

1993

Expletive Replacement and Quantifier Scope

Jun Abe

University of Connecticut

Follow this and additional works at: <https://scholarworks.umass.edu/nels>



Part of the [Linguistics Commons](#)

Recommended Citation

Abe, Jun (1993) "Expletive Replacement and Quantifier Scope," *North East Linguistics Society*. Vol. 23 :
Iss. 1 , Article 2.

Available at: <https://scholarworks.umass.edu/nels/vol23/iss1/2>

This Article is brought to you for free and open access by the Graduate Linguistics Students Association (GLSA) at ScholarWorks@UMass Amherst. It has been accepted for inclusion in North East Linguistics Society by an authorized editor of ScholarWorks@UMass Amherst. For more information, please contact scholarworks@library.umass.edu.

Expletive Replacement and Quantifier Scope

Jun Abe

University of Connecticut

Chomsky (1986) proposes that an expletive must be replaced by the argument associated with it under a general principle of Full Interpretation for Logical Form, since expletives have no semantic content. Thus, (1a) becomes (1b) at LF via expletive replacement:

- (1) a. there is a man in the room
b. a man_i is t_i in the room

The movement applied in (1b) is exactly the same as standard NP movement except that it takes place at LF. This analysis captures some important properties of expletive *there* quite nicely. It must be associated with some element in the clause, since *there* has to be some element that could replace it. The relevant association must be local, since the element that is associated with the expletive creates an A-chain via expletive replacement and, as is well-known, an A-chain is strictly local because a variety of local conditions are operative to this chain (such as Condition A of the binding theory and/or the Empty Category Principle (ECP)).

However, this approach has a serious problem with respect to quantifier scope under the standard assumption that scope relations are expressed at LF. As May (1977) observes, a sentence like (2a) is ambiguous with respect to scope relations between *someone* and the predicate *likely*. However, (2b) only has the reading where the predicate has scope over *someone*:

- (2) a. Someone_i is likely to be t_i here.
 b. There is likely to be someone here.

This is a mystery according to an expletive-replacement approach, since the two sentences have exactly the same LF representations after expletive replacement takes place; namely, a representation like (2a). This paper is concerned with this problem. To be more specific, the purpose of this paper is to defend an expletive-replacement approach by giving a solution to the problem. In so doing, I argue for the claim that the English *be* is a Case-assigner, assigning what Belletti (1988) calls partitive Case, a claim that is further supported by Lasnik (1992). I will first outline Lasnik's (1989; 1992) theory about expletives, which I assume in this paper, in the following section.

1. Lasnik (1989; 1992)

One of the problems with expletive *there* is how to express its relationship to the associated argument. If we assumed coindexation as a device to express this relationship, the argument would always be in violation of Condition C, which requires that R-expressions be A-free, since it would be A-bound by the expletive, as shown below:

- (3) there_i is a man_i in the room

Chomsky (1986) argues that the problem is eliminated by the expletive replacement operation. Thus, (3) becomes (1b), repeated here, at LF:

- (1b) a man_i is t_i in the room

Since t_i is the trace of NP-movement in (1b), it is an anaphor rather than an R-expression, and hence Condition C is irrelevant. However, this account crucially assumes that Condition C applies at LF but not at S-structure. Lasnik (1989) points out that "there is well known strong evidence (presented in Chomsky (1981)) that LF operations cannot rehabilitate S-structure Condition C violations." He gives the following minimal pair:

- (4) a. *He_i liked [every book that John_i read]
 b. [Every book that John_i read][he_i liked t]

In (4b), topicalization of the object has removed *John* from the c-command domain of *he*, thus avoiding a violation of Condition C. However, a structurally identical LF operation has no such effect; Quantifier Raising (QR) could create from an S-structure like (4a) an LF parallel to (4b), but (4a) is as bad as a clear case of Condition C violation.

Lasnik (1989) proposes, instead, that the expletive has no index at all. Thus, a sentence like (1a) has an S-structure representation like the following rather than (3):

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

(5) there is a man_i in the room

Since *there* has no index in (5), the seemingly associated argument *a man* is A-free, thus satisfying Condition C. Then, (5) becomes (1b) via expletive replacement, where Condition C is also satisfied as we mentioned above. Lasnik claims that replacement of unindexed *there* with an arbitrarily indexed element would not violate recoverability of deletion, since the two are non-distinct with respect to indices, with *there* unspecified for an index that the replacing element has. Furthermore, in order to capture the agreement facts illustrated below:

(6) a. There is a man in the room.

b. * are

(7) a. There are men in the room.

b. * is

he proposes that the expletive is freely assigned any agreement features. If the values happen to match those of the replacing argument, then substitution will succeed without any violation of recoverability. If, on the other hand, the features do not match, substitution will fail, violating recoverability of deletion. This accounts for the agreement facts illustrated in (6) and (7).

Another problem with expletive *there* is why it must occur in a Case-marked position, as is clear from the ungrammaticality of the following sentences:

(8) a. *It seems [there to be a man here]

b. *I tried [there to be a man here]

Under visibility analyses where it is assumed that an argument must have Case to be 'visible' for θ -marking at LF, it has been claimed (see Safir (1982; 1985), among others) that, in examples like (8a,b), visibility imposes a Case requirement on *a man* and that, to be 'visible' for θ -marking, the argument must obtain Case via transmission from the associated expletive. This analysis correctly rules out the sentences in (8), since *a man* is invisible for θ -marking, the associated expletive occurring in a non-Case-marked position, and hence is in violation of the θ -Criterion.

Belletti (1988) and Lasnik (1992) deny this 'Case transmission' approach by pointing out some critical problems. The following contrast, for instance, will be a serious problem for this approach:

(9) a. There is likely [t to be someone here]

b. *There is likely [someone to be here]

In (9a), Case will be 'transmitted' from *there* to *someone* via t. However, if this is correct, there will be no obvious reason for why transmission fails in (9b), since the positions of the transmission path are a subset of those of the transmission path in (9a). Abandoning the 'Case transmission' approach, Belletti (1988) claims that (9b) is ruled out by the Case Filter at S-structure, since *someone* is Caseless.

Further she proposes that 'unaccusatives' and *be* are Case assigners. Thus, in the following sentences:

- (10) a. There arose a storm here.
 b. There is a man in the garden.

a storm and *a man* obtain Case from the unaccusative verb *arose* and *is*, respectively, rather than *there* via Case transmission. Furthermore, she proposes that the Case that 'unaccusatives' and *be* assign is a partitive Case, which is assumed to be the Case available universally, regardless of its morphological realization. This proposal has some interesting consequence for the phenomenon generally called the *Definiteness Effect*. As is clearly shown in a language like Finnish, which has a morphological marking of a partitive Case, this Case is only assigned to an indefinite NP, and it is incompatible with a definite NP in its semantic import; the NP assigned a partitive Case has a meaning of an existential quantifier like *some* in English. Then, it is predicted that the NP Case-marked by 'unaccusatives' and *be* should be indefinite. This is borne out; compare the following sentences with those in (10):

- (11) a. *There arose the storm here.
 b. *There is the man in the garden.

Lasnik (1992) follows Belletti (1988) in assuming that 'unaccusatives' and *be* are partitive Case assigners. However, he departs from her in that he takes a 'visibility' approach to the Case Filter.¹ Chomsky (1986) assumes that visibility only applies at LF. However, Lasnik (1992) points out both empirical and conceptual problems with this assumption. Empirically, it incorrectly rules in the sentences where non-Case-marked-arguments move to the position of Case-marked expletives at LF, as in (9b), whose LF representation will be as follows:

- (12) someone is likely [_t to be here]

In this representation, *someone* is now in a Case-marked position, and hence is visible for θ -marking, satisfying the θ -criterion. Therefore, (9b) should be grammatical according to this approach, but it is not. Conceptually, the question arises as to why LF should be the unique level that must satisfy a visibility requirement for θ -marking. Taking into consideration the nature of the Projection Principle, which basically requires the θ -marking property of a lexical item to be observed at *all* syntactic levels, it will be more natural to impose the visibility requirement upon all syntactic levels as well. Then Lasnik suggests that "the visibility requirement is imposed upon S-structure as well as LF," and that the reason why D-structure does not appear to be the level that satisfy this requirement will come from what he calls the 'reasonableness' principle, which roughly says that it is not reasonable for a feature that does not exist at a level to be required at that level. Under the assumption that (at least structural) Case is not assigned until S-structure, it would not be reasonable to require Case visibility for θ -marking at D-structure. If this is correct, (9b) is correctly ruled out, since *someone*, being in a Caseless position at S-structure, is invisible for θ -marking at this level, violating the Projection Principle.

¹ See Chomsky (1986) and Lasnik (1992) for conceptual and empirical problems with this filter.

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

5

Notice that, once we abandon the 'Case transmission' approach to an expletive-argument pair, a question remains why expletives must occur in Case-marked positions at S-structure. Since they are not arguments, visibility is irrelevant. Lasnik (1992) suggests that "visibility be *extended* in scope"; namely, that it is not merely a constraint on the operation of θ -marking, but on the operation of movement as well. Then, to be visible as the target of movement, an NP position must have Case, if, in principle, it could have Case. Since Case must be assigned by S-structure to satisfy the visibility condition for θ -marking, LF movement should be to Case-marked positions according to the 'visibility' requirement on movement. Hence, in order to be replaced by some element at LF to satisfy Full Interpretation, an expletive must occur in Case-marked positions at S-structure. He also provides an empirical consequence for this 'extended' visibility approach. Consider the following sentence:

(13) *There seems [there to be a man here]

Without any assumption like the one mentioned above, (13) would have exactly the same LF representation as the following sentence via expletive replacement:

(14) A man seems [t to be t here]

Hence it would be predicted that (13) is as good as (14), but (13) is ungrammatical. On the other hand, if we assume the 'extended' visibility approach, (13) is correctly ruled out, since there is no way to replace the second *there*, which is in a Caseless position, at LF, thus violating the principle of Full Interpretation.

2. Quantifier Scope in There-Constructions

Let us turn to the main problem of this paper; i.e., why the possibility of the scope relation between *someone* and *likely* is different in (2a) and (2b), repeated here, even though they have exactly the same LF representations after expletive replacement takes place:

- (2) a. Someone_i is likely to be t_i here
 b. There is likely to be someone here

In (2a), *someone* and *likely* each takes scope over the other, whereas (2b) has only the reading where the predicate takes scope over *someone*.

First, I adopt May's (1977, 1985) analysis of Quantifier Lowering, which explains the ambiguity of sentence (2a). Thus, the sentence will have the following two LF representations that express different scope relations between *someone* and the predicate *likely*:

- (15) a. [_S[someone]_i [_S t_i is likely [_S t_i' to be [_{sc} t_i" here]]]]]
 b. [_S e is likely [_S[someone]_i [_S t_i' to be [_{sc} t_i' here]]]]]

(15a) represents the reading where *someone* takes scope over *likely*, whereas (15b) represents the other reading where *someone* takes scope narrower than the predicate. This contrasts with the unique interpretation of (2b), represented in (15b), a point I will address directly.

Notice that the Quantifier Lowering approach is incompatible with a Case visibility approach for θ -marking at LF. Thus, in the LF representation (15b), its variable is Caseless, hence invisible for θ -marking, violating the θ -criterion. If the Quantifier Lowering approach is right, it indicates that it is too strong to impose the Case visibility requirement upon not only S-structure but also LF. Note that Lasnik's (1992) basic claim is that the Case visibility requirement must be imposed upon at least S-structure to account for the ungrammaticality of (9b), repeated here:

(9b) *There is likely [someone to be here]

The reason why he assumes that this requirement is imposed upon LF as well seems to come from conceptual considerations. He claims that, since the Projection Principle requires the θ -marking property of a lexical item to be observed at *all* syntactic levels, it will be more natural to impose the visibility requirement upon all syntactic levels as well. Despite the fact that this conceptually motivated suggestion is plausible, I just stipulate the following:

(16) θ -marking must be done under Case-visibility at S-structure.

With this assumption, (9b) is ruled out, since *someone* is in a Caseless position at S-structure and hence is invisible for θ -marking. Further, nothing is wrong with representation (15b), since this is an LF representation and hence Case-visibility is not required for θ -marking at this level.

Let us turn to the contrast in quantifier scope exemplified in (2a) and (2b). We have shown above that the scope ambiguity displayed in (2a) derives from the fact that this sentence has the two LF representations (15a) and (15b), which express different scope relations between *someone* and *likely*. Then, the next question is why sentence (2b) cannot have LF representation (15a), where *someone* takes scope over the predicate. It seems that this is related to the fact that *someone* in (2b) is assigned a partitive Case, unlike that in sentence (2a). First, I adopt the following, suggested by Lasnik (1992, fn. 17; class lectures, 1991):

(17) Partitive Case is assigned to the *contents* of an NP, not to positions, so an NP carries this Case along with it whenever it moves.

Partitive Case is different in this respect from other Cases such as accusative and nominative that are considered to be assigned to positions. This peculiarity may be related to the fact that partitive Case has some semantic content that must be compatible with that of the NP which it is assigned to. One may claim that this Case provides an existential quantificational force to its assignee, so that it must be carried along when the NP moves, since the Case constitutes part of its semantic content.

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

7

Further, I propose the following:

(18) *The Case Matching Condition*

The Case that an operator or quantifier bears cannot mismatch with the Case that is assigned to its variable.

This condition will be easily supported from languages that have rich Case inflections, as witnessed, for instance, in Russian:

- (19) a. Kto_i /* $Kogo_i$ t_i exal?
 who(Nom)/who(Acc) went away
 'Who went away?'
 b. $Kogo_i$ /* Kto_i Ivan ljubit t_i ?
 who(Acc)/who(Nom) loves
 'Who does Ivan love?'

(19a) shows that, when its trace occupies the subject position, an *wh*-phrase must bear nominative Case, whereas (19b) shows that, when its trace occupies the object position, an *wh*-phrase must bear accusative Case.

Now we are ready to answer the question of why a sentence like (2b), repeated below, cannot have the same ambiguity in quantifier scope as (2a), also repeated here:

- (2) a. $Someone_i$ is likely to be t_i here.
 b. There is likely to be someone here.

We have shown that (2a) has the two LF representations (15a) and (15b), repeated here, which express different scope relations between *someone* and *likely*:

- (15) a. [_S[someone]_i [_S t_i is likely [_S t_i ' to be [_{sc} t_i " here]]]]
 b. [_S e is likely [_S[someone]_i [_S t_i to be [_{sc} t_i ' here]]]]

(2b), in contrast, has only the reading where *someone* takes scope narrower than *likely*. Then, the question is why (2b) cannot have LF representation (15a), where *someone* takes scope over the predicate, even though (2b) becomes (2a) via expletive replacement. Notice that, in (2b), *someone* obtains partitive Case from *be* at S-structure. Since partitive Case is assigned to the contents of an NP, *someone* carries it along with it when it is attached to the matrix S to take scope after it replaces *there*, as represented below:

- (20) *_{Part} [_S[someone]_i [_S t_i is likely [_S t to be [_{sc} t_i here]]]]
 Nom

In (20), the Case that *someone* carries along with it mismatches with the Case that its variable obtains, i.e., nominative Case, thus violating (18). On the other hand, if *someone* is attached to the embedded S, as represented in (15b), there will be no Case mismatch, since neither t_i nor t_i' has Case (recall that partitive Case is assigned to the contents of NPs, not to positions). Hence, (15b) is a well-formed LF representation for sentence (2a). That is why this sentence has only one

reading where the predicate *likely* takes scope over *someone*, as represented in (15b).

3. Replacement of Unlicensed Empty Categories

Notice that we have not mentioned the status of the empty category \bar{e} in (15b), which does not seem to be licensed at LF. In order to examine this, let us consider May's (1985) functional determination of empty categories. He assumes the following:

- (21) Every empty category must be identified as one of the following four categories: anaphor, pro, PRO, variable.

Furthermore, he stipulates that "English lacks any referential empty pronominal, but it does countenance empty expletives, nonlexical counterparts of the expletive *it*." Then, \bar{e} in (15b) must be identified as one of the four NP categories. It cannot qualify as either a variable or an anaphor, since it is not bound. It cannot be PRO, either, since the matrix subject position in (15b) is governed, being the subject of a tensed clause. The only remaining option is an expletive pro, and \bar{e} is identified as such.

Note that we are assuming expletive replacement under a general principle of Full Interpretation for LF. Under this assumption, \bar{e} should also be replaced, since it is identified as expletive pro. Thus, (15b) will be mapped onto the following representation via expletive replacement:

- (22) [_S [_{NP} [_S [_{someone}]_i [_S \bar{t}_i to be [_{sc} \bar{t}_i ' here]]]]]_j is likely \bar{t}_j

Recall that we are assuming, following Lasnik (1992), that only Case-marked positions are visible as landing sites for A-movement. This accounts for the fact that expletives occur only in Case-marked positions, under the expletive-replacement hypothesis. It follows that unlicensed empty categories like \bar{e} in (15b) must also occur in Case-marked positions in order to be replaced. This leads to some consequences. First, it accounts for the fact, noted by Safir (1982; 1985), that a sentence like (23) does not have the reading where the predicate *likely* takes scope over *someone*:

- (23) There is [_{sc} *someone*_i likely [\bar{t}_i to be [_{sc} \bar{t}_i ' here]]]

Note that, in (23), *someone* receives partitive Case from *is* at S-structure. Then, (23) is mapped onto the following structure via expletive replacement at LF:

- (24) *someone*_i is [_{sc} \bar{t}_i likely [\bar{t}_i ' to be [_{sc} \bar{t}_i " here]]]

In order to get a representation for the reading where *someone* takes scope over *likely*, *someone* might be adjoined to the matrix S. Then, we will obtain the following representation:

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

9

- (25) [_S someone_i [_S t_i is [_{sc} t_i' likely [_S t_i"
to be [_{sc} t_i" here]]]]]]

However, (25) violates the Case matching condition (18), like (20), since *someone* carries partitive Case it received at S-structure and this mismatches with the Case that its variable obtains, i.e., nominative Case.

There is another representation for this reading, however. This is the representation where *someone* is adjoined to the upper small clause:

- (26) [_S e is [_{sc} someone_i [_{sc} t_i likely [_S t_i' to be
[_{sc} t_i" here]]]]]]

Here there is no Case mismatch between *someone* and its traces since none of these traces is in a Case-marked position. Since *e* is identified as expletive pro, as in (15b), it must be replaced to satisfy the Full Interpretation. The upper small clause will do for this purpose, and we obtain the following representation:

- (27) [_S [_{sc} someone_i [_{sc} t_i likely [_S t_i' to be
[_{sc} t_i" here]]]]]_j is t_j]

This correctly represents the reading where *someone* takes scope over *likely*.

Next, consider a possible LF representation for the reading where *someone* takes scope narrower than *likely*. To obtain such a representation, *someone* must be lowered and adjoined to the embedded S as follows:

- (28) [_S e is [_{sc} e likely [_S someone_i [_S t_i to be
[_{sc} t_i here]]]]]]

In (28), the second *e* is not bound, and thus is identified as expletive pro. Hence, it must be replaced. However, it is Caseless, since the partitive Case that is assigned to *someone* at S-structure is carried by that NP. Therefore, this empty category cannot be replaced under the assumption that only Case-marked positions are visible as landing sites for A-movement. As a result, (28) violates the Full Interpretation for LF. That is why sentence (23) lacks the reading where *someone* takes scope narrower than *likely*.

There is an additional consequence. Aoun (1985) observes that the following sentence is two-ways ambiguous, and not three, with respect to the relative scope of *some politician*, *seem* and *likely*:

- (29) Some politician seems to be likely to address John's constituency.

According to him, this sentence means either that there is some politician such that he/she seems to be likely to address John's constituency or that it seems that there is some politician such that he/she is likely to address John's constituency. The first reading will be represented as follows, under the present analysis:

- (30) [_S [some politician]_i [_S t_i seems [_S t_i' to be likely [_S t_i" to address John's constituency]]]]]

This representation is the same as (15a) in relevant respects, and hence raises no problems. The second reading will be represented as (31b), which is derived from (31a) via replacement of an expletive pro:

- (31) a. [_S e seems [_S [some politician]_i [_S t_i to be likely [_S t_i' to address John's constituency]]]]]
 b. [_S [_S [some politician]_i [_S t_i to be likely [_S t_i' to address John's constituency]]]]_j seems t_j]

(31a) and (31b) correspond to (15b) and (22) respectively, and hence raise no problems again. The interesting fact with (29) is that it does not have the reading where *some politician* takes scope narrower than both predicates. This reading will be represented as follows:

- (32) [_S e seems [_S e' to be likely [_S [some politician]_i [_S t_i to address John's constituency]]]]]

(32) is the same as (28) in relevant respects. In this representation, e' is not bound, and hence identified as expletive pro. Thus it must be replaced to satisfy Full Interpretation. However, since it is in a Caseless position, it cannot be replaced under the visibility requirement on A-movement. That is why sentence (29) does not have this reading.

4. Licensing of Empty Categories and the Nature of Variables

There remains one important point with the derivations of (2b), repeated below, which has not been addressed yet:

- (2b) There is likely to be someone here.

Under the present assumptions, its D-structure and S-structure will be as follows:

- (33) a. e is likely [_S there to be [_{sc} someone here]] (D-structure)
 b. There is likely [_S t to be [_{sc} someone here]] (S-structure)

Since *there* does not have any index under the present assumption, its trace must not have one, either. Thus, t is unindexed in (33b). Then, (33b) becomes the following structure via expletive replacement:

- (34) Someone_i is likely [_S t to be [_{sc} t_i here]]

Note that *someone* must move to the matrix subject position by one swoop without going through the embedded subject, since the position of t is Caseless and hence invisible for a landing site for A-movement. That is why t remains unindexed in (34). Then, the derivation for narrow scope reading of *someone* proceeds as follows:

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

11

- (35) a. [s e is likely [s[someone]_i [s t to be [sc t_i here]]]]
 b. [s [NP [s[someone]_i [s t to be [sc t_i here]]]] is likely]

In (35a), *someone* is adjoined to the embedded S and, in (35b), e, which is identified as expletive *pro*, is replaced by the embedded clause. The problem with this representation is which category t is identified with. Since it is not bound, it will be identified as expletive *pro* and must be replaced. However, this position is Caseless and thus replacement is impossible under the Case visibility on A-movement. Since (35b) should be a well-formed representation for narrow scope reading of *someone*, this unindexed trace should be somehow identified or licensed, unlike e in (35a).

It seems that empty categories created in the course of derivations must be licensed by means of being identified as members of chains that do not necessarily require indexing. In order to implement this idea, let us first abandon the functional determination approach to empty categories, adopted by May (1985). Rather, I assume that PRO and *pro* are base-generated at D-structure and that they keep their status in the whole derivations, except that expletive *pro* is replaced at LF. Furthermore, I assume that empty categories produced during derivations must be 'identified' in a chain. Otherwise, unidentified empty categories must be replaced by some element to satisfy Full Interpretation for LF. I adopt Rizzi's (1990) formulation about identification of nonpronominal empty categories. He assumes the following:

- (36) A nonpronominal empty category must be
 (i) bound, or
 (ii) antecedent-governed

A nonpronominal empty category can be bound only if it has a *referential index*. Otherwise, it must be antecedent-governed. Rizzi restricts the use of indices to express referential dependencies of arguments, and proposes the following condition:

- (37) A referential index must be licensed by a referential theta role.

A referential θ -role is a θ -role referring to the participants in the event described by the predicate: *agent*, *theme*, *goal*, and so on. This θ -role is contrasted with θ -roles such as *measure*, *manner* or the θ -role assigned to quasi-arguments such as idiom chunks. Binding chains can hold among their members having referential indices at an arbitrary distance, since there is no requirement but c-command relations. On the other hand, government chains, whose members do not have referential indices, are intrinsically local, since no barriers may intervene among the members of these chains. Antecedent-government requires at least the following conditions:²

² It will suffice to assume the following definition of barrier for government, for the present purpose:

- (i) XP is a barrier if it is not directly selected by an X^0 .

Here, "select" means θ -marking for lexical heads and c(ategory)-selection for functional heads.

- (38) X antecedent-governs Y only if
 (i) X c-commands Y; and
 (ii) no barrier intervenes

This approach to identification of empty categories is consistent with Lasnik's (1989) claim that expletive *there* is unindexed. Since it is not an argument, it cannot have a referential index, according to (37). Then, after it is replaced by an NP at LF, its trace(s) must be antecedent-governed.

This approach has a conceptual advantage over May's approach. Recall that May stipulates in his analysis that, even though English lacks any referential pro, it has expletive pro. Further, the expletive pro only appears at LF in this language. This is an undesirable stipulation. Under the present assumption, on the other hand, it is only necessary to state that English does not have pro at all, maybe because of a poor agreement system, unlike Italian and Spanish. What is identified as expletive pro at LF in English, in May's system, is now regarded as 'unidentified' empty category in Rizzi's (1990) sense and hence must be replaced.

With these assumptions in mind, let us turn to the representations in (35), repeated below:

- (35) a. [s e is likely [s[someone]_i [s t to be [sc t_i here]]]]
 b. [s [NP [s[someone]_i [s t to be [sc t_i here]]]] is likely]

In (35a), e is not identified by either binding or government, since it is neither bound nor governed by any element. Let us mark an unidentified empty category with [-I]. Then, (35a) will be represented as follows:

- (35a') [s e is likely [s[someone]_i [s t to be [sc t_i here]]]]
 [-I]

In this representation, e must be replaced to satisfy Full Interpretation. t in (35a,b), on the other hand, is identified via government, since *someone* antecedent-governs this trace and, hence can form a government chain with it. Therefore, t does not have to be replaced at LF.

In (35b), the chain created by movement *someone* will consist of (someone_i, t, t_i), (t, t_i) forming an A-chain. One interesting question with this chain will be which trace serves as the variable of *someone*. It depends on the definition of a variable. Suppose, following the standard assumption, that a variable is an empty category in an A-position that is locally A'-bound. Then, t_i rather than t is the variable of *someone*, since t is unindexed and hence cannot be bound.

Subjects are not directly selected by V⁰, but by VP. See Rizzi (1990) and Cinque (1990) for detailed discussions about barriers and the definition of antecedent government.

EXPLETIVE REPLACEMENT AND QUANTIFIER SCOPE

There is some evidence for this standard definition of a variable, under the present system. Consider the following sentence, originally observed by Dresher and Hornstein (1979):

(39)?*There seems to be likely to be someone in the room.

First, its D-structure and S-structure will be as follows:

- (40) a. [_S e seems [_S e to be likely [_S there to be
[_{sc} someone in the room]]]] (D-structure)
b. [_S there seems [_S t to be likely [_S t' to be
[_{sc} someone in the room]]]] (S-structure)

In (40b), since *there* is unindexed, its traces are also unindexed. Further, *someone* gets partitive Case from *be* and satisfies the Case visibility requirement for θ -marking at S-structure. Then, it is mapped onto the following representation via expletive replacement at LF:

- (41) [_S someone_i seems [_S t to be likely [_S t' to be
[_{sc} t_i in the room]]]]

In (41), the two traces t and t' remain unindexed, since *someone* cannot go through the positions that they occupy because of the visibility condition on A-movement. Next, *someone* must adjoin to a clausal category to take scope. It cannot be adjoined to the matrix S, since this would violate the Case matching condition (18); *someone* carries its partitive Case along with it, according to (17), and its variable occupies a position marked with nominative Case. It cannot be adjoined to the most embedded S, either, for the following reason. If it were, the resulting structure would be the following:

- (42) [_S e' seems [_S e to be likely [_S [someone]_i
[-I] [-I]
[_S t' to be [_{sc} t_i in the room]]]]]]

In (42), not only e' but also e is not identified by either binding or government chains,³ and hence must be replaced to satisfy Full Interpretation. However, e cannot be replaced, since it occupies a non-Case-marked position, thus violating Full Interpretation for LF. The only remaining possible landing site for *someone* in (41) is the intermediate S. Then, (41) will be mapped onto the following representation:

- (43) [_S e seems [_S someone_i [_S t to be likely [_S t'
[-I]
to be t_i in the room]]]]

Since e is not identified in (43), it must be replaced. Then, we will obtain the final LF representation as follows:

³ I am tacitly assuming that an element cannot be identified by some other element which is, in itself, unidentified. Thus, e cannot be identified by e' via either binding or government.

- (44) [_S [_S someone_i [_S t to be likely [_S t' to be
t_i in the room]]]_j seems t_j]

In (44), (someone_i, t, t', t_i) forms a chain with the members connected to each other by government, and, among them, (t, t', t_i) forms an A-chain. Suppose that a variable is an empty category in A-position that is locally A'-bound and further that the clause-boundedness requirement of QR that have been widely assumed in the literature (see May (1977), among others) must be interpreted in such a way that the distance between a quantifier and its variable must be clause-bound. Then, (44) violates this requirement, since *someone* and t_i are not in a clause-mate relation. Therefore, there is no way for *someone* to take scope in (41) and hence the ungrammaticality of sentence (39).^{4,5}

5. Conclusion

In this paper, I defended an expletive-replacement approach by giving a solution to one of the important questions that it raises; namely, why the embedded argument associated with *there* cannot take wide scope over the higher predicate. Our analysis supports Belletti's (1988) proposal that the English *be* is a partitive Case assigner. My main proposal, which is suggested by Lasnik (1992, fn. 17; class lectures, 1991), is that partitive Case is assigned to the contents of NPs, not to positions, so this Case is carried by an NP whenever it moves. With this proposal, I argued that, when the argument associated with *there* takes scope in the higher clause, it induces Case mismatch with its trace. Furthermore, the visibility requirement on movement, proposed by Lasnik (1992), plays a crucial role in our accounts for quantifier scope phenomena in *there*-constructions. I extended an expletive-replacement approach to the replacement of unidentified empty categories that arise after quantifier lowering takes place. This accounts for the generalization that unidentified empty categories must be in Case-marked po-

⁴ Notice that, since *someone* is assigned partitive Case in (39), it cannot be referential, either, because of the semantic import of this Case.

⁵ We are assuming the clause-boundedness requirement to be such that no clause may intervene between a quantifier and its variable. This may raise a problem with representation (35b), repeated here:

- (35b) [_S [_{NP} [_S[someone]_i [_S t to be [_{SC} t_i here]]]] is likely]

If a small clause counts as a clause relevant for the clause-boundedness requirement, then (35b) violates this requirement, since a small clause intervenes between *someone* and t_i. It seems that, when the subject of a complement clause gets Case from the matrix verb, it can be regarded as a clause-mate with an element in the matrix clause as far as the clause-boundedness requirement is concerned. This is witnessed in the following example, where *everyone* takes scope over *someone*:

- (i) Someone considers [_{SC} everyone intelligent]

Then, the clause-boundedness requirement is stated more precisely as follows:

- (ii) No clause can intervene between a quantifier and its variable unless that variable gets Case from the head that selects that clause as its complement.

sitions in order to be replaced, parallel to expletive *there*. This gives further support to a general principle of Full Interpretation for LF, proposed by Chomsky (1986). Finally, I gave a support for the claim, made by Lasnik (1989), that the expletive *there* is unindexed. This hypothesis gives a nice account for prohibition of double raising of *there*, with the assumption that a variable must be identified as an empty category that has an index and that it must be bound by its quantifier in the minimally dominating clause.

Acknowledgement

I am indebted to Howard Lasnik and Mamoru Saito for valuable comments and discussions. Especially, the series of works by Howard Lasnik helped me a lot to instantiate this paper. I am also indebted to Steven Bayne, Hisatsugu Kitahara, Javier Ormazabal, David Pesetsky, Ken Safir and Myriam Uribe-Etxebarria for helpful comments. Thanks also go to Laurel Laporte-Grimes and Elizabeth Laurencot for editorial comments.

References

- Aoun, J. (1985) *A Grammar of Anaphora*, MIT Press, Cambridge, MA.
 Aoun, J., N. Hornstein, D. Lightfoot and A. Weinberg (1987) "Two Types of Locality," *Linguistic Inquiry* 18, 537-577.
 Belletti, A. (1988) "The Case of Unaccusatives," *Linguistic Inquiry* 19, 1-34.
 Chomsky, N. (1981) *Lectures on Government and Binding*, Foris, Dordrecht.
 Chomsky, N. (1986) *Knowledge of Language: Its Nature, Origin, and Use*, Praeger, New York.
 Cinque, G. (1990) *Types of A'-Dependencies*, MIT Press, Cambridge, MA.
 Dresher, B.E. and N. Hornstein (1979) "Trace Theory and NP Movement Rules," *Linguistic Inquiry* 10.1.
 Lasnik, H. (1989) "Two Notes on Control and Binding," ms., University of Connecticut, Storrs. [To appear in J. Higginbotham et al., eds., *Control and Grammar*, Kluwer, Dordrecht.]
 Lasnik, H. (1992) "Case and Expletives: Notes toward a Parametric Account," *Linguistic Inquiry* 23, 381-405.
 May, R. (1977) *The Grammar of Quantification*. Doctoral dissertation, MIT.
 May, R. (1985) *Logical Form: Its Structure and Derivation*, MIT Press, Cambridge, MA.
 Rizzi, L. (1990) *Relativized Minimality*, MIT Press, Cambridge, MA.
 Safir, K. (1982) *Syntactic Chains and the Definiteness Effect*, Doctoral dissertation, MIT.
 Safir, K. (1985) *Syntactic Chains*. Cambridge University Press.