
Reviewed by Kaneaki Arimura, Konan University*

This book is an ambitious enterprise toward modification, extension, and reformulation of the government and binding theory of generative grammar. It consists of three chapters, each of which is based on an independent article originally written earlier, each in a different year. The purpose of this book is to show that there are “four major cases of A’-dependencies on the basis of their different behavior with respect to island conditions” (p. xiii), although there is no detailed discussion of (1d):

(1)  a. Successive cyclic Wh-movement; sensitive to both strong and weak islands

b. Long Wh-movement; sensitive just to strong islands

c. Apparent Wh-movement of NPs; selective violation of strong islands

d. Resumptive pronoun and sentence-initial phrase in left dislocation and relative clause constructions

Cinque starts with the cases of (1a) and (1b) in Chapter 1, aiming at the revision of Chomsky’s (1986b) notions of locality. A’-dependencies are divided into two parts: binding and government. The conditions on both cases are unified in terms of [+V], with the differences being reduced to the way of selection. Cinque tries to show the plausibility of the case of (1c), focusing in Chapter 2 on Clitic Left Dislocation (CLLD) in Italian, and in Chapter 3 on the parasitic gap construction, the apparent island violation, and the complement object deletion (COD) construction. This analysis necessitates an assumption that a wh-phrase can be base-generated and bind its “trace”. In Chapter 3, Cinque devotes himself to verifying his idea

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1 Strong islands are (i) a subject island, (ii) a complex NP island and (iii) an adjunct island, whereas weak islands are (iv) a wh-island, (v) an inner (negative) island, (vi) a factive island and (vii) an extraposition island.

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that what has been treated as a nonpronominal variable actually turns out to be a pronominal variable (i.e., A'-bound pro) in some cases.

In this review, I will discuss (i) the notion of referentiality in Section 1, (ii) Cinque’s locality condition in Section 2, with respect to the distribution of indirect questions in 2.1 and ECP in 2.2, (iii) the types of A'-binders, with special attention to heavy NP shift and scrambling, and (iv) the plausibility of A'-bound pro, focusing on the pronominal nature and on the treatment of the parasitic gap construction.

1. The Notion of Referentiality

Cinque makes a distinction between referential phrases and nonreferential phrases in order to account for the extractability of wh-phrases out of islands. He utilizes the notion of referentiality in the following sense: “whenever reference to members of a preestablished referential set is inherently impossible for some phrase, or hard to force, then, even if the phrase receives a referential θ-role, it will not be able to enter a binding relation with its trace” (p. 8). In this respect, he differs from Rizzi (1990: 86), for whom the distinction is based on the kind of θ-roles (referential θ-roles being agent, theme, patient, goal, etc., and nonreferential θ-roles being manner, measure, atmospheric, etc.). As a distinguishing property Cinque points out the coreference possibility:

(2) a. *[Gli alunni che dovevano visitare ogni museo] 
   the pupils who had to visit every museum 
   hanno finito per visitarlo in fretta. (C’s 1-(25b))

   ended up visiting it hurriedly

b. [Quelli di loro che hanno visitato tutti i musei] 
   those of them who have visited all the museums
   li hanno trovati uno più interessante dell’altro.
   them have found one more interesting than the other

(C’s 1-(31))

In (2), the nonreferential phrase ogni N’ does not allow coreferential reading in (2a) contrary to the referential phrase tutti NP in (2b). He argues that this distinction is reflected in the contrast in (3) (=C’s 1-(4a, b)):

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2 I adopt a special notation to clarify the source of the citation. For example, “C’s 1-(25b)” refers to an example of (25b) Cinque presented in Chapter 1.
The referential phrase to whom in (3a) undergoes long wh-movement in one swoop, because the Spec of the lower CP is already occupied by a wh-phrase, without causing much degeneration, but the nonreferential phrase how in (3b) results in ungrammaticality although the operation itself is the same. From this, or other similar cases, Cinque concludes that referential phrases are subject to binding while nonreferential phrases are subject to government.

At this point I would like to discuss the interesting facts noted by Déprez (1989: 469-70) (which she attributes to Pesetsky):³

(4) a. Bill spoke quickly, because Mary spoke that way.
   b. *Bill spoke that way, because Mary spoke quickly.
   c. Because Mary spoke that way, Bill spoke quickly.

Déprez presents (4) as evidence against Rizzi’s conception of referentiality. Rizzi (1990: 85-86) considers referential phrases are those which bear referential θ-roles (such as agent, theme, patient, experiencer, goal, etc.) while nonreferential phrases are those which bear nonreferential θ-roles. He introduces a “referential index” which is assigned to a phrase with a referential θ-role. In Rizzi’s system, what is semantically taken as nonreferential (for example, a quantifier or wh-phrase) is “referential” if it occurs at the subject position, and a manner adverb is nonreferential because it does not carry a referential θ-role. Therefore, since an adjunct quickly is unable to carry a referential θ-role or a referential index, it should not be subject to Condition C of the binding theory, because it regulates R-expressions. However, Déprez argues that (4b) is out because that way c-commands quickly and that (4a,c) are permitted because the c-command relation does not hold. She concludes that this fact is predicted “if adverbial expressions are subject to principle C and must generally be free” (Déprez (1989: 470)). In other words, she argues, the adverb quickly should bear a referential index.

However, notice that it is not always true that that way c-commands quickly in (4b). Consider the following VP deletion case:

(5) He talked to Mary at the party because she looked isolated, and I did too (because she was attractive).

³ An anonymous reader of English Linguistics brought my attention to the facts pointed out by Déprez.
This fact suggests that the because-clause is positioned higher than the VP constituent which embraces talked to Mary at the party. In the same vein, the phrase that way in (4b) belongs to a level different from that to which the because-clause belongs. Therefore, the most suitable example might be the following:

(4)  d. *That wayi Bill spoke because Mary spoke quicklyi.

In this case the c-command relation holds between the two relevant phrases.

The examples (4) make sense as far as they are intended to be counterexamples to Rizz’s framework because for Rizzi quickly is an adjunct which is never treated as referential. However, they do not make sense as counterexamples to Cinque’s framework. To quote again, “whenever reference to members of a preestablished referential set is inherently impossible for some phrase, or hard to force, then, even if the phrase receives a referential θ-role, it will not be able to enter a binding relation with its trace” (p. 8). This means that referentiality can be separated from referential θ-roles. This further means that there is even a case where an adjunct which bears no referential θ-role can be referential. Semantically, it refers to a particular aspect of the event described by a verb. This is the result we obtain by examining Déprez’s examples. Now we arrive at the following table.

<table>
<thead>
<tr>
<th>(6)</th>
<th>referential</th>
<th>nonreferential</th>
</tr>
</thead>
<tbody>
<tr>
<td>ref. θ-role</td>
<td>tutti i musei in (2b)</td>
<td>ogni museo in (2a)</td>
</tr>
<tr>
<td>non-ref. θ-role</td>
<td>quickly in (4)</td>
<td>how in (3b)</td>
</tr>
</tbody>
</table>

This is an interesting result which Cinque fails to notice or does not mention explicitly.4

2. Cinque’s Locality Conditions

Cinque proposes, following the spirit of Rizzi (1990), that Chomsky’s (1986b) ECP and Subjacency be reformulated so that redundancies and asymmetries may be eliminated. His basic tenets are that (i) the barriers for government and binding (or bounding) should be defined separately

4 I am indebted to Nobuo Nakashima (p.c.) for the discussions concerning referentiality in semantics.
and (ii) in both cases one barrier is enough. After a few stages of revision he arrives at the following definitions of barriers (p. 42):

(7) Definition of barrier for binding
   Every maximal projection that fails to be (directly or indirectly) 
   selected in the canonical direction by a category nondistinct 
   from [+V] is a barrier for binding.

(8) Definition of barrier for government
   Every maximal projection that fails to be directly selected by a 
   category nondistinct from [+V] is a barrier for government.

As an example of how (7) and (8) work, let us take up a “factive island” (C’s 1-(6)):

(9) a. To whom do you regret that you could not speak t?
   b. *How do you regret that you behaved t?

Because the wh-phrase in (a) is referential and that in (b) is nonreferential, 
the former is subject to binding (7) and the latter to government (8). 
Cinque assumes (p. 30) the factive complement is not “dominated by V’, as 
ordinary direct object” and so it is selected indirectly, but not directly, by 
the verb. Therefore, it constitutes a barrier for government in (9b) but not 
a barrier for binding in (9a).

Now I will point out Cinque’s important theoretical contributions. (i) 
The barriers for government and binding are defined in the same terms 
(i.e., selection by [+V]) while the ineliminable difference is reduced to “(1) 
direct selection for government versus direct or indirect selection for binding, 
and (2) the canonical direction requirement, holding of binding” (p. 42).  
(ii) VP adjunction is eliminated. VP is not a barrier because it is 
selected by the I head of IP which is nondistinct from [+V]. (iii) There is 
no need for the stipulation that IP is a defective category, but rather it is 
always c-selected by the C head which is nondistinct from [+V]. 
Concomitantly, the notion of an inherited barrier is no longer necessary.  
(iv) There is no need for the Minimality Condition of Chomsky (1986b: 42).  
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\[\text{Chomsky's Minimality Condition:} \]

\[\text{(i) \gamma is a barrier for } \beta \text{ if } \gamma \text{ is a projection, the immediate projection) of } \delta, \text{ a zero-} \]

level category distinct from } \beta. \]
such as *How did John announce [a plan \([CP^* t^2 \text{ to } [t^1 fix the car t]]\)\]? in terms of the Minimality Condition. In this case, the wh-phrase fails to govern the trace \(t^2\) in \(CP^*\) because “plan protects \(t^2\) from government”. However, in Cinque’s system, \(CP^*\) constitutes a barrier because plan, a \([-V]\) category, does not directly select (or L-mark) it. (v) One barrier crossed is enough to produce ungrammaticality in both the binding case and the government case. Hence there is no need for the unnatural asymmetry in counting the number of barriers (i.e., 1 barrier for government, 2 barriers for Subjacency) in the Barriers system.\(^7\)

2.1. Selection and the Distribution of CPs

Notice that Cinque utilizes the notion of “direct selection” which, for lexical categories, will ultimately mean direct s-selection and, for non-lexical categories, will mean direct c-selection” (p. 41). For example, let’s take a verb persuade. According to Chomsky’s (1986a) notion, this verb s-selects a goal and a proposition, whose canonical structural realization is an NP and a clause (as in persuade John to leave), respectively. In this case, the goal is referred to as directly selected and the proposition as indirectly selected. To put it in the terminology used in the Barriers system, the former is L-marked while the latter is \(\theta\)-marked but not L-marked. As for the non-lexical categories, the head C directly c-selects IP and I directly c-selects VP (in X’-theoretic terms).\(^8\) Thus, “indirect selection” and “direct selection” are intended to roughly correspond to “\(\theta\)-marking” and “L-marking”, respectively.\(^9\)

\(^7\) Cinque subsumes Subjacency (the theory of bounding) under binding. He points out the following grammatical sentences (C’s 1-(144)) which would be ruled out as a Subjacency violation:

\begin{enumerate}
\item a. A car that, I wouldn’t know who to ask how to fix it ...
\item b. ?These are the only vegetables which, I don’t know where to find out how to plant it.
\end{enumerate}

Since wh-islands have a common property that they are selected by a matrix verb, in Cinque’s framework there should not be a barrier in (i).

\(^8\) L-marking and \(\theta\)-government are defined in Chomsky (1986b: 15) as follows:

\begin{enumerate}
\item \(\alpha\) L-marks \(\beta\) iff \(\alpha\) is a lexical category that \(\theta\)-governs \(\beta\).
\item \(\alpha\) \(\theta\)-governs \(\beta\) iff \(\alpha\) is a zero-level category that \(\theta\)-marks \(\beta\), and \(\alpha, \beta\) are sisters.
\end{enumerate}

\(^9\) To be more exact, “direct selection” does not always correspond to “L-marking”, because the former includes any category, lexical or non-lexical, but the latter includes only lexical categories. By taking C and I categories as nondistinct from \([-V]\), unification becomes possible in terms of selection by \([+V]\).
Now let us take special notice of Cinque's use of the expression, "a category nondistinct from [+V]." This of course includes [+V] categories: adjective and verb. This means that a complement selected by an adjective or a verb is not a barrier. Furthermore, he treats the heads of the functional categories, CPs and IPs, as categories nondistinct from [+V]. His primary motivation comes only from the observation that, "I and C, if not intrinsically [+V] categories, are at least compatible with [+V] elements (witness their ability to host verbs in some languages)" (p. 41). If they are [+V], then we will be able to eliminate the barrierhood from their respective complements, IP and VP.

A difficulty seems to arise here with respect to the distribution of the clauses. Judging from the account in this book, it seems that Cinque does not make any distinction between the that-clause and the indirect question. But, in fact, there is an important difference between these two types of clausal structures: the latter occurs at Case-marked positions, contrary to the former, which fails to occur at Case-marked positions (Stowell(1981)). In Arimura (1991), I argued that this empirical difference is brought about by the nature of the C head of CP. To be more specific, I assume, with Chomsky (1986b), that the content of the C head of CP is determined by the functioning of Spec Head Agreement (SHA, hereafter). If wh-movement occurs, the C head of CP becomes [+wh] via SHA. Given the assumption that the [+wh] feature is nominal (i.e., [+N]), the indirect question is taken to be an NP, in effect, which, therefore, is subject to the regulations of the Case filter. On the other hand, if wh-movement is not involved, there is no feature specification with respect to [+/−N], and hence the complement fails to receive Case.

However, there is a conceptual problem to an approach in which the categorial status of CP is determined by the function of SHA. Consider (10b, c):

(10) a. Did you go to New York last week end?
   b. Where did you go last week end?
   c. I don’t know where you went last week end.
   d. *I don’t know where did you go last week end.

(10a) is as predicted because the C head of CP is occupied by a raised verb, and so is immune from the regulations of the Case filter. But, just as the complement CP is Case-marked in (10c) due to the [+wh] at the C head of CP, the matrix CP in (10b) should be Case-marked, but nothing triggers Case-marking (Howard Lasnik, p.c.).
In order to explain the differences noted above, we assume that SHA is optional. If it applies in (10b), then the clause is an NP but is excluded as ungrammatical because it is not Case-marked. If it does not apply, then the clause does not constitute an NP and hence is no longer subject to Case Filter. Furthermore, this accounts for the apparent fact that the matrix sentence has nothing to do with selection. On the other hand, in a complement sentence such as (10c), the picture is reversed. It must be both Case-marked and selected. These requirements are simultaneously satisfied by the functioning of SHA. The C head of the complement sentence is occupied by a [+wh] feature, which is taken as a noun. However, in the complement of (10d), the C head is occupied by a verb and therefore SHA does not apply. This entails a violation of the Case requirement and the selectional restriction of the matrix verb.10

One of the motivations for the assumption that the functional heads, C and I, are nondistinct from [+V] is that IP and VP are the complements of the category which is nondistinct from [+V], like an object or a complement CP of the verb (e.g., *know him*, or *know that he is honest*). By these measures, we can dispense with Chomsky’s (1986b) unnatural assumptions that (i) a barrier is defined by inheritance (i.e., IP inherits barrierhood from VP when it is a barrier) and (ii) the barrierhood of VP is dispensed with by adjunction (i.e., VP adjunction). Cinque succeeds in eliminating the unnaturalness by stipulating that C and I are members of the categories which are nondistinct from [+V]. However, as I showed above, it is more plausible to say that the categorial status of CP is determined in a relative sense; that is, it depends on the presence or absence of wh-movement taking place in the complement CP.

If we do not assign the status of [+V] to the functional categories, C and I, then how can we eliminate the barrierhood of IP and VP? Here we might be able to utilize the notion of agreement, as it is argued by Dépréz (1989). She proposes a notion in which the functional categories, C and I, L-mark IP and VP, respectively, through the C/I and I/V agreement (i.e., Agreement Rrinciple). Or, we might simply assume that complements are

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10 In order to explain this disparity in (10), we could follow Pesetsky’s (1989) idea, in which it is assumed that the complement clause is a CP while the matrix clause is an IP but not a CP. This idea is coupled with the assumption that the subject is positioned at the Spec position of VP at D-structure. I will not pursue this line of reasoning, but it seems the assumptions made in the text can be easily translatable into this framework.
not barriers whether the selecting heads are lexical or functional.\footnote{11}

2.2. ECP

Following Rizzi (1990), Cinque argues that the "identification" portion of the ECP enters into definitions of the barrier, and therefore the remaining job of the ECP is the "formal" licensing portion. The ECP is, in effect, reduced to a head-government requirement as in (11):

(11) A nonpronominal EC must be properly head-governed by a head nondistinct from [+V].

This means that a $[-V]$ element (i.e., a noun and a preposition) fails to be a head governor. Consider (12) (=C's 1-(119)):

(12) a. *Il presidente, al quale ho sentito [NP un appello ti],
the president to whom I heard an appeal
alla radio, ...
on the radio

b. *Gianni, il quale ho parlato [PP con ti], ...
Gianni whom I spoke with

c. *Gianni, da cui ci comportiamo [ADVP diversamente ti], ...
Gianni from whom we behave differently

These cases are excluded by the modified ECP (11): the heads are distinct from $[+V]$ since they are a noun in (12a), a preposition in (12b) and an adverb in (12c). But prepositions of the stranding languages (e.g., English) are underspecified with respect to $[+/-V, +/-N]$ features; that is, they "govern and assign Case like verbs" (Kayne (1984)) because they are not distinct from verbs (i.e., $[-N]$ but not specified with respect to the V feature) (see Rizzi (1990: 109)). Therefore, in English, if extraction out of a PP is ungrammatical, then the PP should be counted a barrier because it is not selected.\footnote{12} Consider the contrast in (13):

(13) a. Who is Max disgusting to?
b. *What is Max tall for? (Max is tall for a child.)

\footnote{11} The reason VP was taken as an inherent barrier is not empirical but theoretical. Just as NP constitutes a barrier when it is not L-marked, VP is a barrier unless L-marked. However, the I head of IP is not lexical and presumably does not $\theta$-mark VP even though the I head c-selects it.

\footnote{12} This renders the reanalysis process superfluous and, actually, this move may prove plausible, given the case in (i):

(i) I spoke angrily to the men about each other.

(duo to Chomsky (1981: 226, fn. 37))
The PP should be taken as “L-marked” by disgusting in (13a) but not by tall in (13b). In any event the contrast hinges on whether the PP is selected or not.

Notice that there is a case where an N category looks like a head-governor in the sense of (11). The relevant examples are given in (14), in which the copular construction is involved:

\[(14)\]
\begin{align*}
  a. \quad & \text{[Of which country] is Caraccas [the capital of]?} \\
  b. \quad & \text{This is the club [of which] John has been [a member since 1980].}
\end{align*}

Although we can say some process of restructuring takes place in cases such as Of whom did he see a picture? (Chomsky (1977: 114ff.)), and some special interpretation of whole-part relation is available for the preposed PP in the Spanish case [De cual de estas ediciones] no sabes si hay traducción francesa? (Of which of these editions don’t you know whether there is a French translation?) (Chomsky (1986b: 45)), there seem to be no such possibilities in (14). Then, these should be excluded according to Cinque’s hypothesis.\(^\text{13}\)

Here I suggest that there are two ways to solve this problem. The first is to assume that the predicate nominal is not a full NP but a neutral category [+N] in which there is no specification with respect to the feature [+V], as was suggested in van Riemsdijk (1983). If this is the case, the trace in (14) is governed by the [+N] category which is not distinct from [+V] (though not the same). The other way is to reconsider the account of the grammati-

\(^{13}\) Nakajima (1991: 292–293) tries to account for this phenomenon together with the usual leftward movement. He assumes that “the initial member of a binding path must be s-associated,” where s-association is defined as: A is s-associated with X\(^i\) if A is sister to X\(^i\), where i is 0. This condition seems to be similar to the head-government condition of the ECP, but, contrary to Cinque, he does not impose conditions on the elements which occur in the binding path. He further extends the scope of S-association by introducing the following definitions:

(i) A is s-associated with X\(^i\) if A is sister to X\(^i\), where

(a) \(i = 0\) when A is a wh-trace.

(b) \(i \geq 0\) when A is RM (rightward movement) trace.

By this revision, it is possible to account for extraposition from the relative clause (ii), and the ungrammatical (iii) if “P is excluded from the set of S-associator for RM”:

(ii) John bought [a book that] last week [which discusses the origin of language].

(iii) *Mary read [a review of that] recently [John’s new book about Chinese cooking].
Cinque utilizes the restructuring process presented by Chomsky (1977). It is undoubtedly unnatural, however, to suppose that the same restructuring process occurs in the copular construction. Instead, if we reinterpret the reconstruction process as a coindexing process which takes place between the verb and its complement, then we can regard the coindexed expression as a sort of “complex verb”. If we generalize this coindexation to the copular construction, then the copula and the predicate nominal form a “complex verb” which successfully head-governs the trace in (14), satisfying the ECP.14

3. Types of A'-Binders

In chapter 2, Cinque treats an intriguing phenomenon of clitic left dislocation (CLLD) which is peculiar to Romance languages. In CLLD, a clitic is optional except for an object clitic.15

(15) a. A casa, non (ci) sono stato ancora. (C’s 2-(37a))
    home not (there) I am been yet

b. Gianni, *(lo) vedrò domani (C’s 2-(37e))
    Gianni (him) I will see tomorrow.

Cinque presents evidence which suggests that CLLD does not involve *wh*-movement in spite of the apparent parallelism with topicalization. According to Cinque’s analysis, there is a chain where the base-generated left-dislocated phrase A’-binds a clitic or an EC. In order to distinguish the optionality or obligatory of a clitic, Cinque (p. 73) shows the following definitions of a variable and an operator.

14 The view stated above is entirely compatible with the small clause analysis of the copular construction (Stowell (1978)). According to this approach, the S-structure of (14a) would look like (i) (where the definite article is ignored):

( i ) [Of which country]i is Caraccasj [SC ti [N capital tj]]?
The *wh*-trace ti is head-governed by the predicate nominal which is [+N] (nondistinct from [+V]). Or coindexation of the copula (a head of the matrix VP) and the predicate nominal (a head of the embedded SC) is made possible by the head-to-head relation. This enables predicate nominal to govern the trace in question.

15 This construction resembles topicalization, but contrary to CLLD, topicalization never allows a resumptive pronoun:

( i ) *GIANNI, l’ho cercato, non Piero.  (C’s 2-(9))
    Gianni (focus) I looked for not Piero

Topicalization is a construction which involves *wh*-movement, or, more specifically, null operator movement. Therefore (i) is in violation of the ban against vacuous quantification.
(16) \text{Variable} = \text{def} \ [\text{NP} e] \ in \ A\text{-position} \ locally \ A'\text{-bound} \ and \ operator-bound.

(17) \text{Operator} = \text{def} \ bare \ quantifiers, \ \text{wh-phrases}, \ and \ null \ NPs \ in \ Spec \ CP.

After briefly reviewing the motivations which lead him to (16) and (17), I should like to discuss a potential problem.

Cinque argues that “a number of general principles converge, when the EC is an NP, to exclude the option with no clitic” (p. 72). Further, he discusses the ungrammatical case corresponding to (15b) where the clitic is absent (i.e., the position is occupied by an EC). We have four options as an EC in (15b) with respect to the feature combination: (i) \ [+pronominal, +anaphor] (PRO), which is excluded by the simultaneous application of the binding condition A and B, (ii) \ [+pronominal, +anaphor] (NP trace), which is ruled out because it is unbound in its governing category, (iii) \ [+pronominal, +anaphor] (pro), which is excluded because of the failure to be properly identified (to be more specific, it is neither licensed by Agr (since it is an object) nor by A'-binding). The remaining possibility is \ [+pronominal, +anaphor] (variable). Cinque argues that the EC in (15b) cannot be a variable on the basis of the definitions given in (16) and (17). The alleged antecedent, Gianni, fails to satisfy (16): that is, it cannot be a bare quantifier, a \text{wh}-phrase, or null NPs in Spec CP. On the other hand, if the EC under consideration is a non-NP, which is not characterized in terms of the feature composition above, nothing requires it to be one of the four possibilities: hence the optionality in (15a).

From the definition (16) we predict that if the left-dislocated phrase is a quantifier (a member of the operators) an operator-variable relation arises, as in a topicalization case. On the other hand, if a resumptive clitic occurs in this case, then it is excluded by the ban against vacuous quantification. Hence the following contrast.

(18) a. Qualcosa, farò (non preoccuparti).
    something (or other) I will do (don’t worry)
    (C’s 2-(43a))

    b. Qualche sbaglio, ogni tanto, *(lo) fa anche Gianni.
    some mistake every now and then it makes also Gianni
    (C’s 2-(44a))

In (18a), since the left-dislocated phrase is a quantifier, there should be a variable bound by it. On the other hand, in (18b) the left-dislocated phrase is a “quantified NP,” which is referential or D-linked (Pesetsky (1987)), but
not a quantifier, and therefore there must be a resumptive clitic, or the EC cannot be identified.\(^\text{16}\)

However, it seems that there are at least two types of constructions whose properties Cinque’s classification of the A’-dependencies fails to capture: scrambling and heavy NP shift. Cinque says that the scrambled phrase and the shifted heavy NP “must count as an operator” (p. 182, fn. 21), although he leaves the question open. The following cases suggest that scrambling and heavy NP shift create an A’-dependency.

\[\text{(19a)}\] a. ??[Masaoi-no hako-ni] \[karei-ga ti hamaki-o ireta\] (koto)  
-gen box-in he-nom cigar-acc placed fact  
‘[In Masao’s box, he put cigars \(t_i\).]’  
(Saito’s (1992) (48a))

b. Susan always flies \(t_i\) without reading \(e_i\) properly, [all the memos form the lowlevel administration].  
(Engdahl’s (1983) (27))

(19a) shows what Saito calls “the Condition (C) reconstruction effect”. This is one of the properties of A’-dependecies (although it does not necessarily prove that “movement” does take place). In (19b) a parasitic gap is licensed by the shifted heavy NP. The real trace in (19), therefore, must be counted as a variable. But it is highly implausible to regard the relevant NPs as operators in the sense defined in (16), though it seems to be true that they A’-bind their original traces. For Cinque an A’-dependency is taken to be an operator-variable relation; that is, whenever A’-dependency arises, there must be an operator and a variable which it binds. In many cases, this hypothesis holds true, but the existence of these two construc-

\(^{16}\) Cinque (pp. 79-86) shows an interesting fact that negation salvages the sentences as in (i):

(i) a. Per questa regione, ha detto che *(non) se ne andrà \(e_i\).  
(C’s 2-(59a, 60a))

for this reason he said that not he will leave

b. In modo definitivo, ha detto che *(non) l’aggiusteria \(e_i\), prima o poi.  
in a definitive manner he said that not he will fix it sooner or later  
(C’s 2-(59b, 60b))

He tries to account for this phenomenon by assuming that amalgamation of a null operator with a negation takes place at LF: by this process the null operator acquires quantification force, which is a characteristics of an operator, like a topicalized phrase (in Italian).
tions casts some doubt on Cinque’s characterization of A’-dependencies. It seems, then, better to say that A’-dependency arises when a phrase in A’-position binds a variable.

4. A’-Bound Pro

In chapter 3, Cinque attempts to verify his claim that the empty category e in (20) (=C’s 3-(1)) is not a pure variable (A’-bound [-pronominal, -anaphor]) but a pronominal variable (A’-bound [+pronominal, -anaphor]) which enters “what may be conceived of as a kind of (empty) resumptive pronominal strategy” (p. 98):

(20) a. (?)The article that we filed without reading e ...
b. (?)The article that we went to English without reading e.
c. The article was too long for us to read e.

The EC in (20a) is a parasitic gap, that in (20b) a gap of apparent (NP-) extraction from islands, and that in (20c) a gap of the complement object deletion (COD) construction. Furthermore, he presents an analysis where an empty operator is base-generated in Spec CP, coindexed with a base-generated pro at S-structure. The following are supposed to be the S-structure representations (p. 116):

(21) a. The article [[Oi that [we filed ti [without reading proi]]]]
b. The article [[Oi that [we went to England [without reading proi]]]] ...
c. The article was too long [Oi for [us to read proi]].

The relation between the base-generated operator and pro is determined by the free indexing mechanism which comes into play at S-structure. The identification of a pro takes place through A’-chain again at S-structure.

17 Cinque says that the structures of (21) contains a base-generated empty operator in Spec CP. But the intended structure of (21a) is not always clear. The null operator seems to bind two ec’s simultaneously. If so, it may have been moved from the real gap position (in this case the operator is not base-generated), or it may have been base-generated (in this case the real gap too is indexed by free indexing). Or otherwise, are there two distinct operators—the one binding the real trace and the other binding the pro—which are finally indexed by free indexing at S-structure (like [cp whoi [C’ Oj [ip ... ti ... [cp ... ej ...]]]]? My understanding in this review is that the null operator is base-generated in the cases (21b, c) while movement of the operator (null or overt) in the case (21a) creates the structure in which it serves as an antecedent both for the real gap and the parasitic gap.
4.1. Pronominal Nature

The assumptions that ECs in (20) are resumptive pronouns lead us to expect that they show the same distribution as that of a pronoun, but not that of a variable which is nonpronominal. In this subsection I am concerned with whether Cinque is successful in explicating the pronominal status of the empty categories in question. First let us consider (22):18

(22) a. *Books is not easy [to give (even) the man e\textsubscript{i}].

b. What\textsubscript{i} did you give that man e\textsubscript{i}?  

Cinque argues that this contrast weakens the wh-movement analysis in which both ECs in (22) are equally taken as a variable. He attributes the low acceptability of (22a) to some "output conditions" conceived by Oehrle (1976) to the following effect: given the sequence V NP\textsubscript{1} NP\textsubscript{2}, NP\textsubscript{2} must be higher on the scale of prominence than NP\textsubscript{1}.19 If e\textsubscript{i} is taken as a pronominal, then the low acceptability of (22a) is related to (23a), where the full noun is more prominent than the pronoun. And the fact that it is rescued by changing the first object into a pronoun as in (23b) is explained in the same terms because of the equal status of the two objects:

(23) a. *I gave that man it/them.

b. Books\textsubscript{i} are not easy [to give him e\textsubscript{i}].

This simple account is interesting, but I wonder whether Cinque succeeds in fully making clear the pronominal nature of the empty category in (22a). Notice that the first object of the COD construction cannot be an empty category, as in (24a), nor is the overt wh-movement of the first object allowed, as in (24b):

(24) a. *John\textsubscript{i} is not easy [to give e\textsubscript{i} presents].

b. *Who\textsubscript{i} did Mary [give e\textsubscript{i} the books]?

This parallelism seems to suggest that the ECs in both cases are the same. However, even if we concede that these are different, as Cinque argues, the former sentence casts doubt on the explanation based on the output condi-

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18 There are some speakers who accept both of the sentences in (22), making no particular distinction between (a) and (b). This fact seems to weaken Cinque's arguments for the existence of A'-bound pronominal.

19 The hierarchy of prominence is defined as follows, where "a lower number reflects lower prominence" (pp. 123-124):

tion. If the empty category of the former sentence is pronominal, then the
pronoun-noun sequence should be ok, as is exemplified by John gave her
the books.

Second, let us consider why the following sentence is ungrammatical:

(25) *?Someone who John expected [_{cp} [e_1 would be successful
though believing [e_2 is incompetent]]] (C's 3-(26a))
The first gap \( e_1 \) is created by overt wh-movement and the second gap \( e_2 \) (a
pronominal variable), Cinque argues, renders the sentence ungrammatical.
In this case, the pro in the subject position is identified by being A*-bound.
But Cinque argues that “pro must be formally licensed by a head” (p. 120).
There are three possibilities. (i) Pro remains as it stands. But in this case,
it is not head-governed because C is not an appropriate head governor both
in English and Italian (see Rizzi (1990)). (ii) Pro is raised to Spec CP,
creating the structure V \( [_{cp} \text{pro}_i \ [_{ip} \text{ti} \ldots] \) ... Although pro itself is head-
governed by V (believing in (25)) its \&-features fail to be identified
because it is not in A-position. (iii) Pro is bound by a gap as in \( [O_i \ldots \ \text{V}
\ [_{cp} \text{EC}_i \ \text{AGR}_i \ [_{ip} \text{pro}_i \ldots] \) ... In this case Spec Head agreement coindexes
EC and AGR, which head-governs pro. But “the EC ... will receive no
interpretation at LF, in violation of Chomsky's (1988) economy require-
ment (as discussed by Rizzi (1990: 98))” (p. 120).

As is clear from the account outlined above, Cinque’s tacit assumption
appears to be that pro must be head-governed. Head-government is a for-
mal licensing requirement on empty categories. However, is it the case
that this requirement is the same as that imposed by the ECP? If Cinque
takes the requirement above to be the same as the ECP, then a contradiction
arises, because the ECP is defined on the basis of “nonpronominal” empty
categories, although the pro in question is [+pronominal, –anaphor] at S-
structure (in fact, throughout) (p. 115). If he takes the head-government
requirement on pro and that imposed by the ECP to be different, there are
two similar principles which regulate the “pronominal” ECs, on the one
hand, and the “nonpronominal” ECs, on the other. This situation seems to
bring about a redundancy in linguistic theory.

Third, Cinque (p. 151) attributes the lack of weak crossover (WCO) in
(26) (=C's 3-(167)) to the pronominal nature of the empty category:

(26) a. John_\(i\) should be easy to persuade his_\(i\) mother to vouch for \(e_i\).
b. John_\(i\) is too stubborn for his_\(i\) mother to vouch for \(e_i\).
c. John_\(i\) is not honest enough for his_\(i\) mother to vouch for \(e_i\).
As confirming evidence, he presents a relative clause with a resumptive
The boy, who we don’t know whether his parents died after sending him to college ...

(C’s 3-(168)) Pro is immune from WCO effects in the same way as the resumptive pronoun. However, the immunity of WCO is seen in the cases of topicalization, non-restrictive relative clauses in English and restrictives relative clauses in Japanese, and clefting (as shown by Tajima and Arimura (1988: 364)):

(28) a. ?John, I have never asked his mother to talk to ti.
   b. ?The man, who his mother loves ti flunked the exam.
   c. ?It is John, that his mother drove ti mad.

   b. [zibun-no oya-ga ti uttaeta] otokoi-ga zisatu-sita (koto) self-gen parents-nom sued man-nom killed himself fact ‘(the fact that) the man that self’s parents sued committed suicide’
   c. [zibun-no misu-ga ti inotitoridatta] nowa Taro, -da. self-gen mistake-nom were fatal CM -is ‘It is Taro that self’s mistakes were fatal.’

Within Cinque’s framework, these constructions involve null operator movement and, therefore, the gaps in both sets of sentences are non-pronominal. These sentences, therefore, should be of the same grammatical status as (30), where overt wh-movement takes place:

(30) a. *Who does his boss dislike ei?
   b. *Which man did you say his boss dislike ei?

On this point, Cinque (p. 199, fn. 59) stays obscure and only acknowledges the need for a “different treatment”. Lasnik and Stowell (1991: 703ff) try to solve this dilemma by partitioning the variables into two types: a gap bound by a lexical operator is called a true variable and a gap bound by a null operator is called a null R-expression with binding properties analogous to those of names and definite descriptions (“epithets”). Because topicalization, appositive relative clauses in English and restrictive relative

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20 CM stands for a cleft marker.
clauses in Japanese, and clefting all involve null operator movement, it follows that the sentences in (28) and (29) do not exhibit weak crossover effects.

From the three points above, we can say that it is not always clear if Cinque succeeds in showing the pronominal status of the gaps in a parasitic gap construction, in the case of apparent (NP-)extraction from islands, and in the COD construction.

4.2. Parasitic Gap Construction

The gaps in (20) are sensitive to islands, an aspect which suggests that movement is involved in the constructions at hand. To account for this, Cinque proposes an analysis in which “a pro unmoved in the syntax must move at LF, either by itself or within a larger phrase under pied piping” (p. 136).21 “The ‘larger phrase’ is a g-projection of the governor of pro (or wh-phrase [in the case of syntactic pied piping]), in the spirit of Kayne (1984)” (p. 140). In addition, he follows Longobardi (1985: 170-171), where Kayne’s (1984: Ch. 8) Connectedness Condition (CC) is extended to include a requirement that each intermediate maximal projection should not only be in a canonical government configuration but also be properly governed.22

(31) Definition: Y is a g-projection of X iff

\[ a. \quad \text{Y is a projection of X (in the usual sense of X'-theory) or of a g-projection of X} \]
\[ b. \quad \text{Y immediately dominates W and Z, where Z is a maximal projection of a g-projection of X, and Z is selected in the canonical direction by W, or is predicated of W.} \]

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21 Cinque argues that the adjunct nature of α in (33), which is to be pied piped in LF, seems to suggest that the pied piping creates a government chain. If so, it is predictable that parasitic gaps are sensitive to both strong and weak islands.

22 Kayne’s (1984: 167) original definition corresponding to (31b) runs as follows:

( i ) \( X \) is a structural governor and \( Y \) immediately dominates \( W \) and \( Z \), where \( Z \) is a maximal projection of a g-projection of \( X \), and \( W \) and \( Z \) are in a canonical government configuration.

“Government” in (i) is replaced by “selection” (but there is not a [+V] requirement here as distinct from the definitions made of barriers (7), (8) and of head government (11)), and the phrasing “or is predicated of W” is added.
Let us look at (32) and (32) to see how (31) works.

(32) *Piero, che abbiamo convinto \( t \) 
    Piero who we convinced 
    che [invitare \( e \)] ci è impossibile, ...
    that to invite is impossible for us

(33) *I capi di bestiame che abbiamo eliminato \( t \) \( \alpha' \) senza cercare
    the head of cattle that we have eliminated without even trying
    di chiamare un veterinario [\( \alpha \) invece di abbattere \( e \)]
    to call a vet instead of salughtering

The example (32) is excluded by (31) because the g-projections of the
 governor of the parasitic gap (i.e., pro) are not “selected in the canonical
direction” by the verb. In (33) the g-projection of the governor of the
 parasitic gap extends to the lowest \( \alpha \), but it fails to be connected with the
 g-projections of the governor of the real gap because the first adjunct \( \alpha' \)
fails to be selected. On the other hand, the usual parasitic gap construction
 such as [Which paper did John file \( t \) \( \alpha \) without reading \( e \)]? is gram-
   matical because the g-projection of the governor of the parasitic gap, which
 stops at the adjunct clause \( \alpha \), can be connected with those of the real gap.

In relative clauses, the relative head does not select the relative clause,
but the resultant sentence is not ungrammatical, though relatively more
marginal in its status than the corresponding adjunct cases.

(34) Un libro che [\( \alpha \) quelli [\( \alpha \) interessati a leggere \( e \)]
    one book that those interested in reading
    potranno trovare \( t \) presso la segreteria del dipartimento ...
    will be able to get from the secretary of the department

(C’s 3-(143a))

In order to account for this case, the phrasing “is predicated of” is added in
(31b). The relative clause (=Z (i.e., \( \alpha \))) is predicated of the relative head
(=W) and, therefore, the entire NP (=Y (i.e., \( \alpha' \))) becomes a g-projection of
the governor of the parasitic gap. The NP \( \alpha' \) is pied piped to the operator
position, crossing no barrier.

This explanation seems to suffer from a difficulty when we take into con-
sideration the following examples adopted from Chomsky (1986b: 58):

(35) a. He’s a man that [\( \alpha \) everyone [\( \alpha \) who gives presents to \( e \)]
    likes \( t \).

    b. *This is a book that [\( \alpha \) any man [\( \alpha \) to whom we’ll give \( e \)]
    will like \( t \).
In both cases of (35) the g-projection of the governor of the parasitic gap extends to $\alpha'$ (a complex NP) via predication (in the sense that the relative clause is predicated of the relative head). Thus, in (35a) $\alpha'$ is pied piped to the operator position, again crossing no barrier. But (35b) creates a problem for this approach, because this should be also predicted to be grammatical. The minimal difference between these cases lies in the kind of the relative pronoun chosen: the subject who in (35a) but non-subject to whom in (35b). Following Chomsky's (1986b) Vacuous Movement Hypothesis, we can say that the Spec CP position of the relative clause in (35a) is empty at S-structure whereas that in (35b) is already filled at S-structure. The null operator analysis of the parasitic gap construction allows us to argue that the null operator in (35a) has a slot to move to, whereas that in (35b) does not. On the other hand, in Cinque's analysis, there is no operator involved in the relative clause $\alpha$ in (35) which forms an A'-chain with the parasitic gap and, therefore, there is no way to tell that (35b) is ungrammatical.

Finally, as Lasnik and Stowell (1991: 705–706) suggest, the following sentences are taken to be ambiguous in certain dialects:

(36) a. Who did [Mary's stories about e] amuse t?

b. Who did you give [your picture of e] to t?

They can be interpreted as “normal” parasitic gap constructions: the answer to (36a) is “Mary's stories about Tom amused him”. Another reading is the one in which “multiple question interpretation” is obtained: the answer is “Mary's stories about Tom amused John.” The latter interpretation lends support to the null operator movement hypothesis, because the two empty categories are associated with the different operators. If the operator in the matrix CP happens to be coindexed with the null operator, then the usual parasitic gap reading results. If it does not, then a multiple question reading is obtained. This ambiguity is totally unpredictable in Cinque's analysis.

5. Conclusion

I have reviewed and discussed Cinque's main arguments and presented what seem to be potential problems in his theory. His argument is extensive, including various aspects of Italian (and English) syntax and providing new findings, suggestions, and insights which undoubtedly help push back the horizon of linguistic theory, specifically in the domain of A'-dependencies. However, although Cinque's locality conditions are well-
motivated and have achieved a considerable level of plausibility, I am not sure whether he succeeds in showing that an A'-bound pronominal should be counted as a member of the set of empty categories. When we take into consideration a null operator movement analysis of the relevant constructions, it seems dubious that Cinque's A'-bound pro analysis supersedes the analysis which is based on null operator movement.

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