

ON EXTRAPOSITION AND EXPLETIVE-MOVEMENT

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1. Introduction

Movement analyses of extraposition such as Baltin's (1982) have been called into question by the base generated adjunction analyses of extraposition proposed in Gueron and May (1984) and Culicover and Rochement (1990) and by the base generated VP-internal analysis of extraposition proposed in Haider (1993). In this paper, however, I defend a movement analysis of the extraposition data illustrated in (1a). Following Kayne's (1993) claim that extraposed constructions are formed by leftward movement, I argue that (1a) is derived via leftward movement of the expletive from [Spec CP] position to [Spec AGR_oP] position (in the same way that (1b) is derived by the leftward movement of the NP "Sue" from [Spec IP] to [Spec AGR_oP]).

- (1a) I should resent it greatly [that you did not call]
b I believe Sue quite sincerely [to be the best candidate]

In this analysis, I crucially assume (i) Chomsky's minimalist programme in which movements are forced for morphological reasons; (ii) Kayne's movement hypothesis, which claims that all movement is leftward movement; and (iii) Koster's (1993) and van Gelderen's (1994) version of phrase structure which posits a Predicate Phrase (PredP) between the AGR_oP and the AGR_sP to which verbs must be moved to have their V-features checked--as in (2).¹

- (2) [AGR_sP...[TP...[PredP...[AGR_oP...[VP...]]]]]

Building on the above assumptions and on Stroik (1990, 1991), where I first propose that the expletive "it" in sentences such as (1a) must originate in the Spec of the extraposed CP, I propose that sentences such as (1a) have syntactic representation (3) at Logical Form (LF).

- (3) [...[PredP resent_i [AGR_oP it_j t_i [VP greatly [VP t_i [CP t_j [c. that you did not call]]]]]]]]]

2. On the Relationship between Expletives and CPs

My claim that the expletive in (1a) heads an NP-chain with its foot in [Spec CP] is highly controversial. It flies in the face of the conventional wisdom that envisions the NP (or DP) expletive as a grammatical element independent of, though somehow linked to, the extraposed CP (see Reinhart (1983), Postal and Pullum (1988), Authier (1991), Lasnik (1992), Iwakura (1994), van Gelderen (1994), and Zaring (1994) among others). My proposal denies what most generative analyses of expletives such as the one in (1a) assume: that the expletive "it"

replaces the extraposed CP.

Significantly, although my claim regarding the relationship between expletive and extraposed CP in (1a) is novel and unusual, it is compatible with the theory of Universal Grammar outlined in Chomsky (1981, 1986a, 1993) and cannot be rejected simply by appeal to UG principles. That is, under Chomsky's model of UG, the Spec of the extraposed CP is a non-Theta-marked, nonargument position which must share the head-feature [-wh] with the [-wh] complementizer "that." However, the expletive "it" is, according to Chomsky (1981), a nonargument and is not a wh-element; hence its presence in [Spec CP] is not prohibited by Theta Theory nor by any theories responsible for guaranteeing Spec-Head agreement (I will show that the NP expletive in [Spec CP] satisfies all other principles of UG latter in this paper).

Besides being compatible with UG principles, my claim is also supported empirically by data such as (4)-(7).²

- (4)a I knew that Mary would fire John today, yesterday
 b I knew it yesterday that Mary would fire John today
- (5)a I knew when John would be fired today, yesterday
 b *I knew it yesterday when John would be fired today
- (6)a I mentioned that John left to you yesterday
 b I mentioned it to you yesterday that John left
- (7)a I mentioned who had left to you yesterday
 b *I mentioned it to you yesterday who had left

If expletives replace extraposed CP, then we are left with the serious problem of explaining why the embedded CPs in (4a) and (6a) can be replaced with expletives (see (4b) and (6b)), whereas those in (5a) and (7a) cannot, as (5b) and (7b) attest. Now there are some arguments that one might offer to explain the data in (4)-(7) while still maintaining a replacement theory of expletives. On the one hand, one might argue that (5b) and (7b) are ill-formed because [+wh] CPs do not extrapose. Such an argument is unpersuasive, however, since the extraposed [+wh] CPs are all well-formed in (8).

- (8)a What John will do next, I do not know.
 b A woman came in the room who nobody knew
 c What to do next, I cannot tell you

One might argue, on the other hand, that (5b) and (7b) are ungrammatical because the pronominal "it" has the features necessary to agree with a [-wh] CP but not with a [+wh] CP, as is suggested by (9).

- (9)a Mary knows that Bill was fired and Harriet knows it too
 b *Mary knows which books to read for the test and Harriet knows it too

Although the data in (9) do indicate that "it" can agree only with a

[-wh] CP, this fact creates more problems than it solves, leaving us with the problem of identifying the features which exclude "it" from agreeing with (or replacing) a [+wh] CP. After all, we know that the pronominal "it" can agree with [+wh] constituents (see (10)); so why can't this pronominal do so in (5b), (7b), or (9b)?

- (10)a Which house did Mary have to repair before she could live in it?
 b What does Mary know even though she doesn't know she knows it?

If the feature [wh] cannot explain the grammaticality difference between (9a) and (9b), what feature can? Certainly not the feature [referential], since "it" (as Chomsky (1981) claims) can be either referential or nonreferential; and certainly not the feature [+CP], since the pronominal "it" in (9a) agrees with (replaces) a CP. As we can see, in light of the foregoing discussion, the data in (9) does not shed much illumination on how to resolve the problems suggested in examples (4)-(7).

Importantly, the problematic data in (4)-(7) and (9) follow naturally under my assumptions about expletives. If the expletives in (4b)-(7b) originate in the Spec of the embedded CP (as I claim), then (5b) and (7b) will be ill-formed because both the expletives and the wh-constituents would have to occupy the [Spec CP] position (which can host but one constituent). Further, the agreement relationship between the expletive and the extraposed CP in (4b) and (6b) manifests naturally under my analysis as Spec-Head agreement.³ And finally, the conjunction data in (9), which pose two problems for us--how can the pronominal in (9a) carry the CP features required to interpret it properly and why is (9b) ungrammatical--can be resolved under my analysis by assuming that the second conjunctions in (9a) and (9b) have reconstructed logical representations (11a) and (11b), respectively.

- (11)a and [Harriet knows [_{CP} it [_C that Bill was fired]]]
 b *and [Harriet knows [_{CP} it/which books [_C ...]]]

Notice that (11a) is a well-formed logical representation for (9a), which provides the pronominal (via Spec-Head agreement) with the features necessary to agree with the embedded CP in the first conjunct. Notice also that (11b) attributes the ungrammaticality of (9b) to the fact that the logical representation of (9b) requires the [Spec CP] position to be doubly filled.

3. Expletives and Movement

If my analysis of expletives is correct, then the embedded CP in example (1a) should have (12) as its base representation. (Notice that in (12), the CP is L-marked by the verb--a fact which will be important to my analysis.⁴)

- (12) I should resent (greatly) [_{CP} it [_C that you did not call]] (greatly)

This base representation, however, leaves us with the problem of explaining how the surface form in (1a) is derived from (12). That is, we must explain how and why the expletive, which is continuous with the C'-constituent in (12), becomes discontinuous with it in (1a).

We can derive the above discontinuity in one of two ways: either by moving the C'-constituent to the right (as in (13a)) or by moving the expletive to the left (as in (13b)).

- (13)a I should resent [_{CP} it t_i] greatly [_C that you did not call]_i
 b I should resent it_i greatly [_{CP} t_i [_C that you did not call]]

Of these options, the first one (13a) should be rejected on principled grounds for several reasons. First, it violates Chomsky's (1986b) injunction against X'-movement; second, it requires rightward movement, contra-Haider's (1993) and Kayne's (1993) arguments against such movement; and third, it would require right-adjunction (which according to Haider (1993) violates the Branching Constraint). Hence, given Chomsky's, Haider's, and Kayne's analyses, we must treat syntactic representation (13a) as an illicit representation for (1a).⁵

My analysis, then, compels me to posit (13b) as the only possible derivation for (1a). But is (13b) a permissible derivation for (1a)? I shall argue that it is, for it not only follows Haider's and Kayne's conditions on movement cited above but it also satisfies Chomsky's (1993) minimalist analysis of syntactic representation.

Importantly, derivation (13b) is compatible both with Chomsky's (1991) theory of clausal structure (which assumes both an AGR_n projection and an AGR_v projection) and with Chomsky's (1993) core minimalist assumption that all movement is forced, typically for morphological reasons. In (13b), the movement exhibited is NP-movement--a movement which is forced for Case Checking reasons. That is, to satisfy Case Theory, the NP-expletive in (13b) must move from its non-Case-checked position (the [Spec CP] position) to a position where its noun features (including Case) can be checked (the [Spec AGR_vP]). Furthermore, the forced movement of the expletive in (13b) is a licit movement because it conforms with Government Theory. In particular, the expletive-movement from [Spec CP] to [Spec AGR_vP] is a licit movement under Government Theory because the expletive-trace left by expletive-movement in (13b) satisfies the conjunctive Empty Category Principle, being antecedent governed by the expletive moved to [Spec AGR_vP] (of note here is the fact that the embedded CP in (13b) is L-marked by the verb "resent" and therefore, as Chomsky (1986b) claims, this CP will not be an inherent barrier to the antecedent government of the expletive-trace) and by being head governed, according to Lightfoot and Hornstein's (1994) definition of head-government, by the C-head with which it is conindexed via the Spec-Head Agreement Convention.^{6,7}

Although expletive-movement is permissible, there is one major problem with my analysis of (1a). That is, my expletive-movement analysis requires overt movement of the expletive to [Spec AGR_oP]; such movement, however, should be disallowed under Chomsky's (1993) minimalist assumptions. Since Chomsky permits overt NP move to the Spec of an AGRP only if the AGR has strong features (which AGR_o does not have in English), he would predict that there would be no overt movement to [Spec AGR_oP] in English. However, in my analysis, I follow van Gelderen (1994) reanalysis of functional features by assuming that "the N-features in both AGR_a and AGR_o are strong." Under van Gelderen's analysis of AGR, overt expletive-movement in (13b) is both licit and required.

Although I have argued for my expletive-movement analysis of (1a), I still have not provided a structural description (SD) of (1a) that converges at LF (hence, will be interpretable). The SD I propose for (1a) builds upon Koster's (1993) and van Gelderen's (1994) assumption that Verb-features are checked in PredP, a projection between AGR_aP and AGR_oP. Assuming a PredP projection and my analysis of (1a), I derive SD (14) for (1a).⁸

- (14) [_{AGR_aP} I [_{should}. . . [_{PredP} resent_i [_{AGR_oP} it_j [_{AGR_o} t_i [_{VP} greatly [_{VP} t_i [_{CP} t_j [_C that you did not call]]]]]]]]]]]]]

Significantly, (14) is a SD which not only will converge at LF but which also will converge at PF (because, in part, it correctly captures the word order of (1a)). Since an SD will be licit under minimalist assumptions (see Chomsky (1993, 1994)) if and only if it converges both at LF and PF, SD (14) is a well formed SD for (1a).

4. Some Predictions

In this section, I will support my analysis by showing that it leads to some startlingly correct predictions. For one, given that my expletive-movement analysis requires movement out of an L-marked CP, I predict a subject-object asymmetry for expletive-movement because subjects, unlike objects, are not L-marked (as defined in Chomsky (1986a)). I predict, then, that verbs which theta-mark CP subjects will not permit subject expletives because these non-L-marked CP subjects create antecedent-barriers for any trace within the CP, leaving the trace in violation of the conjunctive ECP. As a result, expletives should not be permitted to move from a subject CP in [Spec VP] (the base position of the subject under Koopman and Sportiche's (1991) VP Internal Subject Hypothesis) to AGR_aP; nor should they be allowed to move from a subject CP in [Spec AGR_oP] (a derived position of a subject) to a higher [Spec AGR_aP] position. These predictions are tested in (15)-(18).

- (15)a [That Lou was hired] forced me to resign
 b *It forced me to resign [that Lou was hired]

- (16)a [That Lou was hired] convinced me to tell Sarah that I
would soon resign
b *It convinced me to tell Sarah that I would soon resign
[that Lou was hired]
- (17)a I believe [that you love me] to be true
b *It_i was believed [that you love me]_i to be true
cp [That you love me] was believed to be true
- (18) *It_i seems [that you love me]_i to be true to me
cp [That you love me] seems true to me

The evidence in (15)-(18) corroborates my predictions. Examples (15)-(16) demonstrate that expletive-movement from the CP in [Spec VP] is ill-formed and examples (17)-(18) show the impossibility of moving an expletive from a [Spec AGR_sP] to a higher [Spec AGR_sP].^{9, 10}

Second, I predict that leftward movement of an extraposed CP over the expletive to which it is linked should be prohibited. This movement, under my analysis, will be illicit because it will derive structures such as (19), in which the expletive-trace cannot be antecedent governed by the expletive.¹¹

- (19) [_{CP} t_i . . .]_j . . . it_i . . . t_j . . .

If, as Kayne (1993) assumes, leftward movement is movement to a structurally superior position, the expletive in (19) will not be able to c-command its trace; hence the trace will not have an antecedent at LF--in violation of the conjunctive ECP. The data in (20) confirm my prediction.¹²

- (20)a [That Lou intends to fire me] I find (*it) deplorable
b [That Lou left me] I resent (*it)
c [That Lou likes me] (*it) bothers me
d [That Lou hates me so much] (*it) seem sad

Notice that the examples in (20) are ungrammatical, as I predict, only if the expletive appears in them because the presence of the expletive in (20a-d) forces the constructions to have the ill-formed LF representation cited in (19).

My third prediction concerns extraction domains. To ensure interpretability, all the links in movement chains must be recoverable at LF. This constraint on interpretability requires that any domain A which has hosted a movement must preserve the traces of the movement. Hence, as we can see in (21), we can question GPs; however, as (22)-(23) demonstrates, we cannot question a CP if the CP has hosted any movement, for doing so would obliterate the trace of the moved NP.

- (21)a John believes Lou to be brilliant
b What does John believe

- (22)a Lou_i was believed [t_i to be brilliant]
 b *What was Lou believed

If my expletive-movement analysis is correct and expletives move from [Spec CP], then it should be impossible to question any CP from which an expletive has moved. The data in (24)-(26) support this prediction.

- (24)a I believe (it) quite sincerely that Lou will resign soon
 b What do you believe (*it) quite sincerely
- (25)a I already mentioned (it) to Lou that I'm resigning soon
 b What did you already mention (*it) to Lou
- (26)a It bothers Lou that I'm resigning
 b *What does it bother Lou

That the presence of the expletive in (24b)-(26b) prevents the extraposed CP from being questioned follows naturally under my analysis because these CPs are extraction domains.

Finally, I uniquely predict that wh-extraction out of an extraposed object-CP should create a subjacency violation. Such a violation should arise, given my expletive-movement analysis, since wh-elements extracted out of an extraposed L-marked CP cannot land in [Spec CP] (the position filled by the expletive-trace), thereby making the CP a barrier (by inheritance from IP) between links in the wh-chain. This barrier between links creates a subjacency violation, according to Chomsky (1896b). It is important to note, at this point, that I predict a subjacency violation for wh-extraction out of the an extraposed CP, while other analyses of extraposition such as Iwakura's (1994) and van Gelderen's (1994) would predict an ECP violation. The crucial difference between my analysis and Iwakura's and van Gelderen's analyses is that I assume that the extraposed CP is an argument (hence, movement out of the CP is a possible movement) and Iwakura and van Gelderen assume the CP is an adjunct (hence movement out of the CP should be impossible because the CP is not L-marked). We can test these differing predictions with the data cited below. (Note in the examples below, I am testing the adjuncthood of the embedded CPs; the fact that the pronominals in the a-examples and b-examples differ with respect to referentiality is irrelevant to the adjuncthood of the CPs.)

- (27)a ??Who do you admit it freely that you love
 b *Who do you admit it freely because you love
- (28)a ??Who does it seem sad that Lou had fired
 b *Who does it seem sad because Lou had fired
- (29)a ??Where did Lou mention it to you that she had put the
 hammer
 b *Where did Lou mention it to you after she had put the
 hammer

From the data in (27)-(29), we can see that wh-extraction out of the

extraposed CP in the a-examples is much more acceptable than is extraction out of the adjuncts in the b-examples. If extraposed CPs were adjuncts, as Iwakura and van Gelderen assume, then the a-examples should be as ill-formed as are the b-examples in (27)-(29). The fact that wh-extraction out of extraposed CPs is relatively well-formed supports analyses such as mine that posit the extraposed CP as an L-marked argument.

5. Conclusion

In this paper, I have argued (i) that the expletive "it" in (1a) is in [Spec CP] at base; (ii) that the linkage between the expletive "it" and an extraposed CP is a matter of Spec-Head agreement; (iii) that an extraposed CP remains in its base argument position (and never is an adjunct); and (iv) the expletive-CP discontinuity apparent in (1a) emerges because the expletive must move to the [Spec AGR_oP] position to have its N-features checked.

Importantly, my analysis assumes Chomsky's (1993) minimalist assumptions, Kayne's (1993) argument for strict leftward movement, van Gelderen's (1994) analysis of functional categories, and Koster's structural architecture, which posits a PredP. If my analysis is a viable analysis of extraposition, it but adds more support to the above assumptions and analyses.

And finally, my analysis makes learning extraposition constructions a rather routine undertaking. Under my analysis, extraposition constructions are just another type of raising-to-object constructions (akin to the raising constructions we see in (1b)); and all that a child needs to know to generate a licit structural description for raising-to-object constructions such as (1a) and (1b) is that the N-features of the NP-raised-to-object must be checked in some AGR projection under Spec-Head Agreement. Since this knowledge is wired into a child's Universal Grammar, learning extraposition is highly constrained, economical, and inevitable.

NOTES

¹Bowers (1993) also argues for the need for a PredP projection above the VP.

²I first discussed data such as (4)-(7) in Stroik (1990).

³That the licensing between an expletive and an extraposed CP would fall under Spec-Head licensing accords with Sportiche (1992), who argues that licensing conditions generally reduce to Spec-Head licensing.

⁴Chomsky (1986b) construes L(exical)-marking as in (i).

(i) A L-marks B iff A is a lexical category that
Theta-governs B (where Theta-government is a
sisterhood relation between A and B)

In Chomsky's (1986b) D-structure, the verb "resent" in (12) would

Theta-govern CP and be a sister to it; hence the verb can be said to L-mark the embedded CP.

³In Stroik (1990, 1991), I argue that extraposed sentences such as (1a) are formed by the rightward movement of a C' out of the CP and that the C'-constituent is right-adjoined to the VP. Arguments by Kayne (1993) and Haider (1993) against rightward movement and rightward adjunction have led me to discard my previous analyses of extraposition.

⁴I follow Lightfoot and Hornstein (1994) and Culicover and Rochement (1992), among other, in assuming that a conjunctive version of the ECP--one that requires a trace to be both antecedent governed and head governed.

⁷The version of head government I assume here is Lightfoot and Hornstein's (1994) version, given in (i).

- (i) X^0 (head) governs e iff there is no barrier separating X^0 and e, and X^0 and e are coindexed.

⁸SD (14) is but a partial structural description of (1a). In (14), I do not address how the subject "I" comes to fill the [Spec AGR.P] position, nor do I address the derivational history of the modal auxiliary verb. The derivation of these two elements is irrelevant to my discussion of extraposition in (1a).

⁹Notice that there are well formed examples of (17b) and (18b) that do in fact have expletive subjects -- these examples are given in (i).

- (i) a It was believed to be true [that you love me]
 b It seems to be true to me [that you love me]

The data in (i), however, are unproblematic for my argument that expletives cannot be raised subject-to-subject because the expletives raised in (1a,b) internal (object) arguments, and not from subjects.

¹⁰Since psych-verb constructions permit expletives in subject position (as is illustrated in (i)), they would appear problematic for my analysis of extraposition.

- (i) a It bothers me that Lou left
 b It amazed me that Lou was promoted

However, as Belletti and Rizzi (1988) argue, all the arguments of psych-verbs are non-subject arguments; hence, given their analysis, the expletives in (1a,b) have not raised from base subjects and, therefore, they do not pose a problem for my analysis.

¹¹Not only are syntactic structures such as (19) ill-formed, but so are all other syntactic structures in which constituents with traces move to positions from which they c-command the antecedents of the traces (all these structures will violate the antecedent-government requirement of the conjunctive ECP). Examples of ECP violation derived as above are given below.

- (i) a *[_{t_i} to have left angrily]_j Bill believes John_i
 quite sincerely _{t_j}
 b *[_{t_i} to be brilliant]_j John_i seem to me _{t_j}

¹²The data in (20) are inspired by some of Iwakura's (1994) observations on extraposition.

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