buy?
     How do you do?

There is also a syntactic difference in embedded clauses (where the copula, auxiliary, modal or expletive do remains in the sentence, but remain in the clause) (do not appear in the sentence):

28a  I wonder if she is...
     b  I’ll ask what I can...
     c  They know which book did you buy

As in the case of negation, do not allow that L2 learners of English, acquiring questions. Lightbown’s generalization is illustrated in table 4.1.

Stage 3 requires a brief consideration of yes/no questions by placing a question word at the end of the sentence. This can be either a wh-word, a verb-like element (do, is), or a marker than a verb because it is a generalization in its normal declarative position (Lightbown, 1978).

4.8.1 The role of CP in creating a difference between yes/no and wh-questions

Do all languages form yes/no and wh-questions in the same way? The answer to this is no, but the way they form questions is in fact quite...
27a  Is she happy?
    Can I have some?
    Does she know you?

b  She's happy, isn't she?
    I can have some, can't I?
    She knows you, doesn't she?

c  Why is she happy?
    What can I have?
    Which book did you buy?
    How do you do that?

There is also a syntactic difference between questions in main clauses, and ques-
tions in embedded clauses (indirect questions). In embedded clauses, the finite
copula, auxiliary, modal or expletive do do not move to first or second position in
the sentence, but remain in the position they would occupy in ordinary declarative
clauses (do does not appear as an expletive in embedded clauses):

28a  I wonder if she is happy/*I wonder if is she happy

b  I'll ask what I can have/*I'll ask what can I have

c  They know which book you bought/*They know which book
did you buy

As in the case of negation, discussed in section 3.2, it has been known for some
time that L2 learners of English go through systematic stages of development in
acquiring questions. Lightbown and Spada (1993) have proposed the stages illus-
trated in table 4.1.

Stage 3 requires a brief comment. It appears that at this stage learners mark
questions by placing a question word of some kind in front of declarative clauses.
This can be either a wh-word or phrase to produce an information question, or
a verb-like element (do, is), which appears to be used more like a question
marker than a verb because it is often accompanied by the use of another verb
in its normal declarative position: Is he is happy? Do you can go? (Cancino et al.
1978).

4.8.1 The role of CP in question formation, and a parametric
difference between languages

Do all languages form yes/no and wh questions in the way that English does?
The answer to this is no, but the range of ways in which the world's languages
form questions is in fact quite limited. Two of the principal types of question
Table 4.1 Proposed stages in the L2 development of English questions

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rising intonation on words/formulae</td>
<td>Four children?</td>
</tr>
<tr>
<td>2</td>
<td>Rising intonation on clauses</td>
<td>The boys throw the shoes?</td>
</tr>
<tr>
<td>3</td>
<td>A question word is placed at the front of the clause, but often without a copula, auxiliary, etc., moving</td>
<td>Is the picture has two planets on top?</td>
</tr>
<tr>
<td>4</td>
<td>Copula <em>be</em> moves to the front in yes/no questions, and to second position in <em>wh</em>-questions</td>
<td>Where the little children are?</td>
</tr>
<tr>
<td>5</td>
<td>Auxiliaries, modals and <em>do</em> move to the front or to second position</td>
<td>Why is the boy doing?</td>
</tr>
<tr>
<td>6</td>
<td><em>Non-movement of the copula, auxiliaries, etc., in embedded questions is acquired</em></td>
<td>How do you say ‘proche’?</td>
</tr>
<tr>
<td></td>
<td>Question tags are acquired</td>
<td>Can you tell me what the date is today?</td>
</tr>
</tbody>
</table>

*Up to this point L2 learners produce embedded questions with moved copula, auxiliaries, modals, etc.: I wonder what can I have; She asked how do you do that.

Source: Based on Lightbown and Spada 1993: 63 (their examples)

It has been standardly assumed that the similar surface structures in the two languages indicate the same underlying structure, as evidenced by the presence of a question mark and the order of the words. However, the absence of the presence of a question mark and the order of the words may not necessarily indicate the same underlying structure. In some languages, the question word may be in a different position from the subject or predicate, for example, in Chinese. In Chinese, the question word typically appears at the end of the sentence, and the subject or predicate may be in a different position from the question word. This is illustrated by the following examples from Aoun and Li (1993):

30a  
\[
\text{C'} \quad \text{IP} \quad \text{ta lai}
\]

In Chinese, the question word typically appears at the end of the sentence, and the subject or predicate may be in a different position from the question word. This is illustrated by the following examples from Aoun and Li (1993):

30b  
\[
\text{IP} \quad \text{Zhangsan kanda shenme?}
\]

In other languages, the question word may be in a different position from the subject or predicate. For example, in English, although in English, the question word is typically at the end of the sentence, another head to be grammatically realized is the complementizer, which is associated with this association to occur, grammatical phenomena (see section 3.3.3), the following examples:

31a  
\[
[C \text{ is } + \Phi_{Q}] \quad [\text{IP he}]
\]
It has been standardly assumed by linguists (e.g. Huang 1982) that question sentences in the two languages have the same basic underlying structure, but that their surface differences are the result of a parametric difference in the way the underlying structure is realized. Without going into the detail of specific proposals, the spirit of this account is that universally questions are signalled by the presence of a question morpheme, often represented by Q, belonging to the category C. In some languages Q is a free morpheme. This is the case of Chinese. CP in Chinese is head-final (Y. Li 1990), so that Chinese C follows its complement IP, in contrast to English where C precedes its complement IP. In Chinese yes/no questions, Q is realized as the free-form question marker *ma*:

30a

\[ C' \]
\[ \begin{array}{c}
\text{IP} \\
\text{ta lai} \\
\text{ma}_{[Q]} \\
\end{array} \]

In Chinese *wh*-questions, Q is usually null, although the morpheme *ne* can optionally appear in some contexts (see note 5), and additionally a specific constituent in the clause is replaced by a *wh*-phrase: *shenme*, 'what'; *shei*, 'who'; and so on. This suggests that Q is still a free morpheme which has different variants depending on the context: *ma, φ, ne*. A question like (29b) therefore has the underlying structure (30b):

30b

\[ C' \]
\[ \begin{array}{c}
\text{IP} \\
\text{Zhangsan kandao shenme} \\
\end{array} \]

\[ \phi_{[Q]} \]

In other languages Q is a bound morpheme (an inflection). This is the case of English, although in English the bound morpheme which realizes Q is always null. Because Q is an inflection in English, that inflection must be associated with another head to be grammatical. The head in question is I. Since I moves to Q for this association to occur, given our assumptions about strong and weak inflections (see section 3.3.3), the null inflection realizing Q must be strong. So we get surface structures like:

31a

\[ (;c \ni \phi_{[Q]} [\text{IP he t [\text{vp t coming}]})] \]
In the case of \textit{wh}-questions not only is a specific constituent in the clause replaced by a \textit{wh}-phrase, but it also moves to the specifier of CP, unlike Chinese:

\begin{align*}
\text{b} & \quad \text{[CP what, [C is + } \phi_{qi} \text{ [IP he t, [VP t, eating t]]]?}}
\end{align*}

The requirement that a \textit{wh}-phrase move to the specifier of CP is usually assumed to be the effect of an agreement relation: \textit{wh}-phrases in English must appear in a local specifier–head relation in surface structure with a head which is specified for (Rizzi 1996). Rizzi, in fact, proposes that there is a principle of Universal Grammar applicable to all languages that \textit{wh}-phrases appear in a local specifier–head agreement relation with a head specified for \textit{Q} at some point in the derivation of sentences. In English this requirement holds of surface syntax. In Chinese there is a level of interpretation known as Logical Form (Huang 1982, 1995 – we will not be concerned with issues of logical form in SLA in this book). It is this agreement requirement which forces \textit{wh}-phrases to move to the specifier of CP.

Note that in English, free forms located in the category I are the ones which move to C to pick up the question inflection, rather than a verb located in the VP. This means that when the main verb is a thematic verb, which does not raise to I because the inflections of I are weak in English, the expletive verb \textit{do} surfaces in I, and it is this form which moves to C:

\begin{align*}
32a & \quad [\text{IP He -s [VP speak Chinese]}] \rightarrow [\text{IP He t [VP speaks Chinese]}] \\
\text{b} & \quad [\text{C -} \phi_{qi} \text{ [IP He -s [VP speak Chinese]}]] \rightarrow \quad [\text{C Does} - \phi_{qi} \text{ [IP he t [VP speak Chinese]}]]
\end{align*}

Thus expletive \textit{do} surfaces both with sentential negation and with question formation in English:

\begin{align*}
33a & \quad \text{He doesn't speak Chinese} \\
\text{b} & \quad \text{Does he speak Chinese?}
\end{align*}

Consider now the case of embedded questions in English. In embedded questions I does not move to C, although \textit{wh}-phrases still move to the specifier of CP:

\begin{align*}
34 & \quad \text{IP .} \\
\text{NP} & \quad \text{I' } \\
\text{We} & \quad \text{I} \\
\text{agreement} & \quad \text{tense} \\
\rightarrow & \quad \text{V} \\
\rightarrow & \quad \text{wonder} \\
\rightarrow & \quad \text{which }
\end{align*}

There are various possibilities for the following. When verbs like ‘wonder’ take complements, those complements are specifiers:

\begin{align*}
35a & \quad \text{I wonder [CP what ]} \\
\text{b} & \quad \text{I wonder [CP which ]} \\
\text{c} & \quad \ast \text{I wonder [CP that ]}
\end{align*}

We will say that through the general clause as a question, although Q is still present, (in embedded yes/no questions is in the specifier of CP, and)

4.8.2 The L2 acquisition of CP acquisition of CP

Given the 'modulated structural development (stages of development')
There are various possible explanations. The one we will tentatively adopt is the following. When verbs like *wonder* select CP complements, they require that those complements are specified for Q. Compare:

35a  I wonder \[\text{CP which languages she speaks}\]
b  I wonder \[\text{CP whether/if she speaks three languages}\]
c  *I wonder \[\text{CP she speaks three languages}\]

We will say that through this requirement verbs like *wonder* identify the embedded clause as a question, and it is unnecessary to introduce a Q inflection. Thus, although Q is still present, it is now realized as a free morpheme in the form of *if* (in embedded yes/no questions) or *\(\phi\)* (in embedded yes/no questions where *whether* is in the specifier of CP, and in all embedded *wh*-questions).

### 4.8.2 The L2 acquisition of English questions as the acquisition of CP

Given the ‘modulated structure building’ perspective I have adopted on L2 development (stages of development are the result of learners building grammatical
representations for the L2) how might we relate the stages of development proposed by Lightbown and Spada (1993) to the acquisition of CP? One possibility is that the first two stages, where learners use rising intonation, are stages without a CP projection. Recall that in the case of the acquisition of English declarative clauses it was argued that learners initially start with lexical projections but without IP (see chapter 2). Perhaps the acquisition of questions begins as a stage without CP, where learners simply add rising intonation to lexical projections like VP, NegP, and then later IP. This is, of course, speculative, and it is not clear whether there is currently any evidence which would confirm or disconfirm the proposal. It would require making the claim that L2 learners are sensitive to the intonational properties of English questions before they are sensitive to their structural properties. On the other hand, initial absence of the CP in questions is compatible with the analysis of German word order discussed in this chapter: L2 learners of German appear to start grammar-building without a CP layer of structure.

If CP is initially absent, the trigger for its establishment in questions might be the recognition by learners that in the English input they receive, questions are marked by a question word located in front of IP: a form like is, do or a wh-phrase. If, by Universal Grammar, C always selects IP as its complement, and if L2 learners have access to Universal Grammar, then recognition of question markers appearing in front of IP will lead them automatically to locate these markers under C, or somewhere in its projection CP. In the case of yes/no questions, it seems initially that learners treat forms like is, do as if they were like the question marker ma of Chinese; that is, is, do are free Q morphemes, and there is no movement of I to C to pick up a bound Q morpheme. Thus at Lightbown and Spada's stage 3, is, do duplicate an auxiliary verb in I:

![Diagram of C and IP structures]

In the case of wh-phrases, if learners know from Universal Grammar that wh-phrases must appear in a local specifier-head agreement relation with a head with the specification Q at some point in the derivation of sentences, then once they recognize that wh-phrases are located in front of IP in English, by Universal Grammar they will automatically project a CP, and place the wh-phrase in its specifier position:

The fact that Q is realized as free forms rather than inflected free forms rather than inflected Ing up to now, functional Q being realized as a structure at this stage as a free morpheme means that there is some kind of development which requires a bound morpheme. This would remain silent, since a wh-phrase appears to remain silent.

If this is the appropriate form of Q, we might ask why learners don't use free forms rather than inflected forms up to now, functional Q being realized as a free question morpheme rather than a bound morpheme that is established, and initial over extended and overt markers to signal this form.

In stages 4 and 5 learners start acquiring the inflectional marking and the movement of expletives (if involved). This would follow from acquiring the inflectional marking of Q null and the fact that it is not like is, do cease to copy a Q as it start occurring with copulas, as Q.

The overgeneralization of an is then be explained as the case of a lack of CP contexts. It appears that Q like wonder cancel the imperative.
The fact that Q is realized at this stage in L2 English as a free morpheme might explain why wh-questions are not accompanied by movement of I to C. Movement of I to C in native English, it was argued in section 4.8.1, is the effect of Q being realized as a strong bound morpheme. If L2 learners are realizing Q at this stage as a free morpheme, there is no reason to move I to C. And it may be that there is some kind of principle of economy of representation operating in development which requires that features like Q be marked only by one overt morpheme. This would require a form to appear under C in yes/no questions, but since a wh-phrase appears in the specifier of CP in wh-questions, the head C can remain silent.

If this is the appropriate characterization of Lightbown and Spada's stage 3, we might ask why learners initially assume that the question morphemes in C are free forms rather than inflections. This might follow if, as we have been proposing up to now, functional projections like CP are initially minimally specified; a free question morpheme realizing C and selecting an IP complement requires less grammatical machinery than moving I to C. Note that this account is compatible with 'modulated structure building'. Here a CP layer of structure is built once IP is established, and initially it is an underspecified position which simply hosts overt markers to signal that the sentence is a question.

In stages 4 and 5 learners acquire the fact that verbs in I move to C (including the movement of expletive do, inserted under I when thematic verbs are involved). This would follow if at this point they start to refine their analysis for C, acquiring the inflectional status of the morpheme realizing Q, the fact that it is null and the fact that it is a 'strong' morpheme. We would then expect that forms like is, do cease to copy a verb already in I, and at the same time that wh-phrases start occurring with copula be, auxiliaries, modals and do in second position. The overgeneralization of the movement of I to C in embedded questions might then be explained as the overgeneralization of the inflectional status of Q to all CP contexts. It appears that it takes learners longer to acquire the fact that verbs like wonder cancel the inflectional status of the Q of CPs which they select as complements.