Adjunct Condition and Empty Operator Movement*

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0. Introduction

It has been widely assumed that the adjunct condition effects should be accounted for on a par with the subject condition effects by means of configurational terms (see, among others, Huang (1982) and Chomsky (1986b)). Contrary to this widespread view, this paper argues that the adjunct condition effects are due to the internal structure of adjuncts. Specifically, it is shown that there is always empty operator movement within an adjunct, which enables us to account for the adjunct condition effects on a par with the \textit{wh}-island effects. The organization of this paper is as follows. Section 1 investigates how Huang's (1982) Condition on Extraction Domain (CED) and Chomsky's (1986b) notion of "barriers" can account for the subject and adjunct condition effects in English. Section 2 deals with the subject and adjunct condition effects in Japanese. It is shown that neither the CED nor the notion of "barriers" can account for argument/adjunct asymmetries with respect to extraction domains in Japanese. Section 3 shows that adjunct clauses always involve empty operator movement. Section 4 argues that given empty operator movement within adjuncts, we can account for the adjunct condition effects on a par with the \textit{wh}-island effects.
1. Extraction out of an Adjunct Clause in English

A close study on extraction domains was first made by Ross (1967). Among various findings, it was shown that in English, while extraction out of complements is allowed, extraction out of subjects or adjuncts is disallowed, as shown below:

(1) Extraction out of complements
   Who did you believe [that John saw $t$]? 

(2) No extraction out of adjuncts (Adjunct Condition)
   *?Who did John get jealous [before I talked to $t$]? 

(3) No extraction out of subjects (Subject Condition)
   a.*?Who do [pictures of $t$] please you? 
   b.*?Who did [that she married $t$] surprise you? 

Based on these observations, Huang (1982) argues that the crucial difference between complements, on the one hand, and subjects and adjuncts, on the other, is that while the former is properly governed by matrix verbs, the latter is not. In order to account for this asymmetry between complements and noncomplements with respect to extraction domains, Huang (1982) proposes the Condition on Extraction Domain (CED) (Huang 1982: 505):

(4) Condition on Extraction Domain (CED)
    A phrase $A'$ may be extracted out of a domain $B$ only if $B$ is properly governed.

Huang assumes that the proper government requirement can be satisfied either by lexical government or antecedent government. He argues, however, that since the domain itself is not a trace, it never has a moved category as its antecedent governor. Hence, in order to satisfy the CED, all the domains out of which extraction takes place must be lexically governed. He defines the notion of "lexical government" as follows:

(5) Lexical Government
    $\alpha$ lexically governs $\beta$ iff $\alpha$ is an $X^0$ category that governs $\beta$ and
the minimal X' category dominating α dominates β.
In (1), the complement clause that John saw t is properly governed by
the matrix verb believe; the wh-phrase who can be extracted out of the
complement clause. In (2), on the other hand, the adjunct clause before
I talked to t is not properly governed; the wh-phrase who cannot be ex-
tracted out of the adjunct clause. Similarly, in (3a, b), neither the sub-
ject NP pictures of t nor the subject clause that she married t is properly
governed; the wh-phrase who cannot be extracted out of the subject.

Based on Huang’s (1982) insight, Chomsky (1986b) argued that the
traditional subjacency condition and the CED can be subsumed under
the notion of “barriers.” In order to define the notion of “barriers,” we
first define “Blocking Category” (BC) (Chomsky 1986b: 14):

(6) γ is a BC for β iff γ is not L-marked and γ dominates β, where
γ is a maximal projection.

Based on the notion of “Blocking Category”, we define the notion of
“barriers” (Chomsky 1986b: 14):

(7) γ is a barrier for β iff (a) or (b):
   a. γ immediately dominates δ, δ a BC for β;
   b. γ is a BC for β, γ ≠ IP.

The notion of “L-marking” in (6) is defined in terms of θ-government
(Chomsky 1986b: 15):

(8) L-marking
   α L-marks β iff α is a lexical category that θ-governs β.

(9) θ-government
   α θ-governs β iff α is a zero-level category that θ-marks β, and
   α, β are sisters.

Let us consider the examples in (1–3) again. Under Chomsky’s the-
tory, (1) would be assigned the following S-structure representation:

(10) [CP Who did you [VP t’’ [VP believe [CP t’” that John [VP t’
      [VP saw t]]]]]]

In (10), successive wh-movement of who from its original embedded
object position to the Spec of the matrix C crosses no barriers. Every
chain link of the chain (who, t’’ , t’”, t’, t) meets the subjacency condition
(11); there is no subjacency violation in (10) (Chomsky 1986b: 30). (3)

(11) The subjacency condition
If \((\alpha_i, \alpha_{i+1})\) is a link of a chain, then \(\alpha_{i+1}\) is subjacent to \(\alpha_i\).

(12) \(\beta\) is \(n\)-subjacent to \(\alpha\) iff there are fewer than \(n+1\) barriers for \(\beta\) that exclude \(\alpha\).

Turning now to the adjunct condition effects, under Chomsky's analysis, (2) would be assigned either (13) or (14) as its S-structure representation depending on the status of before:

(13) \([\text{CP} \quad \textbf{Who} \quad \text{did} \quad [\text{IP} \quad \text{John \ get \ jealous} \quad [\text{PP} \quad \text{before} \quad [\text{CP} \quad t'' \quad [\text{IP} \quad t' \quad \text{[VP \ talk \ to \ } t]]]]]]]

(14) \([\text{CP} \quad \textbf{Who} \quad \text{did} \quad [\text{IP} \quad \text{John \ get \ jealous} \quad [\text{CP} \quad t'' \quad [\text{C} \quad \text{before} \quad [\text{IP} \quad t' \quad \text{[VP \ talk \ to \ } t]]]]]]]

While before is a preposition in (13), it is a complementizer in (14). In (13), since PP is not L-marked, it is a BC and hence counts as a barrier for \(t'\). IP inherits barrierhood from PP. Hence, movement from \(t''\) to who crosses two barriers; the chain link (who, \(t''\)) violates the subjacency condition. Similarly, in (14), since CP is not L-marked, it is not only a BC but also a barrier for \(t''\). IP inherits barrierhood from CP. Hence, the chain link (who, \(t''\)) violates the subjacency condition. As a result, sentence (2) can be ruled out under Chomsky's theory regardless of whether before is a preposition or a complementizer. (3), (4)

Let us finally look at the subject condition effects. Under Chomsky's analysis, (3a, b) would be assigned the S-structure representations (15) and (16), respectively:

(15) \([\text{CP} \quad \textbf{Who} \quad [\text{C} \quad \text{do} \quad [\text{IP} \quad [\text{NP \ pictures \ of \ } t] \ \text{please \ you}]]]]]

(16) \([\text{CP} \quad \textbf{Who} \quad [\text{C} \quad \text{did} \quad [\text{IP} \quad [\text{CP} \quad t' \quad [\text{C} \quad \text{that} \quad [\text{IP} \quad \text{she \ married \ } t]]] \ \text{surprise \ you}]]]]]

In (15), since NP is not L-marked, it is a BC and hence counts as a barrier for \(t\). IP inherits barrierhood from NP. Hence, the movement of who from its original position to the Spec of the matrix C crosses two barriers; the chain link (who, \(t\)) violates the subjacency condition. In (16), the subject CP is a BC and thus a barrier for \(t'\), since it is not L-marked. IP inherits barrierhood from the subject CP. Hence, the chain link (who,
violates the subjacency condition.

To sum up, it was shown that both Huang's (1982) CED and Chomsky's (1986b) notion of "barriers" can account for complement/noncomplement asymmetries with respect to extraction domains in English. Although they diverge in their formulations of extraction domains, they nevertheless agree in claiming that extraction is only possible out of the domains which are sister to \( X^0 \) (where \( X \) is lexical). The next section will look at extraction facts in Japanese, pointing out that extraction is also possible out of the domains which are not sisters to \( X^0 \).

2. Argument/Adjunct Asymmetries with respect to Extraction Domains in Japanese

As advocated in Saito (1985), scrambling is responsible for the relatively free word order in Japanese. For example, (17b-f) are derived from (17a) through scrambling:

(17) a. John-ga Mary-ni hon-o age-ta
    -Nom -Dat book-Acc give-Past
b. John-ga hon-o, Mary-ni ti, age-ta
c. Mary-ni, John-ga ti, hon-o age-ta
d. Mary-ni, hon-o, John-ga ti, ti, age-ta
e. Hon-o, John-ga Mary-ni ti, age-ta
f. Hon-o, Mary-ni, John-ga ti, ti, age-ta
    'John gave a book to Mary.'

Saito (1985) claims that so called "long-distance" scrambling is also possible, but is subject to the island conditions. As shown in the following examples, while scrambling out of complements is allowed, scrambling out of adjuncts is not:

(18) Extraction out of complements
    [Sono hon-o], John-ga [Mary-ga ti, katta to] omotte iru
that book-Acc -Nom that bought COMP think
    'John thinks that Mary bought that book.' (Saito 1985: 156)
(19) No extraction out of adjuncts
  *[Sono hon-o], John-ga [minna-ga t, kau node]
  that book-Acc -Nom all-Nom buy because
  [tigau hon]-o kat-ta
different book-Acc buy-Past
  'Because everyone buys that book, John bought a different one.'
  (Saito 1985: 247)
In (18), sono hon-o 'that book-Acc' is scrambled out of the complement clause Mary-ga sono hon-o katta to 'that Mary bought that book'; the result is acceptable. In (19), on the other hand, sono hon-o 'that book-Acc' is scrambled out of the adjunct clause minna-ga sono hon-o kau node 'because everyone buys that book'; the result is deviant. What is noteworthy is that scrambling out of subjects is acceptable in Japanese, as shown below:

(20) Extraction out of subjects
  ??[Dono hon-o], Mary-ga [John-ga t, katta koto]-ga
  which book-Acc -Nom -Nom buy-Past fact-Nom
  mondai-da to omotteru no
  problem-is COMP think Q
  'Which book does Mary thinks that the fact that John bought it is a problem?'
In (20), dono hon-o 'which book-Acc' is scrambled out of the subject John-ga dono hon-o katta koto-ga 'the fact that John bought which book'; the result is acceptable. As pointed out in Fukui (1995) and Saito (1985; 1992), although (20) is awkward, it is much better than the normal subject condition violations. One can safely say that its awkwardness is due to the fact that extraction out of koto-clauses is always marginal (maybe due to the complex NP constraint). Scrambling out of object koto-clauses is also marginal, as shown below:

(21) ??[Dono hon-o], Mary-ga [John-ga t, katta koto]-o
  which problem.Acc -Nom -Nom buy-Past fact.Acc
  mondai-ni siteru no
  problem-Dat making Q
'Which book is it that Mary is calling the fact that John bought it into question?'  

(Saito 1985: 272)

What has emerged from the discussion above is that unlike in English, where there are complement/non-complement asymmetries, there are argument/adjunct asymmetries with respect to extraction domains in Japanese. While extraction out of subjects and complements is acceptable, extraction out of adjuncts is not.

This view is further confirmed by facts on empty operator movement. It has been claimed that empty operator movement is involved in Topicalization (Saito 1985, Hoji 1990), the cleft construction (Hoji 1990), and the comparative deletion construction (Kukuchi 1987, Ishii 1991). The discussion to follow is only based on the comparative deletion construction, though it should be pointed out that facts on topicalization and the cleft construction would lead us to the same conclusion. Kikuchi (1987) and Ishii (1991) argue that the comparative deletion construction in Japanese involves empty operator movement. Let us consider (22) as an example:

(22) John-ga [Mary-ga yon-da yori(mo)] takusan-no
    -Nom    -Nom read-Past than many-Gen

hon-o yon-da

book-Acc read-Past

'John read more books than Mary read.'

Under the empty operator movement analysis, its S-structure representation is as follows:

(23) John-ga [PP [CP [IP Mary-ga t, yonda] OP] yori(mo)]

takusan-no hon-o yonda

In (23), the empty operator OP moves from the object position of yon-da 'read-Past' to the Spec of C. As evidence in support of this empty operator movement analysis of comparative deletion constructions, Kikuchi and Ishii show that the comparative deletion construction is sensitive to the island conditions. Specifically, while extraction of an empty operator out of a complement is acceptable, extraction of an empty operator out of an adjunct is not, as shown below:
(24) Extraction out of complements
\[ [PP [CP [IP John-ga [Bill-ga t, yonda to] omotteiru] OP]] \]
\[
\begin{align*}
&\text{-Nom} \quad \text{read-Past COMP think} \\
&\text{yori(mo)] Mary-wa takusan-no hon-o yonde-ita} \\
&\text{than} \\
&\text{Top many-Gen book-Acc had read} \\
'\text{Mary had read more books than John thinks that Bill read.'}
\end{align*}
\]

(25) No extraction out of adjuncts
\[
\begin{align*}
&\text{yori(mo)] John-wa takusan-no hon-o} \\
go-out-Past &\quad \text{than} \\
&\text{Top many-Gen book-Acc yon-da} \\
&\text{read-Past} \\
'\text{John read more books than everyone went out for walking after Paul read.'}
\end{align*}
\]

In (24), the empty operator OP is extracted out of the complement clause Bill-ga OP yonda to ‘that Bill read OP’; the result is acceptable. In (25), on the other hand, the empty operator OP is extracted out of the adjunct clause Paul-ga OP yonda atode ‘after Paul read OP’; the result is deviant. It should be noted that as in the case of scrambling, extraction of an empty operator out of a subject is acceptable, as shown below:

(26) Extraction out of subjects
\[
\begin{align*}
&\text{-Nom} \quad \text{buy-Past fact-Nom} \\
&\text{problem-is COMP think} \\
&takusan-no hon-o kat-ta \\
&\text{many-Gen book-Acc buy-Past} \\
'\text{John bought more books than Mary thinks that the fact that Bill bought is a problem'}
\end{align*}
\]

In (26), although the empty operator OP is extracted out of the subject Bill-ga OP katta koto-ga ‘the fact that Bill bought OP’; the result is acceptable. As mentioned above, its awkwardness is due to the weak island-
hood of koto-clauses. The extraction of an empty operator out of an object koto-clause is also marginal. There is no contrast in acceptability between (26) and (27):

(27) ??[PP [CP [IP Mary-ga [Bill-ga t, kat-ta koto]-o
-Nom -Nom buy-Past fact-Acc
mondai-ni site-ru] OP] yori(mo)] John-wa
problem-Dat making than -Top
takusan-no hon-o kat-ta
many-Gen book-Acc buy-Past
'John bought more books than Mary is calling the fact that Bill bought into question.'

Hence, empty operator movement presents further evidence in support of argument/adjunct asymmetries with respect to extraction domains in Japanese.

Let us next look at whether Huang’s (1982) CED and Chomsky’s (1986b) notion of “barriers” can account for such asymmetries between arguments/adjunct asymmetries with respect to extraction domains in Japanese. In order for the CED to accommodate the extraction facts in Japanese, we need to ensure that while subjects and objects are properly governed, adjuncts are not. One possibility is to stipulate the Japanese clause structure (28) and the extended definition of lexical government for Japanese (29): (5)

(28) [IP Subject [\(\Gamma\) [VP\(\gamma\) Adjunct [VP\(\gamma\) Object V]] INFL]]

(29) Lexical Government for Japanese
\(\alpha\) lexically governs \(\beta\) iff \(\alpha\) is an X\(^0\) category that governs \(\beta\) and the minimal XP category dominating \(\alpha\) dominates \(\beta\)

Let us assume that INFL is also a lexical category. Then, according to (29), subjects are lexically governed and thus properly governed by INFL. Adjuncts, however, are not properly governed. Notice that adjuncts are not lexically governed by V, since adjuncts are not dominated by VP\(\gamma\), which is the minimal XP dominating V. Hence, this account can correctly predict that while extraction out of a subject is acceptable, extraction out of an adjunct is not.
Apart from the stipulative nature of (29), this analysis is empirically problematic if we take into consideration extraction out of a scrambled phrase. Let us look at the following examples:

(30) John-ga [[Bill-ga sono hon-o kat-ta to], Mary-ga t, Nom -Nom the book-Acc buy-Past COMP -Nom omoikondeiru to] it-ta
    take it for granted COMP say-Past
    ‘John said that Mary took it for granted that Bill bought the book.’

(31) John-ga [[minna-ga sono hon-o kat-ta noni],
    -Nom everyone-Nom the book-Acc buy-Past although Mary-ga t, tigau hon-o kat-ta to] it-ta
    -Nom different book-Acc buy-Past COMP say-Past
    ‘John said that although everyone bought that book, Mary bought a different one.’

In (30), the complement clause Bill-ga sono hon-o katta to ‘that Bill bought the book’ is scrambled to the initial position of the embedded clause. In (31), the adjunct clause minna-ga sono hon-o katta noni ‘although everyone bought that book’ is scrambled to the initial position of the embedded clause. The adoption of the Japanese clause structure (28) leads us to assume that scrambled phrases are adjoined to IP. Hence, the S-structure representations of (30) and (31) would be as below:

(32) John-ga [[IP [Bill-ga sono hon-o katta to], [IP Mary-ga t, omoikondeiru to]] itta

(33) John-ga [[IP [minna-ga sono hon-o katta noni], [IP Mary-ga t, tigau hon-o katta to]] itta

The point to observe here is that according to the definition of lexical government (29), the scrambled phrases are not properly governed. This is because the scrambled phrases are not lexically governed by INFL, since the scrambled phrases are not dominated by IP, which is the minimal XP dominating INFL. Hence, the CED would predict that no element can be extracted out of scrambled phrases irrespectively of
whether the scrambled phrases are arguments or adjuncts. Contrary to what the CED would predict, however, extraction out of a scrambled argument is acceptable, while extraction out of a scrambled adjunct is not, as shown below:

(34) Scrambling out of scrambled arguments

\[
[\text{IP}, \text{Sono hon-o}, [\text{IP}, \text{John-ga} [\text{IP}, \text{Bill-ga} \ t, \text{kat-ta} \ to]], \\
\text{the book-Acc} \ -\text{Nom} \ -\text{Nom buy-Past COMP} \\
[\text{IP}, \text{Mary-ga} \ t, \text{omoikondeiru} \ to]] \ it-ta)]
\]

-Nom take it for granted COMP say-Past

'John said that Mary took it for granted that Bill bought the book.'

(35) No scrambling out of scrambled adjuncts

\[
?*[\text{IP}, \text{Sono hon-o}, [\text{IP}, \text{John-ga} [\text{IP}, \text{minna-ga} \ t, \text{kat-ta} \\
\text{that book-Acc} \ -\text{Nom} \ -\text{Nom buy-Past noni}}, [\text{IP}, \text{Mary-ga} \ t, \text{tigau hon-o kat-ta to}]) \\
\text{although} \ -\text{Nom different book-Acc buy-Past COMP it-ta}]
\]

say-Past

'Although everyone buys the book, John bought a different one.'

(36) Comparative deletion construction with scrambled arguments

\[
[\text{IP}, [\text{IP}, \text{Bill-ga} \ t, \text{kat-ta} \ to], \text{Mary-ga} \ t, \text{omoikondeiru}] \text{OP}]
\]

-Nom buy-Past COMP -Nom take it for granted

yori(mo) John-wa takusan-no hon o kat-ta than -Top many-Gen book-Acc buy-Past

'John bought more books than Mary took it for granted that Bill bought.'

(37) No comparative deletion construction with scrambled adjuncts

\[
*[\text{IP}, \text{Paul-ga} \ t, \text{yonde kara}], [\text{IP}, \text{minna-ga} \ t, \\
\text{-Nom read after everyone-Nom sampo-ni dekake-ta}] \text{OP} \ yori(mo)] \text{John-wa takusan-no}
\]
walking-to go-out-Past than -Top many-Gen
hon-o yon-da
book-Acc read-Past
'John read more books than everyone went out for walking
after Paul read.'

In (34), *sono hon-o* 'the book-Acc' is scrambled out of the scrambled complement clause *Bill-ga sono hon-o katta to* 'that Bill bought the book'; the result is acceptable. In (35), on the other hand, *sono hon-o* 'the book-Acc' is scrambled out of the scrambled adjunct clause *minna-ga sono hon-o katta noni* 'although everyone buys the book'; the result is deviant. Similarly, in (36), the empty operator *OP* is extracted out of the scrambled complement clause *Bill-ga OP katta to* 'that Bill bought *OP*'; the result is acceptable. In (37), however, the empty operator *OP* is extracted out of the scrambled adjunct clause *Paul-ga OP yonde kara* 'after Paul read *OP*'; the result is deviant. What has emerged from the above discussion is that the argument/adjunct asymmetries with respect to extraction domains are still observed after scrambling, and the CED cannot accommodate such asymmetries.

Let us go on to consider whether Chomsky's (1986) notion of "barriers" can accommodate the argument/adjunct asymmetries with respect to extraction domains in Japanese. The "barriers" analysis might be able to accommodate such asymmetries if it assumes the extended definition of L-marking for Japanese (38):

(38) L-marking for Japanese

\[ \alpha \text{ L-mark}\beta \text{ if } \alpha \text{ is a lexical category that directly or indirectly assigns } \theta\text{-role to } \beta. \]

Given (38), the "barriers" analysis can correctly predict that while extraction out of a subject is acceptable, extraction out of an adjunct is not. This is because while subjects are (indirectly) assigned \( \theta\)-role by verbs, adjuncts are not. Apart from the stipulative nature of the extended definition of L-marking (38), however, there is empirical evidence to suggest that the "barriers" analysis based on (38) is untenable. The "barriers" analysis cannot account for the fact that while extraction out
of a scrambled argument is acceptable, extraction out of a scrambled adjunct is not, as shown in (34–37). Since scrambled positions are not assigned any $\theta$-role and thus not L-marked, they function as "barriers". Hence, the "barriers" analysis based on the extended L-marking (38) would wrongly predict that no element can be extracted out of scrambled phrases irrespectively of whether scrambled phrases are arguments or adjuncts.

To recapitulate the above discussion, neither the CED nor the notion of "barriers" can accommodate the argument/adjunct asymmetries with respect to extraction domains in Japanese. Before we come to presenting our analysis fully, let us mention it briefly. Our analysis proposes that the adjunct condition effects should not be dealt with on a part with the subject condition effects, which is contrary to what Chomsky (1986b) and Huang (1982) claim. We will argue instead that while the subject condition effects should be derived by means of configurational terms, such as the CED or the notion of "barriers", the adjunct condition effects should be treated on a par with the $wh$-island constraint.

Let us begin by considering clause structure in Japanese again. Following Fukui (1992), our analysis posits the following clause structure in Japanese:

\[(39) \ [T' \ NP_{1} ga \ [T' \ [V' l_{i} [V' ADJUNCT [V NP-o V']] ]] T']]\]

Fukui (1992) assumes that subject noun phrases originate within $V'$, and then adjoin to $T'$ in order to be marked by -$ga$. As for scrambling, we assume that scrambled phrases are adjoined to either $V'$ or $T'$. Given the Japanese clause structure (39), we argue that the CED and the notion of "barriers" should be reformulated in terms of the notion of "extended complement" (40) (Cf. Fukui (1992)):

\[(40) \ \text{Extended Complement} \]

$\beta$ is an extended complement of $\alpha$ if

(i) $\beta$ is contained by an immediate projection of $\alpha$, and
(ii) there is no category which dominates $\beta$, but not $\alpha$.$^{(6)}$

The notion of "immediate projection" is defined as follows:

\[(41) \ \text{Immediate Projection} \]
\( \beta \) is an immediate projection of \( \alpha \) iff

(i) \( \beta \) is \( \alpha' \), or

(ii) \( \beta \) is \( \alpha'' \) when there is no \( \alpha' \) which dominates \( \alpha \), but not \( \beta \).

Let us first consider how the CED based on the definition of "extended complement" (42) works. The CED would be revised as follows:

(42) The Revised CED

A phrase A may be extracted out of a domain B only if B is an extended complement.

Concerning complement positions, they are contained in the immediate projection of V in both English and Japanese, and hence count as extended complements of V; they are legitimate extraction domains. Turning now to subject positions, subjects in English are in the Spec of TP. Since they are not contained by the immediate projection of T, \textit{i.e.} T', they do not count as extended complements of T. Hence, the revised CED (51) would correctly predict that subjects in English are not legitimate extraction domains. The revised CED (42) would also correctly predict that subjects in Japanese are legitimate extraction domains, since subject positions in Japanese are contained in the immediate projection of T, \textit{i.e.} T', and thus count as extended complements of T. Furthermore, on the assumption that scrambled phrases are adjoined to either V' or T', and hence contained in the immediate projection of V or T, extraction out of scrambled phrases in Japanese does not violate the revised CED (42).

If we pursue the "barriers" approach, we claim that the definition of L-marking should be reformulated based on the definition of "extended complement" (40):

(43) \( \alpha \) L-marks \( \beta \) iff \( \beta \) is an extended complement of \( \alpha \), and \( \alpha \) is lexical.

In regard to complement positions, since they are extended complements of V in both English and Japanese, they do not count as BCs or inherent barriers. Hence, extraction out of complement clauses through Spec of C does not cross any barrier. Turning now to subject positions,
subjects in English do not count as extended complements. Hence, they count as BCs and inherent barriers; extraction out of subjects in English is illegitimate. Subjects in Japanese, on the contrary, are extended complements of T, and hence do not count as BCs or inherent barriers; extraction out of subjects in Japanese is legitimate. Similarly, scrambled phrases in Japanese are extended complements of V or T, and hence do not count as BCs or inherent barriers; extraction out of scrambled phrases is not ruled out in terms of the notion of "barriers".

What cannot be accounted for by either the revised CED or the revised notion of "barriers" is the fact that no element can be extracted out of adjuncts in English or Japanese no matter where they may appear. Let us assume that adjuncts in English can either be adjoined to VP or TP. Extraction out of TP-adjoined adjuncts can be ruled out in terms of either the revised CED or the revised notion of "barriers". This is because TP-adjoined positions are not contained in the immediate projection of T, i.e. T', and thus do not count as extended complements. Extraction out of VP-adjoined adjuncts, however, cannot be always ruled out in terms of either the revised CED or the revised notion of "barriers". This is because VP-adjoined positions count as extended complements of V if there is no V'. Turning to adjuncts in Japanese, base-generated adjuncts are adjoined to V', and hence count as extended complements of V. Scrambled adjuncts are also adjoined to either V' or T', and hence extended complements of V or T. Hence, extraction out of base-generated adjuncts and scrambled adjuncts cannot be ruled out by either the revised CED or the revised notion of "barriers". It follows from what has been shown above that the adjunct condition effects should not be stated by means of configurational terms, since they are always illegitimate extraction domains no matter where they may appear. I will rather argue that the adjunct condition effects are due to the internal structure of adjuncts. The next section will look at the internal structure of adjuncts.
3. Empty Operator Movement within Adjuncts

This section will first present Larson's (1987) arguments in favor of assuming empty operator movement within a certain kind of adjunct clauses. I will then develop Larson's analysis, arguing that empty operator movement is involved in every adjunct clause.

Larson (1987) observes that sentences like (44-47), where adjunct clauses are headed by before, after, until, and since (hereafter called before-class prepositions), are ambiguous (Larson 1987: 120):

(44) I saw Mary in New York [before she claimed that she would arrive].
   a. I saw Mary in New York before she made a certain claim, viz.: that she would arrive (sometime).
   b. I saw Mary in New York prior to some time T which she claimed would be the time of her arrival.

(45) I saw Mary in New York [after she swore that she had left].
   a. I saw Mary in New York subsequent to swearing that a certain proposition was true, viz.: that she had left.
   b. I saw Mary in New York after some time T which she swore would be the time of her departure.

(46) I can't leave [until John said I could leave].
   a. I can't leave until John said a certain proposition, viz.: that I could leave.
   b. I can't leave until some time T which John said would be the time when I could leave.

(47) I haven't been there [since I told you I was there].
   a. I haven't been there since I told you a certain proposition, viz.: I was there.
   b. I haven't been there since some time T which I told you would be the time when I was there.

Under the (a) readings of (44-47), before, after, until, and since are associated with the matrix clauses. Under the (b) readings of (44-47), on the
other hand, before, after, until, and since are associated with the embedded clauses. In order to account for the ambiguous interpretations of examples like (44-47), Larson (1987) posits empty operator movement within adjuncts. Let us consider (44) as an example. Under the (b) reading, (44) is assigned the following structure:

(48) I saw Mary in New York [PP before [CP OP, [TP she claimed [CP that [she would arrive ti]]]]]

In (48), the empty operator OP originates in the embedded clause and moves into the Spec of C. Under the (a) reading, on the other hand, (44) is assigned the following structure:

(49) I saw Mary in New York [PP before [CP [TP she claimed [CP that [TP she would arrive]]]]]

Unlike (48), (49) does not involve any empty operator movement. Larson (1987) claims that the (a) reading of (44) should not be derived from empty operator movement from the matrix clause to the Spec of C. He instead argues that under the (a) reading, before combines semantically with the matrix clause of its complement CP in terms of the fact that before is accessible to the matrix tense of its complement CP through COMP.

Larson points out that unlike adjunct clauses headed by before-class prepositions, those headed by although, because, in case, and unless (hereafter called although-class prepositions) are not ambiguous, as shown below (Larson 1987: 123):

(50) a. I still respect John [although he claims that he killed his mother].
   b. I visited New York [because Mary dreamed that Max was there].
   c. I won't visit New York [unless Bill promises Mary will be there].
   d. I won't visit New York [in case Bill says Mary is there].

In contrast to (44-47), (50a-d) can only be interpreted in a way where prepositions are associated with the matrix clauses. Let us take (50a) as an example. If (50a) were analogous to (44-47) in its interpretive
possibilities, we would expect two readings according to whether concession is being made for John's claiming or for his killing his mother. These two readings can be paraphrased as follows:

(51)  a. I still respect John despite John's claiming that he killed his mother.

b. I still respect John despite what John claims, viz., that he killed his mother.

The point to observe here is that only the first reading is available: although can only be associated with the matrix clause. In other words, (50a) would be assigned structure (52a), but not structure (52b):

(52)  a. I still respect John [PP although [CP [TP he claims [CP that [TP he killed his mother]]]]].

b. I still respect John [PP although [CP OP, [TP he claims [CP that [TP he killed his mother t]]]]]

Hence, under Larson's analysis, the difference between before-class and although-class prepositions lies in the fact that while the former can license empty operator movement, the latter cannot. Larson claims that this difference can be derived from the Case-marking properties of these prepositions. As illustrated in (53), before-class can assign a structural Case and hence take NP objects, but although-class prepositions cannot (Larson 1987: 125):

(53)  a. before/after/since/until that day

b. *although/because/unless/in case that fact/reason/eventuality

Larson assumes that the chain consisting of an empty operator and its trace must bear Case in order for the trace to be interpreted as a variable bound by the empty operator. He also proposes the notion of "multiple selection," which states that lexical items are free to express selectional properties whenever these may be expressed. Keeping these assumptions in mind, let us look at (48) and (52b). In (48), given the notion of "multiple selection," before may assign Case to the empty operator OP in the Spec of C in spite of the fact that it selects a clause. Since the chain (OP, t) bears Case, the trace t is interpreted as a variable; there is no
violation of the vacuous quantification. In (52b), on the other hand, since although does not have any ability to assign Case, the chain \((OP, t)\) does not bear any Case. The trace \(t\) cannot be interpreted as a variable; (52b) violates the ban on vacuous quantification.

Larson argues that further support for his analysis comes from the fact that empty operator movement is sensitive to the island conditions. Let us look at the following example (Larson 1987: 121):

(54) I saw Mary in New York [before she made [the claim that she had arrived]].
   a. I saw Mary in New York before she made a certain claim, viz: that she would arrive (sometime).
   b. *I saw Mary in New York prior to some time \(T\) which she claimed would be the time of her arrival.

Unlike (44), (54) is not ambiguous. The (a) and (b) readings of (54) are assigned structures (55) and (56), respectively:

(55) I saw Mary in New York \([_{PP} \text{before} \ [_{CP} \ [_{IP} \text{she made} \ [\text{the claim} \ [\text{that she had arrived}] Abrams]]]]\]

(56) I saw Mary in New York \([_{PP} \text{before} \ [_{CP} \text{OP}, \ [_{IP} \text{she made} \ [\text{the claim} \ [\text{that she had arrived} \(t_i\)] Abrams]]]]\]

In (55), before combines semantically with the matrix clause of its complement \(CP\) in terms of the fact that before is accessible to the matrix tense of its complement \(CP\) through COMP; the (a) reading of (53) is available. In (56), however, the empty operator \(OP\) is extracted out of the complex NP. There is a violation of the CNPC; the (b) reading of (54) is not available.

While essentially following Larson's analysis of adjunct clauses, I will develop his analysis, arguing that empty operator movement is involved with every adjunct clause. Let us consider (44) and (50a) (repeated here as (57) and (58) respectively) as examples again:

(57) I saw Mary in New York [before she claimed that she would arrive].
(58) I still respect John [although he claims that he killed his mother].
If empty operator movement is involved in any adjunct clause, we should expect (57) and (58) to be assigned structures (59a, b) and (60a, b), respectively:

\[
\begin{align*}
(59) & \quad a. \quad \text{I saw Mary in New York} \quad [\text{CP } \text{OP} \quad [\text{C} \quad \text{before} \quad [\text{IP} \quad \text{she claimed} \quad [\text{CP} \quad \text{that} \quad [\text{IP} \quad \text{she would arrive}] \quad t_i] \quad ]]]) \\
& \quad b. \quad \text{I saw Mary in New York} \quad [\text{CP } \text{OP} \quad [\text{C} \quad \text{before} \quad [\text{IP} \quad \text{she claimed} \quad [\text{CP} \quad t'_i \quad [\text{C} \quad \text{that} \quad [\text{IP} \quad \text{she would arrive} \quad t_i] \quad ]]])]
\end{align*}
\]

\[
\begin{align*}
(60) & \quad a. \quad \text{I still respect John} \quad [\text{CP } \text{OP} \quad [\text{C} \quad \text{although} \quad [\text{IP} \quad \text{he claims} \quad [\text{CP} \quad \text{that} \quad [\text{IP} \quad \text{he killed his mother}] \quad t_i] \quad ]]]) \\
& \quad b. \quad \text{I still respect John} \quad [\text{CP } \text{OP} \quad [\text{C} \quad \text{although} \quad [\text{IP} \quad \text{he claims} \quad [\text{CP} \quad t'_i \quad [\text{C} \quad \text{that} \quad [\text{IP} \quad \text{he killed his mother} \quad t_i] \quad ]]])]
\end{align*}
\]

Our analysis assumes that prepositions like \textit{before} and \textit{although} occupy complementizer positions. The (a) structures of (59, 60) represent the reading where the prepositions \textit{before} and \textit{although} are associated with the matrix clauses. The (b) structures of (59, 60) represent the reading where the prepositions \textit{before} and \textit{although} are associated with the embedded clauses. Recall, however, that while (57) is ambiguous, (58) is not. Especially, (58) only has the reading where the preposition \textit{although} is associated with the matrix clause. Hence, we need to offer an explanation for the fact that while (59a, b) and (60a) are legitimate structures, (60b) is not. I will argue that (60b) is ruled out by the economy condition.

Let us assume that empty operators are subject to the following licensing condition (cf. Browning (1987)):

\[
(61) \quad \text{Empty operators must move into the Spec of C before Spell-Out. Let us assume that an empty operator is assigned a morphological feature [+operator]. Let us furthermore assume that a [+operator] feature is strong in the sense of Chomsky (1993) and thus must be checked before Spell-Out, though it remains an unsettled question how to derive the notion of strength from deeper principles. Then, we can derive (61) from the morphological requirement that a [+operator] phrase must move to an operator position (=a [-L-related] position in the sense of Chomsky (1995)), i.e. the Spec of C, in order to satisfy its}
\]
scopal properties.\(^8\) It should be noted that (61) only requires that \([+\text{operator}]\) phrases must move into the nearest Spec of C in order to satisfy their morphological requirement. Especially, (61) does not require \([+\text{operator}]\) phrases to move any further. Hence, according to an economy condition proposed in Chomsky (1995), which informally states that an operation is allowed only if it is necessary for convergence, \([+\text{operator}]\) phrases move into the nearest Spec of C and stay there unless driven to move further by some other convergence conditions.

As an illustration, let us consider clefts and *that*-relative clauses, which are widely assumed to involve empty operator movement:

(62) a. It is Mary that Bill met.
    b. It is Mary that John thinks that Bill met.

(63) a. This is the house that John bought.
    b. This is the house that Mary claims that John bought.

The (a) examples of (62, 63) would be assigned the following structures:

(64) a. It is \([\text{NP Mary}]_i [\text{CP} \text{OP} \text{[C [\text{C that} i [\text{TP} Bill \text{met } t_i]]]}]
    b. This is \([\text{NP the house}]_i [\text{CP} \text{OP} \text{[C [\text{C that} i [\text{TP} John bought } t_i]]}]

In (64a, b), the empty operator OP is base-generated in the object position. Then, the empty operator OP is driven to move into the Spec of C in terms of its morphological requirement before Spell-Out. Note that this movement simultaneously satisfies the requirement that NP and CP must be in a subject-predicate relation. Following Browning (1987), let us assume that a subject-predicate relation can be licensed by either of the following two ways (Browning 1987: 62):\(^9\)

(65) A subject-predicate relation is licensed if
    a. The subject discharges the external \(\theta\)-role of the predicate, or
    b. The subject agrees with a chain contained in the predicate.

In (64), since CP does not have an ability to assign an external \(\theta\)-role, NP and CP can only be licensed as a subject-predicate relation by virtue of
Browning claims that NP agrees with a chain in CP, i.e. a chain headed by an empty operator, through “agreement chain.” In (64), (i) the empty operator \( OP \) agrees with C through Spec-head agreement, (ii) C agrees with its maximal projection CP by convention, and (iii) NP and CP agree by virtue of being subject and predicate. Hence, NP agrees with the chain \( (OP, t) \) in CP by transitivity. Note that NP and CP can establish a subject-predicate relation through “agreement chain” only if an empty operator moves into the Spec of C. Recall that an operation is allowed only if it is necessary for convergence. Based on the insight of Williams (1980) and Rothstein (1983), I claim that a subject-predicate licensing is a convergence condition. Then, movement of the empty operator \( OP \) into the Spec of C in (64) is triggered by a subject-predicate relation through “agreement-chain” as well as the morphological property of an empty operator.

Let us next consider the (b) examples of (62, 63), whose structures would be as follows:

(66) a. It is [\( NP \) Mary], [CP, \( OP \), [C', [C that]], [TP John thinks [CP \( t'_i \) [C' that [TP Bill met \( t_i \)]]]]]
b. This is [\( NP \) the house], [CP, \( OP \), [C', [C that]], [TP Mary claims [CP \( t'_i \) [C' that [TP John bought \( t_i \)]]]]]

In (66), the empty operator \( OP \) is base-generated in the embedded object position. Then, it moves into the Spec of the embedded C and further moves into the Spec of the matrix C before Spell-Out. Note that the empty operator \( OP \) is driven by its morphological property [+operator] to move into the Spec of the embedded C, but not any further. The empty operator \( OP \) would stay in the Spec of the embedded C unless driven to move further by some other requirements. In (65), the empty operator \( OP \) is driven to move into the Spec of the matrix C in terms of a subject-predicate relation through “agreement chain.”

Keeping the above discussion in mind, let us consider the structures in (59, 60). In (59a) and (60a), the empty operator \( OP \) originates in the matrix clause and moves into the Spec of the matrix C before Spell-Out. This movement is driven by the [+operator] feature of the empty
operator. In (59a), empty operator movement is also triggered by the morphological property of before. Recall that before has an ability to assign Case. Let us assume that the Case-feature of before is strong, and hence must be checked through Spec-head agreement before Spell-Out. The empty operator OP is thus driven to move into the Spec of C to check the Case-feature of before before Spell-Out. In (59b) and (60b), on the other hand, the empty operator OP is base-generated in the embedded clause. Then, the empty operator OP is driven by its morphological property, i.e. the [+operator] feature, to move into the Spec of the embedded C. In (59b), the empty operator is driven to move into the Spec of the matrix C in terms of the Case-feature of before. In (60b), however, nothing would drive the empty operator OP in the Spec of the embedded C to move into the Spec of the matrix C, since although, unlike before, does not have any ability to assign Case. Hence, in (60b), given the economy condition, movement of the empty operator OP into the Spec of the matrix C is illegitimate, since it is unnecessary for convergence. There is no way of assigning structure (60b) to (58). Rather, (58) is assigned the following structure when the empty operator originates in the embedded clause:

(67) I still respect John [CP [C although [TP he claims [CP OP; [C that [TP he killed his mother t]]]]]]

Note that in (67), all features are checked, and thus the derivation converges. There is, however, no coherent interpretation, since the empty operator OP is semantically "stranded." Since the empty operator OP is too far away from although in (67), the former cannot be semantically associated with the latter. Note that in (67), the empty operator OP in the Spec of the embedded C can never move into the Spec of the matrix C in order to get a coherent interpretation. This is because, as mentioned above, an operation is legitimate only if it is necessary for convergence.

Turning now to adjunct clauses in Japanese, let us first consider the following examples:
'I still respect John although John said that he killed his mother.'
a. I still respect John despite John's claiming that he killed his mother.
b. *I still respect John despite what John claims, viz.: that he killed his mother.

Watasi-wa [[John-ga [Bill-ga kubini natta to] it-ta] I-Top -Nom -Nom was fired COMP say-Past node] totemo odoroitabecause very was surprised
'I was very surprised because John said that Bill was fired.'
a. I was very surprised because of John's claiming that Bill was fired.
b. *I was very surprised because of what John claimed, viz.: that Bill was fired.

Watasi-wa [Maryi-ga [[pro, John-to konyaku sita I-Top -Nom -with engagement made to] happyo site] kara] [kanojo-ga hokano COMP announce make after she-Nom the other otoko-to aruite-iru tokoro-o mokugeki sita man-with, walking scene-Acc saw 'I saw Mary walking with the other man after Mary announced that she made an engagement with John.'
a. I saw Mary walking with the other man after Mary made a certain announcement, viz.: that she made an engagement with John.
b. *I saw Mary walking with the other man after some time.
which Mary announced would be the time of her engagement with John.

It is interesting to note that, unlike English adjunct clauses, Japanese adjunct clauses never exhibit ambiguities. Assuming that empty operator movement is also involved in Japanese adjunct clauses, our analysis can straightforwardly account for this difference between English and Japanese concerning the interpretation of adjunct clauses. Let us consider (68) as an example. Under our analysis, (68) is assigned the structures in (71) before Spell-Out:


Our analysis also assumes that postpositions like noni ‘although’ occupy complementizer positions. In (71a), the empty operator OP originates in the matrix clause. Then, the empty operator OP is driven by its morphological property [+operator] to move into the Spec of C; the resultant convergent representation is interpretable. In (71b), however, the empty operator OP originates in the embedded clause. Then, the empty operator OP is driven by its morphological property [+operator] to move into the Spec of the embedded C. Since nothing would trigger the empty operator OP in the Spec of the embedded C to move into the Spec of the matrix C, however, the economy condition requires the empty operator to stay in the Spec of the embedded C. Thus, the empty operator becomes semantically “stranded”; the resultant convergent representation (71b) is uninterpretable. Our analysis crucially assumes that the postpositions which introduce adjunct clauses in Japanese never assign Case to their Spec positions, and hence do not drive empty operators to move into their Spec positions. This view is supported by the fact that these postpositions can never take nominal objects, as shown below:

(72) *sigoto(-o/-no) noni/node/kara/nagara/ba/tara/to
work(-Acc/-Gen) although/because/after/while/if/if/when Therefore, under our analysis, the non-ambiguity of Japanese adjunct clauses straightforwardly follows.

To sum up this section, I have developed Larson's (1987) analysis of adjunct clauses, arguing that empty operator movement is involved in every adjunct clause. The next section will show that given empty operator movement within adjunct clauses, we can account for the adjunct condition effects on a par with the wh-island effects.

4. Adjunct Condition and Wh-Island Constraint

It is well known that a wh-phrase cannot be extracted out of an indirect question, as shown below:

(73) *What do you wonder [when, [John bought t; ti]]?

In the traditional terminology, (73) is deviant due to a violation of the wh-island constraint. The wh-island effects are not only observed with wh-movement but also with empty operator movement (cf. Culicover and Wexler 1977, Chomsky 1977, Fodor 1978, Pesetsky 1982, and Kuno and Robinson 1972):

(74) Wh-movement and the Tough Construction
    *I am wondering [which violin [this sonata is easy [OP, [to play t, on t,i]]]].

(75) The Relative Clause Construction and Wh-movement
    *I finally found a subject [OP, [to ask [who, [to talk to t, about t,i]]]].

(76) Topicalization and Wh-movement
    *This problem [OP, [Mary knows [who, [to consult t, about t,i]]]].

(77) The Cleft Construction and the Tough Construction
    *This is the knife [OP, [that the salami is easy [OP, [to cut t, with t,i]]]].

(78) The Too/Enough Construction and the Tough Construction
    *The wood is too rough [OP, [for these blunt nails to be easy...
Following Browning (1987) and Chomsky (1986a, 1986b), the tough construction, the relative clause construction, topicalization, the cleft construction, and the too/足够的 construction all involve empty operator movement. Various proposals have been made concerning how to derive the wh-island constraint from fundamental principles. For example, Rizzi's (1990) argues that the wh-island constraint should be subsumed under the Relativized Minimality (RM). Based on the insight of Rizzi's RM, Chomsky's (1995, 2000, 2001a, 2001b) argues that the wh-island constraint should be subsumed under the Minimal Link Condition. Since the discussion to follow holds valid irrespectively of which approach to the wh-island constraint is adopted, I will assume the wh-island constraint (79) as a descriptive generalization for expository purposes:

(79) The Wh-island Constraint

Extraction out of a clause whose specifier position is occupied by a wh-phrase or an empty operator is illegitimate.

The wh-island constraint (79) correctly rules out (74-78), where a wh-phrase or an empty operator is extracted out of a clausal CP whose specifier position is occupied by a wh-phrase or an empty operator.

Keeping the discussion above in mind, let us now consider the adjunct condition effects, taking (2, 19, 25) (repeated here as (80, 81, 82) respectively) as an example:

(80) *？Who, did John get jealous [ before I talk to ti]?

(81) *[Sono hon-o], John-ga [minna-ga t, kau node]

that book-Acc -Nom all-Nom buy because

[tigau hon]-o kat-ta
different book-Acc buy-Past

'Because everyone buys that book, John bought a different one.'

(82) *[PP [CP [IP Minna-ga [Paul-ga t, yonde kara]

everyone-Nom -Nom read after
walking-to go-out-Past than -Top
takusan-no hon-o yon-da
many-Gen book-Acc read-Past
'John read more books than everyone went out for walking after Paul read.'

Given the empty operator movement analysis of adjunct clauses, (80–82) are assigned the following structures:

(83) \[ \text{CP Who} \ [C' \text{ did IP John get jealous CP OP}_t \ [C' \text{ before IP I talk to } t, t]\] \]

(84) \[ T' \text{ Sono hon-o} \ [T' \text{ John-ga CP [C' [T' minna-ga } t, t, ka-u] node] OP}_j \text{ tigau hon-o kat-ta]} \]

(85) \[ \text{PP CP [T' Minna-ga CP [C' [T' Paul-ga } t, t, yonde] kara] OP}_j \text{ sampo-ni dekaketa}] \text{ OP}_j \text{ yori(mo)} ] \text{ John-wa takusan-no hon-o yonda} \]

In (83–85), extraction takes place out of the adjunct clause CP whose specifier position is occupied by the empty operator OP; this violates the wh-island constraint (79). Hence, we can correctly predict that (80–82) are deviant. It should be noted that since our analysis attributes the adjunct condition effect to the internal structure of an adjunct clause, it predicts that an adjunct always constitutes an island wherever it may appear. This correctly captures the fact that argument/adjunct asymmetries with respect to extraction domains are still observed after scrambling in Japanese as shown in (35, 37).

5. Conclusion

To conclude, I have argued that the adjunct condition effects should not be dealt with on a par with the subject condition effects, which is contrary to what Huang (1982) and Chomsky (1986) claim. Through the investigation of the extraction facts in English and Japanese, I have shown that while the subject condition effects emerge only if the subject positions do not count as extended complements, the adjunct condition effects can be observed no matter where the adjuncts may appear. This indicates that while the subject condition effects can be accounted for
by means of configurational terms, such as the CED or the notion of "barriers," the adjunct condition effects cannot be. I have argued that given the empty operator movement analysis of an adjunct clause, we can account for the adjunct condition effects in terms of the economy condition. Thus, according to our proposal, the adjunct condition effects should be dealt with on a par with the *wh*-island effects, not with the subject condition effects. Note that the *wh*-island effects can also be observed no matter where *wh*-islands may appear. Our proposal would furthermore predict that while whether a language exhibits the subject condition effects depends on the configurational status of the subject positions in that language, all languages exhibit the adjunct condition effects as well as the *wh*-island effects. I will leave this issue for further study.

Notes

* I would like to thank Lisa Cheng for her helpful comments on a previous version of this paper. Remaining errors and omissions are, of course, the sole responsibility of the author. This work was supported in part by the Japan Society for the Promotion of Science under grant Scientific Research C214510543 and by a grant from the Institute of Humanities at Meiji University.

(1) Here we are only concerned with the bounding theory, but not with the government theory. Note that what Chomsky (1986b) really aims at is to construct a unified theory of bounding and government, where not only the traditional subjacency condition and the CED but also the ECP is subsumed under the notion of "barriers."

(2) In (10), there is no ECP violation, either. Following Lasnik and Saito (1984), Chomsky (1986b) claims that the original trace *t* is antecedent-governed by *t′* and thus assigned [+γ] at S-structure. All the intermediate traces delete at LF.

(3) Neither (13) nor (14) violates the ECP, since the original trace *t* is antecedent-governed by *t′*, and thus assigned [+γ] at S-structure. Recall that all the intermediate traces delete at LF.

(4) Chomsky's (1986b) account of the adjunct condition effects is, in fact, untenable, since he assumes that adjunction is possible to a maximal projection that is a nonargument (see Chomsky 1986b: 6). Hence, it is also conceivable under his theory that (2) would be assigned either (i) or (ii)
as its S-structure representation:

\begin{enumerate}
\item \([_{\text{CP}} \text{Who} \text{ did} \ [_{\text{IP}} \text{John get jealous} \ [_{\text{PP}} t'' \ [_{\text{TP}} \text{ before} \ [_{\text{CP}} t'' \ [_{\text{IP}} \text{ I} \ [_{\text{VP}} t' \ [_{\text{VP}} \text{ talk to} \ [_{\text{T}}]]]]]]]]
\item \([_{\text{CP}} \text{Who} \text{ did} \ [_{\text{IP}} \text{John get jealous} \ [_{\text{PP}} t'' \ [_{\text{CP}} t'' \ [_{\text{C}} \text{ before} \ [_{\text{IP}} \text{ I} \ [_{\text{VP}} t' \ [_{\text{VP}} \text{ talk to} \ [_{\text{T}}]]]]]]]]
\end{enumerate}

Since adjunct clauses are non-arguments, nothing would prevent the \textit{wh}-phrase \textit{who} from adjoining to the adjunct before moving into the Spec of the matrix \textit{C}. In (i) and (ii), \textit{wh}-movement crosses no barrier; there is no violation of the subadjacency condition. As a result, Chomsky's theory would wrongly predict that sentences like (2) are acceptable.

(5) Following Hoji (1986), we assume that the basic word order in Japanese is as follows:

\begin{enumerate}
\item \([\text{NP-ga} \ [\text{Adjunct} \ [\text{NP-o} \ V]]]]
\end{enumerate}

(6) We need (40) (ii) for the following reason. In structures like (i), we do not want the embedded subject position to be an extended complement of the matrix \textit{V} or the embedded \textit{C}:

\begin{enumerate}
\item \([_{\text{T'}} \text{SUBJ} \ [_{\text{T'}} \text{V} \ [_{\text{CP}} \text{ [T SUBJ} \ [_{\text{T}} \text{V COMPLEMENT}]]]]]]]
\end{enumerate}

Given (40) (ii), the embedded subject position is not an extended complement of the matrix \textit{V}, since there exist \textit{CP} and \textit{T'} which dominate the embedded subject, but not the matrix \textit{V}. The embedded subject position is not an extended complement of the embedded \textit{COMP}, either. This is because there exists \textit{T'} which dominates the embedded subject, but not the embedded \textit{COMP}.

(7) In English, if there is no VP-internal adverbs, complements will be immediately dominated by VP, as schematized below:

\begin{enumerate}
\item \([_{\text{TP SUBJ} \ [_{\text{T}} \text{V COMPLEMENT}]]]]
\end{enumerate}

One might argue that the complement in (i) is not contained by \textit{V'}, and thus does not count as an extended projection. Accordingly, the revised CED would wrongly predict that the complement in (i) is not legitimate extraction domain. Notice, however, that according to the definition of "immediate projection" (41), the immediate projection of \textit{V} in (i) is VP, since there is no \textit{V'} which dominates \textit{V}, but not VP. Hence, the complement in (i) is contained by VP, which is the immediate projection of \textit{V}, and counts as an extended complement.

(8) Let us assume that CP-adjoined positions, being [-L-related] positions, also count as operator positions only if the Spec of \textit{C} is already filled. Then, it seems reasonable to suppose that \textit{wh}-phrases, being [+operator] phrases, are also subject to this requirement. \textit{Wh}-phrases are driven by their morphological feature [+operator] to move into the Spec of \textit{C} or to adjoin to CP in order to satisfy their scopal properties. I cannot say for certain how we should deal with quantifier phrases, which are also assumed to have [+operator] features.

(9) This licensing condition on a subject-predicate relation applies before
Spell-Out as advocated in Williams (1980) and Rothstein (1983).

(10)  

\textit{mae}, \textit{ato}, and \textit{noti}, which are Japanese counterparts of \textit{before} and \textit{after}, are nouns, and they can take a complement clause, as exemplified below:

(i) Watasi-wa [[Mary-ga John-to konyaku suru] mae]-ni  
I-Top -Nom -with engagement make before-Dat  
[karera-ga iisshoni aruite-iru tokoro]-o mokugeki si-ta  
they-Nom together walking scene-Acc observation make-Past  
'I saw them walking together before Mary made an engagement with John'

Hence, extraction out of complement clauses of \textit{mae}, \textit{ato}, and \textit{noti} can be ruled out by the Complex NP Constraint, but not by the adjunct condition.

References


Huang, J. (1982) \textit{Logical relations in Chinese and the theory of grammar}. Doctoral
dissertation, MIT.