A number of recent studies have focused on the question of the availability of Universal Grammar (UG) to the adult second-language (L2) learner. Some of these studies have considered developmental phenomena, and their authors have often come to opposite conclusions with regard to the acquisition of grammatical competence. For instance, Clahsen and Muysken (1986) argue that learners utilize only general processing strategies in their acquisition of an L2 while duPlessis, Solin, Travis & White (1987) insist that UG constrains L2 as well as L1 learning. Other studies have utilized grammaticality judgments by adult speakers of an L2 as a basis for analysis. Felix (1988) and Bley-Vroman, Felix & Ioup (1988) suggest—in one way or another—that UG may indeed constrain L2 grammars. In contrast, Jacquelyn Schachter’s “Testing a Proposed Universal” (in press) appears to suggest the opposite, namely, that UG is no longer accessible to the adult, non-native speaker. What will be argued in this paper, however, is that Schachter’s results, seen from the perspective of somewhat more recent linguistic theory, may be amenable to an interpretation that is consistent with adult access to UG.

The discussion will begin with a short review of Schachter’s study, which focuses especially on a principle of UG known as subjacency. The results of Schachter’s study do not indicate that subjacency is available to adult non-native speakers: Her subjects judged as grammatical a good number of sentences that appear to violate the principle of subjacency. What is of more interest is that Schachter’s native-speaking controls also appear not to have access to subjacency on some test sentences, for they also judged as grammatical certain sentences that violate subjacency. The remainder of the paper is concerned with explaining the judgments of Schachter’s native-

1 I wish to extend thanks to Robert Bley-Vroman, Yutaka Sato, Maria Beck, and Kevin Gregg for their helpful comments and suggestions. As usual, any errors are to be attributed to me alone.
speaking controls and, proceeding cautiously, those of her Korean-speaking subjects. First, we examine the principle of subjacency itself. The discussion will focus on the “barriers” reformulation of Chomsky 1986. Of particular relevance here are the types of variation that might be expected under the reformulation—both between individual speakers and between languages. After reviewing the reformulation of subjacency, we return to the judgments of Schachter’s Korean-speaking subjects and her English-speaking controls. Here we show that an alternative explanation can be provided, one which does not suggest the unavailability of UG.

"TESTING A PROPOSED UNIVERSAL"

As noted above, Schachter (in press) focuses on the principle of subjacency. The formulation of subjacency that she uses is the more or less “classical” version of Government and Binding (GB) theory (Chomsky 1981), viz., that no syntactic process can involve positions separated by the bounding nodes NP and S in English. Hence, WH-extraction in (1) is allowed since only the S-node separates the WH-word from its trace, while WH-extraction in (2) leads to ungrammaticality since in this case the WH-word is separated from its trace by the bounding nodes NP and S.

1. What did [S Maria have t1 ]
2.*What did [S he have [NP [NP a car ] and t1 ] ]

Schachter writes that subjacency is instantiated cross-linguistically in different ways. In English the principle applies to a variety of extracted elements (e.g., WH-words, relative pronouns) and domains of extraction (e.g., relative clauses, embedded questions). At the opposite extreme, Korean has no WH-extraction of questions in the syntax; hence, subjacency would not be instantiated in Korean. Lying between languages like English and Korean are

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2 Subjacency is assumed to apply only at the level of S-structure, thereby checking syntactic representations rather than those at LF. In addition, the “classical” version of subjacency has an associated parameter dealing with the choice between S and S’ as bounding nodes. See van Riemsdijk & Williams 1986 for a general discussion of subjacency and Rizzi 1982 for discussion of parametric variation. In this study, no stand is taken on the issue of subjacency as a condition on S-structure representations as opposed to a constraint on syntactic movement; see Fanselow & Felix 1987 for an outline of the problem.
variations. Chinese, for instance, does not have WH-extraction, but it does have the extraction of relative pronouns. Indonesian has WH-extraction, but any such extracted element must first be promoted to the subject position of its own clause. In both of these languages, therefore, subjacency would be instantiated for more elements and domains than in Korean, but for fewer elements and domains than in English. In short, then, subjacency is instantiated by different languages in different ways.\textsuperscript{3}

With this linguistic backdrop, Schachter sets up her experimental framework. The study examines adults whose native languages (NL) instantiate subjacency in only a limited fashion (Chinese, Indonesian) or not at all (Korean) speaking an L2 that instantiates subjacency across a relatively wide range of elements and domains (English). Schachter discerns two basic positions with regard to how these non-natives might judge subjacency violations in English.\textsuperscript{4} According to one position, which Schachter attributes to White (in press) and Flynn (in press), non-native speakers of L2-English have access to subjacency across the full range of its applicability, regardless of the fact that it may be instantiated for fewer domains or elements in the NL. Thus, the subjects she examines should, if this position is correct, be able to detect violations of subjacency in English even when no comparable element or domain exists in their NLs. The NL-Korean speakers, for instance, should be able to detect the ungrammaticality of (2) above. According to the opposing position, which she ascribes to herself as well as to Bley-Vroman (in press), adult, non-native speakers’ access to subjacency effects in L2-English will be limited to those elements or domains instantiated in the NL. Hence, she would predict that her subjects should not be able to detect violations of subjacency in sentences that have no counterpart in the NL. The NL-Korean speakers, for example, would be predicted not to recognize the ungrammaticality of (2) above since subjacency is not instantiated in Korean.

To test between these two positions, Schachter elicited grammaticality

\textsuperscript{3} In fact, it has been argued that subjacency applies to Japanese, a language with certain parallels to Korean. Saito (1985), for instance, argues that the scrambling rule applies in the syntax to reorder constituents and that this reordering is constrained by subjacency.

\textsuperscript{4} Schachter actually includes a third position, that of Krashen (e.g., 1981), whose position is (apparently) that UG functions for L2 learning in precisely the same way it functions for L1 learning. However, Schachter collapses this position with that of White (see below), the logic being that both positions assume the availability of UG.
judgments on 48 sentences from 61 adult, non-native speakers of English. The subjects were all fully matriculated students at the University of Southern California and included 20 Chinese, 21 Koreans, and 20 Indonesians. The experiment also included 19 native-speaking controls, also students at USC. The 48 test sentences consisted of 24 declaratives and 24 WH-questions, the latter all violations of subjacency. The 24 declaratives consisted of four groups of six sentences with sentential subjects as in (3a) below, relative clauses (4a), noun-phrase complements (5a), and embedded questions (6a), respectively. The 24 subjacency violations (WH-questions) were divided into the same four groups, as shown in (3b), (4b), (5b), and (6b).

3a. [That oil prices will rise again this year] is certain.
3b. *Which party did [for Sam to join t] shock his parents?
4a. The theory [we discussed yesterday] will be on the exam.
4b. *What did Susan visit the store [that had t in stock]?
5a. There is a good possibility [that we can obtain the information elsewhere].
5b. *Who did the police have evidence [that the mayor murdered t]?
6a. The manager asked me [who I wanted to have as a roommate].
6b. *Who did the Senator ask the President [where he would send t]?

Schachter’s purpose in having subjects judge the 24 grammatical declaratives was to test whether or not they knew the four constructions. The results of these judgments Schachter calls the Syntax test. The purpose of the 24 ungrammatical WH-extractions was to test their sensitivity to the principle of subjacency. The results here are called the Subjacency test.

The experimental hypothesis tested in the study is as follows:

5 Robert Bley-Vroman (personal communication) has correctly pointed out that Schachter’s methodology does not control for the subjects’ knowledge of correct WH-movement. Certainly, such an uncontrolled variable has the capacity to compromise Schachter’s results, making the analysis given in the latter part of this discussion superfluous. We will assume for the present discussion, however, that the judgments given by Schachter’s subjects do have something to say about Universal Grammar.

6 In the following, labeled brackets will be utilized to indicate necessary syntactic structure. Traces left behind by extracted WH-phrases are indicated by t, and ungrammatical sentences are preceded with an asterisk. The test sentences that Schachter provided for subjects to judge did not, of course, include such markings.
For each construction in question, subjects who pass the test for that construction (the Syntax tests) will exhibit evidence of Subjacency in their judgments of WH-movement out of that construction (the Subjacency tests). (p. 13)

In other words, knowing the constructions in question implies also knowing that WH-elements cannot be extracted from the constructions. A corollary to the hypothesis is as follows:

For each construction in question, subjects who fail the Syntax test will also fail the Subjacency test. (p. 13)

Thus, if a person does not know, for instance, English embedded questions (declaratives), then the person will also not know that extracting WH-elements from embedded questions is impossible. The criterion for passing either the Syntax test or the Subjacency test is to judge five of the six sentences correctly. Hence, a subject who judges five of the six WH-extractions from sentences with sentential subjects as "ungrammatical" passes the Subjacency test for that group of sentences.

From the experimental hypothesis and its corollary, Schachter sets up a series of two-by-two contingency tables to display the combined results from the three non-native samples and from the controls on each of the four extraction domains (sentential subjects, relative clauses, noun-phrase complements, and embedded questions). Each contingency table has the following form:

<table>
<thead>
<tr>
<th>Syntax Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pass</td>
<td>fail</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subjacency Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>pass A</td>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Test</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>fail C</td>
<td>D</td>
</tr>
</tbody>
</table>

Subjects passing both the Syntax test and the Subjacency test fall in cell A and confirm the main hypothesis, while subjects failing both tests fall in cell D and confirm the corollary hypothesis. Subjects who pass the Syntax test but
fail the Subjacency test cluster in cell C and thus disconfirm both hypotheses. Likewise, subjects who fail the Syntax test but pass the Subjacency test fall in cell B and also disconfirm both hypotheses.

While the cells in the contingency table can be used to test Schachter’s hypotheses, all four of these cells are not relevant to discriminate between the two positions on the availability of UG to adults. Certainly, if subjects pass both tests (cell A) and thus confirm the first hypothesis, one could conclude that L2 learners may have access to UG. A cell-D confirmation of the corollary hypothesis occurring if subjects fail both tests, however, would not decide between the two positions on the availability of UG to L2 learners since subjects in this cell may not have learned enough to interpret the test sentences correctly. In contrast, a cell-C disconfirmation of both hypotheses occurring if subjects pass the Syntax test but fail the Subjacency test would suggest L2 learners do not have access to UG. On the other hand, a cell-B disconfirmation of both hypotheses occurring if subjects pass the Subjacency test but fail the Syntax test would, for the same reason given for cell D, not decide between the two positions on the availability of UG to the L2 learner. Thus, while all four cells are relevant for the purpose of confirming or refuting Schachter’s hypotheses, only cells A and C provide the kind of results needed to test for the availability of UG to adults.

<table>
<thead>
<tr>
<th>SS</th>
<th>RC</th>
<th>NC</th>
<th>EQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syntax Test</td>
<td>Syntax Test</td>
<td>Syntax Test</td>
<td>Syntax Test</td>
</tr>
<tr>
<td>$p$</td>
<td>$f$</td>
<td>$p$</td>
<td>$f$</td>
</tr>
<tr>
<td><strong>Subjacency Test</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$p$</td>
<td>15</td>
<td>3</td>
<td>17</td>
</tr>
<tr>
<td>$f$</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

*Table 1: Native results*
The grammaticality judgments from the native-speaking controls are found in Table 1, and those of the three non-native samples are found in Table 2. The general tendency in the two tables is that the judgments of the native speakers cluster in cell A while a large number of judgments by the non-natives cluster in cell C. These judgments make it difficult to maintain that UG is available to non-native speakers. On the other hand, cells A and C of Table 1 also show that seven of the 17 controls judged WH-extraction from noun-phrase complements as grammatical, certainly an unimpressive result if UG is supposed to constrain the grammatical intuitions of native speakers. Schachter, however, points to an explanation of this result, "... Chomsky (1986) has argued that extractions of the type I am testing [i.e., noun-phrase complements] are ... grammatical" (p. 19, n. 6), but the matter is not pursued any further. In the following section, it is.
REDEFINING THE FRAMEWORK

As stated above, Schachter utilizes the “classical” version of subjacency, which prohibits syntactic processes from involving positions separated by the bounding nodes NP and S/S’ (see note 1). This formulation correctly predicts the grammaticality of (1) and the ungrammaticality of (2). The problem is that this formulation also makes incorrect predictions. Consider (7), which, like (2), involves WH-extraction from an NP.

7. Who$_i$ did [$_S$ she see [NP a picture of $t_i$]]?

In (7), the WH-word is associated with its trace over the bounding nodes S and NP and is thus predicted counterfactually to be ungrammatical.

This and similar problems with the account of the GB theory in Chomsky 1981 led to the refinements and reformulations in Chomsky 1986, in which subjacency is defined as a derivative of more primitive terms. Hence, in order to understand the revision of subjacency, one must understand its primitives: L-marking, Blocking Category, and barrier.

Barriers and Subjacency

Perhaps the most significant characteristic of the theory outlined in Chomsky 1986 is its reliance on thematic properties projected from the lexicon. This reliance can be seen in the concept of L(exical)-marking, which is formally defined in (8) (taken for expository purposes from Fanselow and Felix 1987).

8. L-marking

\[ \alpha \text{ L-marks } \beta \text{ iff} \]

(a) $\alpha$ and $\beta$ are sisters,
(b) $\alpha$ is a lexical category, and
(c) $\alpha$ assigns a $\theta$-role to $\beta$.

In other words, if, say, an NP is a sister to V, and if V assigns a $\theta$-role to that NP, then that NP is said to be L-marked. The inverse of an L-marked projection, that is, a projection that is not L-marked, then enters (with minor modifications) into the concept of Blocking Category (BC) defined in (9).
9. Blocking Category (BC)
\[ \alpha \text{ is a BC for } \beta \text{ iff } \]
(a) \( \alpha \) is a maximal projection
(b) \( \alpha \) includes \( \beta \)
(c) \( \alpha \) is not L-marked.

With Blocking Category, we have the revised equivalent of the older bounding nodes. The difference is that the bounding nodes defined in the older version of subjacency are limited absolutely to NP and S/S' whereas a BC may vary, depending on the \( \theta \)-marking requirements of particular lexical entries.

The Blocking Category then enters into the definition of a barrier in (10).

10. Barrier

A maximal projection \( \Sigma \) is a barrier for \( \alpha \) iff
(a) \( \Sigma \) is a BC for \( \alpha \), for \( \Sigma \neq \text{IP} \)

or

(b) \( \Sigma \) immediately dominates \( \beta \) and \( \beta \) is a BC for \( \alpha \).

Stated simply, then, a maximal projection is a barrier either because it is a BC for some particular category or because it immediately dominates a BC for that category. The only exception is that IP (the equivalent of the S-node) is not a barrier through (10a), but it can become a barrier by means of inheritance through (10b).

Subjacency is then redefined with reference to the number of barriers involved. The revised definition is in (11).

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7 The term "inclusion" Chomsky (1986) picks up from May's (1985) discussion of Logical Form. The defining feature is that adjoined structures are assumed to be composed of "segments." Hence, the category \( \alpha \) in (i) is dominated by only one of the two segments \( \beta \) whereas the category \( y \) is dominated by both segments \( \beta \).

i. \([\beta \alpha[\beta y]]\)

In such a structure, \( \beta \) is said to "include" \( y \) but not \( \alpha \) since \( y \) is dominated by both segments \( \beta \), but \( \alpha \) is not.
11. Subjacency

Two elements in a chain \(<\alpha \ldots \beta>\) are \(n\)-subjacent if exactly \(n\) barriers lie between them.

By definition (11), then, if no barriers exist between two elements, then the two elements are 0-subjacent. If one barrier intervenes between them, then they are 1-subjacent. If two elements are either 0-subjacent or 1-subjacent in English, then ungrammaticality does not result. If there are two barriers between elements in a chain, then the two elements are 2-subjacent, and in English 2-subjacency results in ungrammaticality.

Variation

With these definitions, a certain amount of variation is allowed, both between individual speakers of particular languages and between languages. One type of variation, as we shall see, evolves from a parameter suggested by Chomsky (1986) on what constitutes a barrier in particular languages. Three other types of variation are induced through a systematic interaction of the definitions above with other factors. All four types of variation will be of value to the reinterpretation of Schachter’s findings.

The “extra barrier” parameter

As shown in (9) and (10) above, IP may be a BC, but—except through inheritance—it cannot be a barrier. This formulation, however, appears not to deal properly with English, for it predicts the grammaticality of sentences such as (12).

12. *Who did the police wonder [\(_{CP} \_{who} [\_{IP} \_{t} \text{ saw } \_{t}]]\]

In order for who\(_j\) to occur at the left, it must associate with its trace (\(_t\)) across the two nodes CP and IP, but no barriers are involved because CP is L-marked by wonder and IP is excluded as a possible barrier by the definition (10a). From the perspective of subjacency, therefore, (12) should be grammatical. However, Chomsky (1986) assumes that the status of IP as a barrier is a parameter by which the most deeply embedded, tensed IP may be selected as an inherent “extra barrier.”\(^8\) In other words, (12) is ungrammatical because the
embedded IP is a barrier (the "extra barrier") which then transmits barrierhood to the CP. From the perspective of Universal Grammar, then, the default on Chomsky's "extra barrier" parameter is that IP is not a barrier except through inheritance. Variation might be expected, though, in that particular languages (e.g., English) may select IP in the most deeply embedded clause as an inherent "extra barrier." This idea leads to an intriguing possibility for L2 acquisition, namely, that the NL of the non-native speaker does not select IP as an "extra barrier" and that this NL setting is imposed on the grammar of English.

**Theta-role assignment by nouns**

While the first type of variation concerns a parameter on IP as an "extra barrier," the second type deals with thematic properties of the lexicon, which are projected into the syntax via the Extended Projection Principle (Chomsky 1982). A transitive verb, for instance, assigns a \( \theta \)-role to its NP-object, and it is for this reason that the NP-object (or its trace) must appear at D-structure and at S-structure. In the "barriers" framework, since the NP-object is \( \theta \)-marked by a lexical sister, it is L-marked and therefore not a BC.

While most introductory texts (e.g., Van Riemsdijk & Williams 1986, Fanselow & Felix 1987) deal principally with \( \theta \)-roles assigned by verbs, the fact is that nouns may also assign \( \theta \)-roles. In factive constructions such as (13), for instance, the noun *evidence* is assumed to assign a \( \theta \)-role to the complement that follows it.

13. They have \([\text{NP evidence} [\text{CP that he shot Harry}]])

Because the CP in (13) is assigned a \( \theta \)-role, it is L-marked and therefore not a BC. Thus, by the definition in (10), the CP in (13) is not a barrier, and it cannot transmit barrierhood to the NP. Likewise, the NP is L-marked and therefore not a BC. Thus, under the assumption that *evidence* assigns a \( \theta \)-role to the CP, neither the NP nor the CP in (12) constitutes a barrier. The sentence (14)

8 In fact, the distinction tense vs. infinitive may be the incorrect feature. Chomsky (1986) suggests that the crucial feature may turn out to involve the distinction indicative vs. infinitive-subjunctive or some factor involving non-realized subjects. In addition, following Rizzi's (1982) work on \( S' \) as a bounding node in Italian, Chomsky suggests that the "extra barrier" parameter might also extend to tensed CP as well.
illustrates WH-extraction from such a construction.

14. Who do they have \([\text{NP evidence [CP that he shot } t_i ]]\)

The crucial nodes for WH-extraction in (14) are NP and CP, which, as shown above, are not barriers. Therefore, (14) does not violate subjacency and is predicted to be grammatical.9

According to Stowell (1981), however, not all factives necessarily assign \(\theta\)-roles; rather, what appear to be NP complements bearing \(\theta\)-roles may be appositives, to which no \(\theta\)-roles are assigned. Such may be the case in (15).

15. He heard \([\text{NP a rumor [CP that she's taking linguistics] } ]\)

If Stowell is correct in assuming that the CP in (15) is an appositive, then rumor does not assign a \(\theta\)-role to the CP. The CP, not being L-marked (no \(\theta\)-role), is a BC and therefore also a barrier that can transmit barrierhood to the NP. As shown in (16), such a situation would result in ungrammaticality if WH-extraction occurs.

16. *What did he hear \([\text{NP a rumor [CP that she's taking } t_i ]]\)\]

Since both NP and CP are barriers, a subjacency violation occurs when the WH-element is extracted.

The second type of variation one might expect to find, then, is associated with the lexicon, specifically, with how individual speakers may encode the thematic requirements of particular nominal forms. While one expects to find widespread agreement, in the case of nouns such as evidence, idea, news, or fact, it may also be the case that any two speakers have different lexical specifications since the same noun may or not assign a \(\theta\)-role. Hence, WH-extraction from noun-phrase complements preceded by such lexical entries may appear to be ungrammatical to some speakers, but grammatical to others. As we shall see, this sort of variation may be of value in re-interpreting the

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9 Chomsky (1986) does suggest that one barrier may be involved in sentences like (14), thereby accounting for the somewhat lowered acceptibility. However, that analysis does not result in a subjacency violation.
judgments of Schachter's native controls and non-native subjects.

Vacuous movement

The third type of variation one might expect to find with respect to subjacency concerns languages without syntactic WH-extraction, such as Korean. (This is the type of variation that Schachter pinpoints as well.) What makes such languages interesting for Schachter as well as for the present discussion is that with in-situ WH-phrases at S-structure, subjacency is not instantiated. Hence, in contrast to the source of variation identified above, which may yield intuitions of grammaticality that differ from speaker to speaker, the second source of variation concerns differences between languages that instantiate subjacency (e.g., English) and those that do not (e.g., Korean). This type of variation will also be of value in the attempt to re-interpret Schachter's results since it is possible to analyze certain instances of WH-extraction in English as non-extraction, i.e., as in-situ WH-phrases.

Configurationality

The fourth type of variation one might expect derives from the interaction of the definition of L-marking (a primitive of the "barriers" framework) with the phrase-hierarchical nature of different languages. English, for instance, is a rigidly SVO language, its underlying phrasal nature being defined by the configuration of X-bar theory. Hence, the NP-subject and the NP-object are not immediately dominated by one and the same maximal projection. Simplifying somewhat, one can represent the structure of English as in (17) such that the NP-subject and the VP are daughters of S.

17. \[ \text{[S NP [VP V NP]]} \]

With respect to L-marking, the NP-subject is a sister of the VP and therefore not assigned a \( \theta \)-role by a lexical sister.

Not all languages pattern after the English-type, however. Languages such as Japanese or Korean have, among other things, much more latitude in word order. Korean, for instance, allows not only SVO, but also SOV, OSV, and OVS. Clearly, it is not easy to see how such languages could be generated with the configuration of X-bar theory. In fact, it is sometimes assumed that the basic underlying configuration of such languages is much "flatter" than that of
the English-like variety (Kim 1976; Hale 1982; Farmer 1984; Whitman 1987; cf. Saito 1985). If this idea is correct, then one might illustrate the underlying nature of a "non-configurational" language like Korean as in (18).

18. [s NP NP V ]

What is interesting about (18) is that it has no VP and that both the NP-subject and the NP-object are sisters of the verb. 10

On the assumption that this (simplified) characterization is correct, one can make an interesting prediction with regard to L-marking and barriers. If a language conforms to X-bar theory, then the NP-subject is not L-marked; therefore, the NP node may serve as a barrier to WH-extraction. In contrast, if a language is non-configurational, then the NP-subject is L-marked by the verb; hence, the NP node (of the subject) does not serve as a barrier except through inheritance. Now, with regard to second languages, suppose that a non-native speaker whose NL is non-configurational learns a language that is configurational. Suppose further that this speaker imposes the non-configurational structure of the NL onto the second language. In this case, one might imagine that the NP will be a barrier to WH-extraction for the native speaker, but not for the non-native. As we shall see, this idea will enter directly into the reinterpretation of the NL-Korean judgments.

In summary, the conceptual framework underlying subjacency has undergone considerable revision with the "barriers" framework, making it sensitive to the primitives of L-marking and Blocking Categories. Like the version it replaced, the new version has an associated parameter, but the parameter in question deals not with the choice between S and S' as a bounding node, but with adding an "extra barrier" (English: IP in the most deeply embedded clause). In addition, given the sensitivity of the theory to θ-marking properties in the lexicon, one expects to find differing intuitions of grammaticality if speakers have lexical entries with different θ-marking requirements. Like the older version of subjacency, the new version is sensitive to the presence or absence of the CP node (= S'), but unlike the older version, the new one may function differently if subject NPs and object NPs are both

10 While characteristics such as variable word order are common in the so-called non-configurational languages, the relevant factor for defining these languages in terms of linguistic theory is actually whether or not they have a VP. See Hale (1982) for this point.
daughters of S. All of these characteristics will be of value in the following section, where we reanalyze the judgments of Schachter's subjects and controls.

A NEW LOOK

In this section we re-examine the judgments of Schachter's controls and NL-Korean subjects from the perspective of the "barriers" framework. The discussion considers, in turn, each of the four domains of extraction that Schachter includes, and the examples given correspond to the sentences in Schachter's Subjacency test.

Noun-phrase complements

Tables 1 and 2 indicate that detecting the apparent ungrammaticality of WH-extraction from noun-phrase complements is difficult for both the native-speaking controls and the NL-Korean subjects. From the analysis of variation presented above, however, such difficulty is expected. In the "barriers" analysis, noun-phrase complements are predicted not to be violations of subjacency. As shown in (14) above, because the noun head assigns a $\theta$-role to the complement, no two barriers intervene between the trace and the WH-word. By contrast, if Stowell's (1981) idea is correct, then the clause following a noun may not be a complement at all, but rather an appositive, to which no $\theta$-role is assigned; in this case, WH-extraction involves two barriers and is ungrammatical. Note that these two ideas are not competing interpretations of the same sentences, one predicting that all native speakers will find such sentences grammatical or ungrammatical; rather, they represent ways that native speakers may differ from one another, some finding such sentences grammatical, and others not. In this light, it also seems possible to assume that some of Schachter's subjects assign $\theta$-roles to the "complements" in the test sentences, and others do not. Far from showing that both the natives and the non-natives are violating subjacency, this interpretation would suggest that both intuitions—judgments of grammatical as well as ungrammatical—are within the limits of Universal Grammar.
Relative clauses

Tables 1 and 2 indicate that the native controls do not have difficulty in judging the ungrammaticality of WH-extraction from relative clauses, whereas the NL-Korean subjects do. Here again, however, the possibilities for variation discussed above provide for an alternative explanation.

The standard analysis of relative clauses (for native speakers of English) is shown in (19).

19. *What \textsubscript{1} did she \textsubscript{VP} \textsubscript{1} [VP see \textsubscript{NP} \textsubscript{a man \textsubscript{CP who} \textsubscript{IP} \textsubscript{t} \textsubscript{j} had \textsubscript{t} \textsubscript{j}]]

The crucial nodes for WH-extraction in (19) are IP, CP, and NP. CP and NP are both barriers by the definition (10) while IP is a barrier through the "extra barrier" parameter exploited in English. The ungrammaticality of the sentence is predicted for native speakers. Note, however, that the extracted WH-word who\textsubscript{j} is located directly adjacent to its trace t\textsubscript{j}. This configuration is important because it is just possible for a learner to assume that no movement has taken place at all, i.e., that the WH-word remains in situ.

For L1 learners of English, Chomsky (1986) assumes that the adjacency of the WH-word to its trace will not lead to the assumption of vacuous movement, because such an assumption would represent a marked option, given that other elements do "move" in English. For L2 learners of English whose NLs do not have syntactic WH-extraction, however, one might make the opposite claim, namely, that they assume syntactic WH-extraction to be the marked option. If this idea has any merit, then it also seems plausible to assume that L2 learners whose NLs exhibit vacuous WH-movement might represent a sentence like (19) as (20).

20. What \textsubscript{1} did she \textsubscript{VP} \textsubscript{1} [VP see \textsubscript{NP} \textsubscript{a man \textsubscript{CP \textsubscript{IP} \textsubscript{t} \textsubscript{j} who had \textsubscript{t} \textsubscript{j}]]]

The crucial difference between (19) and (20) is that the latter has nothing in the specifier position of the embedded CP. Yet (20) may also not be a correct representation of what these L2 speakers have in mind, for there is no reason to believe that the embedded CP node must be generated in the first place: The clause is not assigned a $\theta$–role and thus does not enter into the $\theta$–grid which would require the presence of the CP node. In other words, rather than (20),
they may have something closer to (21).  

21. What \( t_i \) did she [[VP, \( t_i \) [[VP see [NP a man]]]]]]

What we have here, then, is a radically altered view of what relative clauses may look like.

For native speakers, however, (21) would still be ungrammatical since the IP, while not a barrier through the definition (10), would nevertheless become a barrier through the special "extra barrier" parameter that Chomsky has in mind. Thus, IP is a barrier and NP inherits barrierhood from it. The result is a subjacency violation. On the other hand, given that the status of IP as an "extra barrier" is a parameterized option, it is also possible that the L2 learner simply does not have the parameter set correctly. By this interpretation, the IP in (21) would not be a barrier, and the NP would thus not inherit barrierhood. In other words, it is possible to maintain that (21) may be grammatical in the view of such non-native speakers.

This interpretation obtains for only one of the six sentences with extraction from relative clauses in Schachter's experiment, however. While in all six relative clauses the NP-subject and the NP-object are, respectively, the relativized WH-phrase and the offending WH-phrase, the fact is that in five of these sentences, no WH-relative is present in the embedded CP, as in (22).

22. *What \( t_i \) did Susan visit [[NP the store]] [[CP that [[IP had \( t_i \) in stock]]]]

The standard understanding of sentences such as (22) is that the word \( that \) is not a relative pronoun, but the complementizer; the WH-relative is assumed either to consist of a WH-moved empty operator or to delete under recoverability. With the empty operator analysis, for instance, the sentence (22) would actually look something more like (23).

11 There are two potential problems with this analysis, however. One is that the object in (20) might be required by the Strict Cycle Condition to make a stop in the specifier position of the lower clause, then CP would have to be generated. However, other work (e.g., Freidin 1978; Lasnik & Saito 1984) has suggested that the Strict Cycle Condition is unnecessary and should be dropped. The other problem is that the analysis assumed here leads as well to the superiority effect, in which a moved object WH-phrase appears to the left of a moved subject WH-phrase. However, while the superiority effects occur in some varieties of English, it does not occur in all languages; German, for instance, allows such configurations.
23. *What did Susan visit [NP the store] 
   [CP Oj [C' that [IP t had t in stock]]]

The ungrammaticality of (22) and (23) follows in the same way as it does for (19): The embedded CP, not receiving a θ-role from store, is a barrier that transmits barrierhood to the NP, and the embedded IP is a barrier due to the "extra barrier" parameter.

In the case of sentences like (19), then, it may seem plausible to assume that the Korean speakers of English analyze the WH-relative as an in-situ phrase, but the same analysis would, at first blush, not appear likely for a sentence like (23) since the origin of the embedded NP-subject (t in IP) is not adjacent to its landing site (Oj in CP). On this view, it should be impossible for the speakers of Korean to believe that sentences like (23) are grammatical if they have access to UG. On the other hand, given that many L2 teaching texts explicitly treat that as a relative pronoun along with who(m) and which, one wonders if it may be possible that L2 learners may, for some time anyway, believe that in sentences like (23) to be not the complementizer, but a WH-relative.12

If the idea of treating that as a WH-relative is possible, then that in (23) would be adjacent to its origin, and, following the same line of reasoning developed for (19), one could posit for the speakers of Korean that that could remain as an in-situ representation of the NP-subject of the relative clause. In

12 Radford (1988) lists the arguments for assuming that that is a complementizer rather than a WH-NP. However, if these learners do incorrectly categorize that as a WH-NP, then re-categorizing may not be as easy as Radford’s list would suggest. Some of the evidence to re-categorize that would, for instance, involve access to negative evidence. Thus, while the more common WH-relatives may occur as complements of prepositions, that cannot, as shown by Radford with (i) and (ii).

i. the book [pp about which] they were arguing
ii.*the book [pp about that] they were arguing

Now, on the assumption that L2 learners cannot utilize such evidence, the difference between (i) and (ii) would not be of any use to them. On the other hand, evidence to re-categorize that as a complementizer may, for instance, be available through a comparison of that in tensed relatives to for in infinitival relatives.
other words, (23) would have a representation like (24) for these speakers.

24. What did Susan visit [NP the store [IP that had t in stock]]

And on the assumption that IP is not a barrier for these speakers, (24) should appear to be perfectly grammatical. More generally, if the views of relative clauses presented in this section are correct, then one would expect only those NL-Korean subjects in Schachter's study who reject vacuous WH-movement for English and succeed in setting Chomsky's "extra barrier" parameter to judge WH-extraction from relative clauses as ungrammatical.

**WH-islands**

As indicated by tables 1 and 2, the native-speaking controls easily identified the ungrammaticality of WH-extraction from WH-islands, but the NL-Korean subjects did not. These judgments also receive an explanation based on the possibilities allowed by Universal Grammar.

Sentences (25) and (26) represent the standard analysis of WH-extraction from WH-islands for native speakers.

25. *Who did the police wonder [CP who [IP t saw t]]

26. *Who did he ask her [CP where [IP he would send t t]]

In (25) and (26), the CPs are L-marked by the matrix verbs wonder and ask, hence not inherent barriers; however, the embedded IPs are barriers through the "extra barrier" parameter, and they transmit barrierhood to the CPs. Hence, two barriers are involved in each sentence. However, in the case of the Korean speakers of English, one might again assume that the "extra barrier" parameter has not been set. If this idea is correct, then the embedded IP nodes in (25) and (26) would not be inherent barriers, and the L-marked CPs cannot inherit barrierhood.\footnote{One could assume for (26) an analysis similar to that given for (19), namely, that who is actually not moved by the speakers of Korean. Such an analysis would thus result in an in-situ WH-phrase in subject position. In contrast to (19), however, the embedded clause in (26) is L-marked; hence, the CP node, while it would have to be generated, could not be an inherent barrier. In other words, the "extra barrier" parameter is the only factor of relevance to the re-}
and (26) may appear to be perfectly grammatical. Evidence against the availability of UG to the non-native speaker, these judgments are not.

Sentential subjects

Tables 1 and 2 show that the native speakers overwhelmingly reject WH-extraction from sentential subjects while the NL-Korean speakers of English do not. As in the case of the three domains of extraction discussed above, however, there is reason to believe that WH-extraction from sentential subjects may, from the perspective of the NL-Korean subject, seem perfectly grammatical.

The sentences (27) and (28) illustrate extraction from sentential subjects, the former tenseless and the latter tensed.

27. *Who] was [IP [CP for [IP me to have seen t_i]] such a bad idea ]?
28. *Who] was [IP [CP that [IP I saw t_i]] such a bad idea ]?

These two represent violations of subjacency since in both cases the CPs are not L-marked and thus barriers that transmit barrierhood to the higher IPs. There is, nonetheless, a distinct difference between the two, (28) being much less acceptable than (27). The reason for this difference is that in (28) the "extra barrier" of the embedded, tensed IP intervenes between the trace in the specifier of CP and its origin in the IP. Thus, while only two barriers intervene between the WH-phrase and its origin in (27), three barriers intervene in (28).

Whatever the merit of this idea, one can nonetheless imagine that the difference in acceptability between (27) and (28) for native speakers will not extend to the NL-Korean subjects. The assumption underlying this idea is that the non-native speakers have not set Chomsky's "extra barrier" parameter to include the most deeply embedded IP as a barrier. If this assumption is correct, then in the intuitions of these non-native subjects, all of the test sentences—which include three tensed and three tenseless sentential subjects—will "look like" the much more acceptable sentence (27).

Clearly, this idea might suggest a difference between the native speakers and the NL-Korean subjects, but the difference is between what one might call "ungrammatical" and "extremely ungrammatical." In other words, the analysis incorrectly predicts that the NL-Korean subjects will reject WH-extraction from interpretation of the sentences with embedded questions.
sentential subjects. However, yet another factor may be involved here as well. Recall from the discussion of variation that Korean might be assumed to be non-configurational (see Kim 1976). If this assumption is correct, then one might further posit that the NL-Korean speaker of L2-English might impose the non-configurational nature of the NL onto English.

Let us suppose that these two assumptions hold in order to see what results. First, the underlying nature of English will look rather different, with the subject a sister of the verb. Hence, rather than (28), the NL-Korean may construct something closer to (29), which is altered to illustrate the case.

29. Whoi wasj [IP [CP that I saw t1 ] t j [NP such a bad idea]]

In (29), the CP-subject is the sister to the verb and is thus directly L-marked and not a barrier to extraction. Moreover, the CP-subject does not inherit barrierhood from the embedded IP since we assume that the “extra barrier” parameter is not set by these non-natives. In addition, the higher IP is not a barrier by definition, and it also does not inherit barrierhood. In other words, there are no barriers whatsoever between the trace and the WH-phrase. For this reason, (29) should appear grammatical to speakers who analyze it in this way. More generally, then, if the assumptions that have been made in this analysis are correct, then WH-extraction from sentential subjects should be grammatical for the NL-Korean subjects while, at the same time, ungrammatical to the native-speaking controls.

In summary, the analyses have shown that, in principle, it is possible to show that the Korean subjects may view Schachter’s test sentences in a way that differs substantially from the way that native speakers may view them. The central idea of all of the analyses is that these non-natives utilize Universal Grammar as it applies to their NL to analyze English sentences.

CONCLUSION

It should be kept in mind that the present discussion only considers the judgments of the Korean subjects. Clearly, before any definitive conclusions may be drawn, the judgments of the Chinese and Indonesian subjects must also be analyzed. In addition, the study relies on a number of important assumptions. For relative clauses, embedded questions and sentential subjects,
the subjects are assumed not to have set the "extra barrier" parameter. In addition, for relative clauses, the subjects are assumed to analyze subject WH-phrases as in-situ phrases, and for sentential subjects, they are assumed to believe that English has no VP. All of these assumptions must be examined carefully. For instance, it may be plausible to assume that non-configurationality may be a marked setting of UG (see Pinker 1984); hence, it follows from the Subset Principle (Berwick 1985) that the (direct positive) evidence available to L2 learners of English who assume non-configurationality will not suffice to reset to configurationality. However, making the same claim for the "extra barrier" parameter is much more difficult since adding IP as an "extra barrier" would appear to be unlearnable under conditions of positive evidence. The alternative would be that all Blocking Categories are barriers under (10a), thus allowing the learner to remove the IP barrier rather than to add it.

14 Yutaka Sato (personal communication) has pointed out that direct positive evidence should indeed suffice to reset to a configurational setting (if, of course, such a parameter exists in the first place). He suggests that sentences like (i), appearing in English input, would appear to be ungrammatical under a non-configurational analysis.

\[ \textit{John} \text{ shaved himself} \]

In (i), while the anaphor \textit{himself} is c-commanded by its antecedent \textit{John} in accord with Binding Principle A, the R-expression \textit{John} is also c-commanded by the anaphor in violation of Binding Principle C (see Fanselow & Felix 1987 for a discussion of the Binding Theory). In other words, under the assumption that learners initially believe English to be non-configurational, they would soon be confronted with evidence that shows that non-configurationality cannot be right.

There is a way around this idea, however. Assuming non-configurationality, Whitman (1987), for instance, argues for Japanese that when two overt NPs share the same binding domain, then linear precedence becomes relevant. In particular, in such instances, the NP on the left would contain the NP on the right, but not vice versa. Now, if this idea applies to Korean and, furthermore, if Korean speakers of English apply the idea to English, then the sentence in (i) would appear fully grammatical.

15 If IP is selectively removed as a barrier (i.e., in the most deeply embedded tensed clause) rather than added, then the analysis given in the discussion depends crucially on the absence of IP as a barrier in Korean. On the other hand, both Maria Beck and Robert Bley-Vroman have pointed out that this idea may, in fact, explain some of Schachter’s results. If Korean does not include IP as a barrier, then adding it back would be unlearnable under standard assumptions of the Subset Principle (Berwick 1985). Evidence that IP is, indeed, excluded as a barrier in Korean is hard to come by; however, an informal survey by Sato (1989) of judgments by native
These and other questions notwithstanding, the analyses do suggest that the results in Schachter's study may not be as convincing as they might otherwise seem. On the other hand, it is quite conceivable that one might see these analyses as mere handwaving in the face of uncomfortable results. To such a response, one can only point out that changes in linguistic theory come about because it is felt that such changes improve the theory, making it a better representation of a mental grammar. It thus behooves those involved with acquisition to take such changes into account, in L1 studies to shed light on the veracity of such changes and in L2 research (a somewhat murkier object of inquiry) to understand more of the phenomenon at hand. Moreover, it should not be assumed from the analyses in this study that adult access to UG simply cannot be tested. The fact is that the grammars attributed to the non-native speakers are specific claims that lend themselves easily to testing. In the case of WH-extraction from relative clauses, for instance, the analysis proposed above includes an in-situ WH-relative in subject position; if the WH-relative were the object, then the in-situ analysis would be impossible. In other words, the analysis suggests that these non-natives will accept WH-extraction of objects from relative clauses with subject WH-relatives, but not WH-extraction where object WH-relatives are involved. Similarly specific and testable predictions may be drawn from the analyses of the other three domains of extraction. In sum, while the specific analyses that have been proposed in this study may, in fact, be faulty, whatever turns out to be closer to the truth will likely be rather complex.

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speakers of Korean suggests that WH-movement across IP and CP leads to mixed results, with some speakers finding such sentences marginal, others ungrammatical. This finding is consistent with Chomsky's (1986) idea that WH-movement across one barrier (rather than two) can lead to marginality.
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