THAT CLAUSES

SYNTACTIC PROPERTIES
OF *THAT* COMPLEMENTS

As known, from a structural perspective, subordinate clauses classify on the basis of the introductory element, more technically, on the basis of the element that fills the CP projection. From this very general perspective, there are subordinates where it is the C^0 head which is lexically filled, called *complement clauses*, and subordinates where the specifier of C^0 is filled by a *wh*-phrase, called *wh-complements*. The purpose of this chapter is to offer an extensive presentation of complement clauses introduced by the complementizer *that*. *That* clauses are finite declarative subordinates.

The outline of this chapter is the following: section 1 presents the syntactic properties of *that* complements. Sections 2-4 concentrate on a few problems of interpretation, such as the interpretation of mood and tense in *that* clauses. Section 5 surveys the distribution of *that* complements, presenting the main groups of predicates that select *that* complements and the syntactic functions of *that* clauses.

1. Similarities and differences between DPs and CPs

1.1. DPs and CPs share several important properties. The most significant is that both DPs and CPs occur as *arguments* of predicates. Thus the Longman Grammar (1999) states that "Complement clauses are sometimes called *nominal clauses*, because they typically occupy a noun phrase slot, such as subject, object, or predicative." By definition a complementizer is precisely a functional element which transforms an independent sentence into an *argument* of a predicate. Like DPs, CPs merge in θ- positions and are θ- marked by the predicates that c-select and s-select them. Predicates, (i.e., verbs, adjectives or nouns) which combine with *that* complements have characteristic s-selectional properties. They accept an abstract argument, a *Proposition* and more often than not, they also s-select a human role, *Experiencer*, or *Agent*. These two θ-roles appear in various syntactic functions. Thus in all of (1a-f) one argument is a Proposition, while the human participant is understood as an *Experiencer*, in (1a-e) but as an Agent in (1f).

(1)   a. I thought that it looked good.
       b. It surprised me that he was right.
       c. He is aware that he is mistaken.
       d. It seems to me that he is right.
       e. It is important (for all of us) that he is still here.
       f. I claim that he is right.

Predicates which select *that* complements represent a few coherent semantic classes, and their lexical properties expectedly play a part in the syntax of the subordinate clause, influencing the presence or absence of the complementizer, the use of tenses, more generally, the possibiity of occurrence in different patterns.

One more common property is that DPs and CPs accept (some of) the same pronominal substitutes: *it, this, that*. This is because clauses too have default φ-features. This is why a particular pronominal form is chosen as a clause substitute ([+Neuter, +Singular]), and this is why there is agreement between verbs and subject clauses.

(2)   a. I believe *that God is good.*
         b. I believe *this/ that / it.*
         c. [That he knows the truth] *is* not sure.

As to differences between DPs and CPs, an essential aspect of DP syntax is that DPs must be case-licensed. DPs have case features which must be checked during the derivation. DPs must appear in chains where at least one position is case-marked. The distribution of DPs is constrained by the Case Filter, which bars the occurrence of DPs which lack Case. Though the Case feature itself is not interpretable, having no referential content, the distinct case features on distinct DPs "make visible" the θ- roles, thereby making DPs visible for semantic interpretation (cf.Uriagereka (1999)).

Unlike DPs, CPs *do no have to be case-licensed*. The idea that we will develop is that the absence of Case is the main syntactic difference between DPs and CPs, from which all the other differences between DP and CP syntax can be derived. The distribution of CPs is not determined by the Case Filter. As a result, the distribution of CPs is less constrained by syntactic factors and more dependent on discourse factors. Through their syntactic position, *that*-clauses often code discourse function like focus or topic.

1.2 ***Introducing Extraposition***. A characteristic syntactic structure of the English complementation system is the extraposition structure. In this pattern regardless of its syntactic role ((Su(bject), D(irect) O(bject), Prepositional O(bject)), the complement clause appears at the right periphery of the sentence, while the pronoun *it* appears in the position which ought to have been occupied by the clause, thus indicating its syntactic function. Here are examples. In each example below, a parallel sentence is given, where an unextraposed clause occupies a position that corresponds to its syntactic function.

(3) Subject
         a. That Pauline moved to Kansas surprised me indeed.
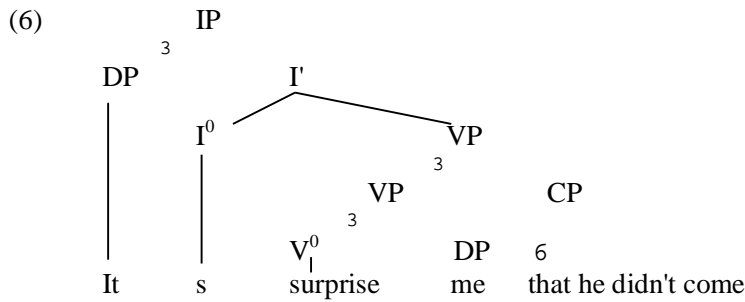   b. It surprises me indeed [that Pauline moved to Kansas].

(4) Direct object
         a. The engineer correctly understood [that the bridge would hold].
         b. The engineer correctly understood it [that the bridge would hold].

(5) Prepositional object
         a. Can you swear [that the accused man was at your house all Friday evening]?
         b. Can you swear to it [that the accused man was at your house all Friday evening]?

The clause in peripheral position is said to be extraposed. Technically, the extraposed clause is usually assumed to be adjoined to the VP, as in (6). In (6), the pronoun *it* occupies the Nom case position, the transitive verb checks the Acc feature of the object, so the CP must be devoid of case.

(6)

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                    IP
              3
   DP                    I'
    |         I⁰                VP
    |                        3
    |                    VP        CP
    |                 3
    |              V⁰      DP    6
    |               |
   It       s    surprise   me   that he didn't come
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The term "extraposition" is due to Jespersen, MEG. The pronoun <u>it</u> is the so-called "introductory-anticipatory *it*", since it introduces and anticipates the real object/subject of the sentence. The introductory-anticiptory *it* is regarded as a type of formal subject or object a "meaningless" or expletive pronoun.

2. The Case Resistance Principle

2.1. The difference between DPs and CPs with respect to case has noticeable empirical consequences. The contrast between them is most clear in examples of the following type.

(7)   a. I am happy that he left.
        b* I am happy his leaving.
        c. I am happy about his leaving.
(8)   a. I insisted that Mary should depart in the morning.
        b. *I insisted Mary's departure.
        c. I insisted on Mary's departure.

The clause is θ-licensed by the adjective *happy* in (7a), while the synonymous DP in (7b), though θ-marked by the same adjective, is not case-licensed, so that the sentence is ungrammatical. The structure is saved by the use of the preposition *about,* which checks the case feature of the DP: The same paradigm is illustrated with the prepositional verb *insist.*

The first attempt to precisely state this difference between CPs and DPs is Stowell's 1981 Case Resistance Principle, stated in (9). According to Stowell, the case difference between CPs and DPs follows from a categorial dfference as to the [±N feature]. DPs are [+N], while CPs, are verbal functional projections, so they are [-N], and therefore cannot be assigned case. In principle, case-assigners, that is, verbs and prepositions are [-N], while case-marked categories, that is nouns and adjectives are [+N].

(9)   *The Case-Resistance Principle (CRP)*
        Case must not be assigned to a category bearing a case-assigning feature, i.e., the feature [-N].

Assuming that there is a difference between θ-positions and case positions, the consequence of the CRP is that CPs will be banned from positions of case-checking, becauseof this categorial clash: case- assigners are [-N], so their complements should be [+N], while CPs are supposed to be [-N] as well. English supports the CRP to a considerable extent, since in English CPs are excluded from the following three basic case-checking positions: a) the position after prepositions; b) the structural Accusative position; c) the Nominative position. Let us examine the data. The prepositional context is illustrated below. CPs do not co-occur with the preposition.

(10)   a. I insisted that Mary should depart in the morning

b.*I insited on that Mary should depart in the morning.

In English a structural Acc position is available in the Acc+ Inf construction. The Acc (in italics in (11)) is θ-marked by the inifinitve verb, but gets case from the main verb (*consider*). Since the Case source is not the θ-assigner, the Acc is structural. The example in (11b) is analogous. The CP is θ-marked by the subordinate infinitive predicate, and would get case from the main verb (*consider*). The CP is in a structural Acc position, this leading to ill-formedness

(11)   a. I conisder [this statement to be a big mistake].
        b *I consider[[$_{CP}$ that Mary left] to be a big mistake].

At first sight, examples like (12) below indicate that the Nom position is accessible to CPs. In fact, what examples like (12) actually show is merely that clauses can be preverbal. However, as suggested by examples like (12b), there is more than one preverbal position in English. In (12b), *last night* and *in London* are topicalized phrases. The Nom position is best identifiable as the position right below an inverted auxiliary. This position is reserved to the Nom subject and is not accessible to a topicalized phrase (which is presumably adjoined to Spec IP), as proven by the ungrammaticality of (13b).

(12)   a. That John hates Mary could be true.
        b. Last night, in London, the killer struck again.
(13)   a. Could this be true?
        b. *Did last night, in London, the killer strike again?
        c. *Could that he hates her be true?

Example (13c) shows that *that*-clauses cannot appear right below an Auxiliary verb in C^0 in questions; therefore CPs cannot apparently occupy the SpecIP/SpecTP position, where the Nom feature is checked. Taken together, (13a-c) indicate that the preverbal clauses behave like topics, rather than like Nom subjects.

2.2. Stowell's insight that DPs and CPs differ in terms of case is essentially correct. Nevertheless, as stated in (9), the CRP is too strong and there are crucial empirical facts which are problematic for the CRP, since they involve CPs that have moved to case-positions, even if they do not remain there. In the first place, CPs like DPs may be sisters to transitive verbs. This posisiotn is θ-marked, and, in most descriptions of English, at least some DPs check case in this position. It is not clear therefore that the CP in (14) is not in a case-position (against the CRP).

(14)   a. I confirmed his story.
        b. I confirmed that he was at my place at that time.

The most serious problem for Stowell's analysis is posed by operator-variable constructions, where the operator that binds the variable is a CP. It is well known that an operator's trace, i.e., a variable, must be in a case-marked position. Such operator variable constructions include relativization, question formation, *tough*-movement, topicalization, a.o. That variables are case-marked is confirmed by the examples where the operator is a DP:

(15)   a. What are so you happy about t$_{DP}$?
        b*What are you so happy t $_{DP}$?
(16)   a. Who t$_{DP}$ wrote it?
        b. * Who was it written t$_{DP}$?
        c. Who was it written by t$_{DP}$?

Examples (15a) and (16a) are well-formed since the trace (variable) bound by the DP-operator is case-marked by the preposition or by Inflection. In contrast, examples (15b), (16b) are ill-formed since the trace is not case marked. The adjective *happy* in (15b) cannot case-mark the DP-trace. The passive verb in (16b) cannot case-mark the DP trace either, so the preposition *by* is necessary to case-license the trace, as in (16c).

Safir (1985) investigates the behaviour of clauses in operator-variable constructions, systematically comparing extraposed and unextraposed clauses. As mentioned above, extraposed clauses are in caseless position, and predictably, they cannot participate in operator-variable constructions. The essential observation is that only unextraposed clauses participate in operator-variable constructions.

The example of operator-variable construction considered below is Topicalization. This rule moves a DP/CP (presumably) to Spec CP, leaving behind a case-marked trace. Examples are due to Higgins (1972: 15o)).

(17) a. That Susan would be late John didn't think [t_{CP} was very likely].
      b. *That Susan would be late John didn't think [it was very likely t_{CP}].
(18) a. That he had solved the problem we didn't really find [t_{CP} to be very surprising].
      b.* That he had solved the problem we didn't really find [it to be very surprising t_{CP}].
(19) a. That we won't abandon him you may definitely depend on t_{CP}.
      b. *That we won't abandon him you may definitely depend on it t_{CP}.

In every pair, only the unextraposed clause can be topicalized, while the extraposed clause cannot. This is because the trace, or rather one trace of the unextraposed clause is in a case-marked position; in (17) there is a Su trace; in (18), a DO trace in structural Acc position; finally in (19) there is a PO trace. The chains in examples (17a)-(19a) are correctly formed, containing the operator, that is, the topicalized CP, which binds a variable, i.e., a trace in a case-marked position. In contrast the trace of the extraposed clause is not in a case-marked position. The operator does not bind a variable in (17b)-(19b), the chains are incorrectly formed, so severe ungrammaticality results.

Thus, at least sometimes, CPs must *pass through* positions where case is licensed. One might interpret this as a sign that a CP may be used to check the strong case feature of a head. Thus, one might claim that in (17), the CP moves from Spec VP to SpecIP, and perhaps further on in order to check the strong features of Tense in English. The principle at work is Lasnik's *Enlightened self interest*: a constituent, in this case the CP, moves to satisfy the needs of another constituent, in this case Tense (Inflection). Tense may attract the CP, because the latter possesses φ features. Thus Case may not be the right way of eliminating the ungramamtical sentences in (10-13) above.

2.3. More recently, it has been proposed to eliminate clauses from certain syntactic positions by means of a categorial filter, which does not make use of the concept of Case (cf. Iwakura (1994), Buring and Kartman (1997)). The proposal is that clauses are simply categorially unsuited in certain configurations. So they move out of these positions, or else, the derivation crashes. The family of proposals that filter clauses away from certain positions is based on the old intuition that predicates should be categorially distinct from their arguments.

For instance, Iwakura accepts the premiss in (20), and this allows him to state the categorial filter in (21). Informally, the filter states that a phrase, a CP in our case, cannot be m-commanded by a categorially non-distinct head, if there is no maximal projection between the head and the phrase

(20)   A head and its complement must be distinct in terms of their categorial features.
(21)   *The Head Domain Principle (HDP)*
        a.* XP[lexical], where XP is in the Domain of a nondistinct head. (applies at Spell-Out).

b. α is in the Domain of a head if the head m-commands α and there is no maximal projection between the head and α.

c. α is non-distinct from β if α nd β have the same categorial features.

Given the generally accepted descriptiom of the functional categories, the verbal functional categories C and I are categorially similar and they are both described as [-N,-V]. This means that CP cannot be in the domain of Inflection or in the domain of the verb: The filter correcly eliminates all the examples below:

(22)   a.*I consider [that John came home] to be fortunate.
        b.*I consider [for him to do it] to be a mistake.
        e. *It appears [that Bill came in late] to have upset Mary.

In (22a), the CP [-N, -V] is in the domain of the infinitival Inflection *to*[-N,-V], thereby violating the HDP. The same is true of the other examples. Examples (22a) and (22b) can also be eliminated on the basis of the CRP, since the clause, which is included in an Acc + Inf construction, is in a structural Acc position. However (22c) is not predicted to be ungrammatical by the CRP, since while *consider* is transitive and has an Acc feature which the clause might check, *appear* in (21c) is an intransitive, unaccusative verb, so that the clause is not in a position of case. The HDP can account for the fact that *that* clauses cannot appear in subject positions of infinitival clauses, even if the Su position of the infinitive is not case-marked.

Extraposed clauses, unlike unextraposed ones, do not violate the Head Domain Principle. It is the pornoun *it* [+N-V], which is in the domain of the head, not the clause (as apparent in (23a, c). Extraposition functions like a repair strategy, eliminayting the effects of the HDP.

(23)   a. I consider it to be fortunate that John came home.
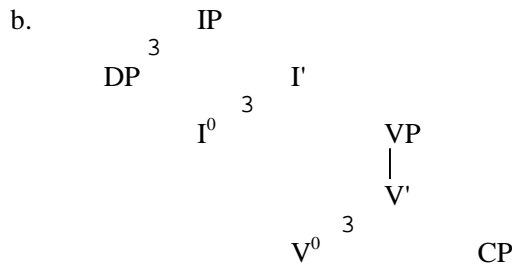   b. Bill showed it to be a fact that John lied.
        c.
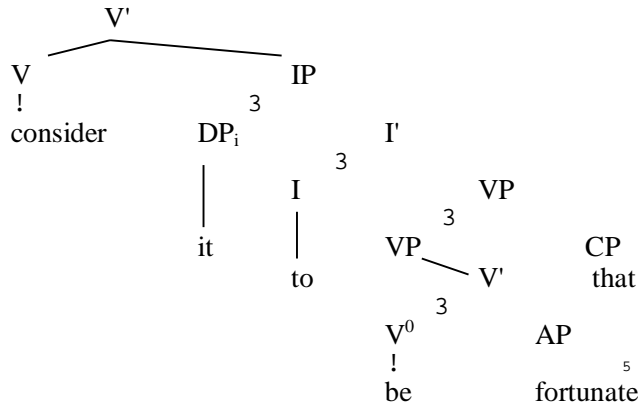
More important is the fact that the HDP also excludes CPs from PPs, since the P head, marked [-N,-V] is categorially non-distinct from the CP. In (27), the prepositional head [-N, -V] has a CP[-N,-V] in its domain.

(24)   *They complained about [that salaries were too low].

Categorial filters are a manifestation of the s-selectional properties of the head. Some variant of this categorial filter is (so far) the only way of explaining why clauses cannot be sisters of prepositions, why the sequence *P+CP is wrong in English. Again, however the HDP is too strong. Thus, given that *seem* is unaccusative, the CP is in the domain of the head in (25), though (25) is grammatical.

(25)   a. It seems that Margot has left.

b.
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                    IP
                  3
        DP            I'
                  3
          I⁰            VP
                        |
                        V'
                      3
              V⁰            CP
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Conclusions

1. Unlike DPs, CPs do not have to be Case-licensed.

2. Nevertheless, CPs can be attracted to case positions, at least when they are antecedents in operator-variable cosntructions.

3. When they move to case positions they do so in order to check strong features of functional heads, presumably their φ-features, since agreement and substiution phenomena show that clauses too have default φ-features. As they pass through positions of case checking, as a consequence of SHA, they will be case-marked, this allowing them to appear in operator variable constructions. This property is not available to clauses in extraposed position, precisely because they do not acquire a Case feature.

4. By virtue of their categorial properties CPs are filtered away from certain environments, such as the position of sister to a preposition.

3. The Extraposition Structure

An important syntactic property of English CPs is occurrence in the extrapostion structure, already introduced above. Regardless of its syntactic function the clause appears at the right end of the sentence, with the pronoun *it* in the position which should have been occpupied by the clause.

(26) *Subject*
a. That Pauline moved to Kansas surprised me indeed.
b. It surprises me indeed [that Pauline moved to Kansas].

Direct object
a. The engineer wrongly figured out [that the bridge would hold].
b. The engineer wrongly figured <u>it</u> out [that the bridge would hold].

Prepositional object
a. Can you swear [that the accused man was at your house all Friday evening]?
b. Can you swear to <u>it</u> [that the accused man was at your house all Friday evening]?

At this point, we will accept without further comment that all of the examples above represent isntances of the same construction. Later a distinction will be made between extraposition from subject position and other cases of extraposition. The unity of these examples will still emerge, because all of them represent the same syntactic configuration: a neuter pronoun in a case position and a clause at the periphery which specifies the content of the syntactic position occupied by the pronoun. We first survey some of the relevant proposals regarding the interpretation of extraposition.

3.1. The first important analysis of Extraposition in the GB framework is due to Stowell (1981). His intuition is that the role of the pronoun *it* is to make the clause "visible" for semantic interpretation. According to the Visibility Condition (cf. Chomsky (1981) in (27) below)), only constituents marked for case or which are in chains containing one case psotion can check their θ-role at LF, becoming interpretable.

(27)   *Visibility Condition*
        θ-roles can only be assigned to A-chains that are headed by a position occupied by Case.

Since in the extraposition construction, the clause is not in a case position, and since the clause must be θ-marked by the main verb, Stowell assumes that the clause and the expletive pronoun *it* make up a *chain*, where *it* is the case-marked head of the chain. Consider the examples below:

(28)   a. [It]$_i$ is self evident] [that Jenny is a good hostess]$_i$.
        b. [It] proves nothing] [that Brian dyed his hair].

According to Stowell (1981:156), the sentences above contain A-chains, which include (i) the pleonastic *it* in true Su position, and (ii) the CP argument, which appears postverballly, adjoined to VP. Since Nom Case is assigned to *it*, the A-chain is headed by a case-marked position and the visibility condition is satisfied, making θ-marking possible. The θ-role can be assigned to the VP-adjoined clause which is still within the maximal projection of the θ-assigning head. The *it* + CP construction is thus viewed as an instance of an expletive + associate chain, parallel to a formal *there* + DP construction. Sentence (26a) above would have the structure below:

(29)
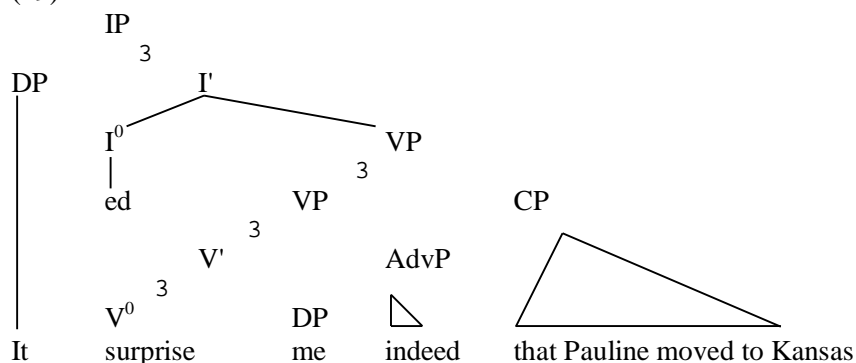
2.2. Safir (1985) argues, however, that the *it*+CP configuration does not represent a chain of type expletive +associate. Against Stowell (1981), Safir claims that CPs, "be they arguments or not, do not have to be Case-marked". According to Safir: a) CPs do not have to be in a case-marked θ-chain. b) CPs do not inherit case form *it*. c) *It* is not in a θ-chain and is therefore not conditioned by the Visibility Condition. Let us turn to claims a) and b), under the assumption that Case is inherited along the members of a chain. For example, *whom* in SpecCP in (30) is Acc-marked and so is its trace in DO position. Consider then the examples in (31):

(30)   Whom did you see t?

(31)   a. *It was bizarre Mary's departure.
        b. It was bizarre that Mary left.
        c. *It was noticed Mary's departure.
        d. It was noticed that Mary left.

e.There seems to be a man under your bed.

Examples (31a-d) prove that DPs cannot occur in the position of the extraposed clause, because that is a caseless position and DPs need case. However, on Stowell's analysis, there ought to have been case transmission from the subject pronoun to the post verbal DP, as there is from *there* to the post verbal subject in (31e). The ungrammaticality of (31a, c) indicates that *it+ DP* and *it + CP* do not represent expletive + associate chains.

There is, actually, plenty of evidence that extraposed clauses do not inherit Case from the epletive, in an expletive+associate chain. Operator-variable constructions have alredy offered very convincing cases. Consider the examples of topicalization discussd above, repeated in (32)-(33). The topicalised clause presumably moves to the CP field, and it should leave behind a trace in a case-assigned position. If it were true that extraposed clauses inherit case from the expletive *it*, it would not matter, in operator variable constructions, whether the (unextraposed) clause is itself in a case position or whether the (extraposed) clause merely inherits case from the expletive *it*. However, this expectation is not confirmed. Only the unextraposed clause can be topicalized, while the extraposed clause cannot. This is because the trace of the unextraposed clause is in a case marked position (a subject trace in (32), a direct object trace in (33)), while the trace of the extraposed clause is in a non-case marked position.

(32)   a. That Susan would be late John didn't think [t_{CP} was very likely].
        b. *That Susan would be late John didn't think [it was very likely t_{CP}].

(33)   a. That he had solved the problem we didn't really find [t_{CP} to be very surprising].
        b. *That he had solved the problem we didn't really find [it to be very surprising t_{CP}].

Other operator-variable constructions show the same asymmetry between the extrapsoed and the unextraposed position: Consider appositive relative clauses. A *that*-complement can sereve as the antecedent of an appositive clause, only if the trace it ultimately binds through the mediation of the relative pronoun is in a case position. Actually, since the relative pronoun itself is a DP, rather than a CP, the requirement that the relative pronoun should check case is natural.

(34)   a.[That Mary was leaving]$_i$, which$_i$ t_i was noticed at once, upset Joe.
        b.[That Mary was leaving]$_i$, which$_i$ it$_i$ was noticed at once t_i upset Joe.

Thus the evidence from operator-variable constructions shows that there is no case transmission between *it* and the CP, so that *it +CP* are not members of a chain.

A second kind of data supporting the conclusion that *it+CP* is not a chain comes from BT, which casts doubt on the possibility of co-indexing *it* and the CP as members of a chain. *It* is a pronoun, subject to Principle B of BT, in contrast, the CP is a referential expression subject to principle C. Since the CP behaves like a referential phrase *it......CP* structures should violate Principle C of BT. Consider the three examples in (35). The first is well-formed since the CP, a referential expression, has no c-commanding antecedent, and the pronoun *it*, which is coindexed with the clause, has no antecedent (is free) in its minimal domain (the relative clause). In contrast, the second example is ill-formed since the CP, a referential expression, which should be free, has an antecedent, namely the pronoun *it*, in violation of Principle C. It is not clear then why the third example is well-formed, since in (35c) as well, the CP, a referential expression, has an antecedent, the expletive *it*, violating Condition C.

(35)   a. [That John is guilty]$_i$ bothered the man who knew it$_i$.
        b. *It bothered the man who knew it$_i$ [that John is guilty]$_i$.
        c. It$_i$ bothered the man [that his wife spent so much money]$_i$.

Conclusions

1. The evidence argues both against Case-transmission, and against the coindexation of *it* and the CP. Therefore, *it* and the CP are not members of a chain. Safir proposes that *it* and the *CP* are simply related as members of a *configuration*. The semantic relation between *it* and the *CP* is that the CP is an adjunct which specifies the content of the pronoun, very much like an appositive clause which specifies the content of its antecedent.

4. The subject-object asymmetry in Extraposition constructions

On the motivaton of extraposition. A fundamental remark regarding Extraposition in English, is that this structure is extremely frequent if not quasi-obligatory for subject clauses and marginal for DO and PO clauses. This asymmetry is motivated by *structural* as well as by *functional* considerations. The examination of the motivation for extraposition will help us choose among the various proposals on how to analyse Extraposition syntactically.

Cullicover and Rochemont (1990), in work on Focus constructions, include Extraposition in a large class of constructions which are motivated by functional considerations. When an explantion is functional, one has in view the role that language plays within some other (extralinguistic) system. Discourse consideration for instance may play a part in the syntax of sentences. Specifcally, we have in mind the linear progression of discourse, which signals a particular information structure of the sentence. Quirk e.a. (1972) mention the two discourse principles of End-Focus and End-Weight, which play a major role in determining word-order in English. According to these two principles, other things being equal, constituents which are focussed and constituents which are long and heavy tend to occur towards the end of the sentence.

4.1 ***More on End-focus and End-weight. On Focus and Topic***. The concept of focus relates to the information structure of a sentence. In any sentence the point of information which is perceived as most salient or relevant from the speaker's point of view is the *focus* of the sentence. Focus may be indicated phonologically, by means of stress, and/or by various syntactic means. One way of indicating focus is accent: if an item is focused, then it must be accented.

In a sentence like (36) each of the constituents indicated by upper case letters may be focussed. Stress thus identifies different foci each time. The information structure of a sentence constrains the class of contexts where the sentence can be used felicitously.

(36)   John likes Mary. ("Who did you say John likes?")
(37)   a. John likes MARY. (...not her sister)
         b. John LIKES Mary. (I thought that John hated Mary, but in fact John...)
         c. JOHN likes Mary. (I thought that Bill liked Mary, but I discovered that...)

The focus of a sentence is predictable in terms of properties of the discourse and context where the sentence occurs, as well as in terms of the structure of the sentence itself (cf. Cinque (1993), Zubizaretta (1998)). Each of the variants in (37) is appropriate in different contexts of use, as suggested by the possible preceding discourse in each case.

The idea of focussed information is related to the idea of 'new information', as opposed to 'old information' or 'given information', defined as information which has been under discussion. Information which has been under discussion is 'given' and can be 'construed' from the context. Hence, a useful definition of focalized information is the one below:

(38)   If α is not context-construable (is under discussion), then α is a focus.

Focus can be *informational* and *contrastive*. *Informational focus* is best understood in terms of a question-answer pair: It represents that part of the answer which is not contained in the

qustion (see (36)). *Contrastive focus* also represents an element of salient information. But this time, the information is selected out of a range of possibilities determined by the context. The focus in (37c) is contrastive, the interpretation being that John rather than Bill is the one that likes Mary. Given the context of the present discussion we will not differentiate between informationl focus and contrastive focus, but simply speak of focus.

In contrast to Focus, the Topic of a sentence is 'what the sentence is about', a constituent representing 'given', 'old' information, information which is c-construable.

Structural Focus. Not only accent, but also the syntactic form of a sentence may indicate a focus. English, for instance, disposes of two synatctic structures specifically designed to place a consitiuent in focus. These are the cleft sentence, illustrated in (39)&(40) and the pseudo-cleft sentence, illustrated in (41). In both instances the constituent which occurs after *be* is focussed, while the rest of the sentence contains presuppostional information.

(39)   a.What did he purchase for his wife?
       b. It was [a brand new fur coat] that John purchased for his wife.
       c. Focus: A brand new fur coat.
       d. Presupposition: He purchased something for his wife.
(40)   a. Who purchased a brand new fur coat for his wife?
       b. It was [John] who purchased a brand new fur coat for his wife.
       c. Focus. John (purchased a new fur coat for his wife).
       d. Presupposition: Someone bought a brand new fur coat for his wife.
(41)   a. What does Mary want?
       b. What Mary wants is a rich husband.
       c. Assertion: (Mary wants) a rich husband.
       d. Presupposition. Mary wants something.

Rules like Topicalization are specifically designed to indicate the topic of discourse, the constituent which bridges between the given sentence and the preceding discourse. The topic is thus an informationally given element, a link which can also be indicated by structural means (word order, specific constructions).
(42)   A: They would like to offer you roses.
       B: Roses, I heartily dislike t.

4.4. The asymmetry between subject and object extraposition can fruitfully be interpreted from a *functional* prespective. Extraposition of a Su clause is functional, since it enables a Su clause, which is a heavy constituent, often containing new information, to occur in final, postverbal position. Compare the following two discourses where only the extraposed structure is natural. In other words, assuming that the clause bears a [+Focus] feature, extraposition places the clause in focus position.

(43)   a. He kept complaining. It annoyed him that inflation was running so high.
       b. He kept complaining. ?That inflation was running so high annoyed him.
       c. He kept complaining. He had found out that inflation was running high.

Extraposition from object position is not motivated by the same considerations since object clauses already satisfy the principles of End-Focus and End-Weight. In a declarative simple transitive senetnce with neutral intonation, the DO is the expected focus. Hence, DO/PO extraposition is functionally superfluous and therefore, infrequent. On the other hand, when DO/PO extraposition does occur, the resulting structure has characterstic semantic and pragmatic properties. (See below.)

The strong preference for Su extraposition also relates to a perceptual problem: successive Su clauses may create center embedding, i.e., the boundary of a clause falls within

another clause, so that a constituent of a certain type is nested inside a constituent of the same type. Such structures are in principle derivable by the principles of the grammar. Nothing would prevent a *that*-complementizer from selecting an IP whose subject position is already occupied by a clause. Sentence (44b) is so difficult to process that it becomes incomprehensible:

(44)   a. [[That inflation is running high] annoys everybody in Romania]$_{IP}$
         b. *[[That [that inflation is running high] annoys everybody in Romania] should be obvious to the government].

Extraposition solves the perceptual problem, removing the processing difficulty. The application of extraposition is again functional.

(45)   a. It should be obvious to the government that it annoys everybody in Romania that inflation is running high.
         b. He knows that Mary hopes that the boss will hire her son.

Only preverbal Su clauses give rise to center-embedding. DO clauses can be embedded into one another without any processing difficulty (cf. 45b). There is again no perceptual motivation for object extraposition.
The asymmetry between Su and object extraposition can also be analysed from a *purely structural* prespective. Structurally, the motivation for extraposition+*it* insertion comes from the Extended Projection Principle and/or from Case Theory (see next section). Chomsky (1981) had stated the so-called Extended Projection Principle (EPP), which required clauses to have subjects. English is a SVO language that requires an overt subject in preverbal position. Reinterpreting the EPP in feature checking terms, the fact that a subject in SpecT is always required in English means that the T head has strong features, features which require checking by moving an (appropriate) constituent to SpecT. When there are reasons for the semantic "real" subject to be post-verbal, as is the case with extraposed subject clauses, a formal, 'meaningless' *it* subject is needed to check the strong feature of T and satisfy the EPP. More will be said below about the reinterpretation of the EPP in the MP . While for the reasons explained, the Nom Su position must be filled by a nominal, there is no requirement to lexically realize the Acc DO position. If an object clause does not appear in its θ-position, the latter may remain empty, as in (46b) or it will be filled by the introductory anticipatory pronoun *it*, as in (46a).

(46)   a. John has known it for a long time that Mary will leave him.
         b. John has known t$_{CP}$ for a long time that Mary will leave him.

Conclusions

1. Extraposition is a discourse-related rule, which places a clausal constituent in Focus position and at the right periphery, satisfying End Focus and End Weight.
2. Extraposition is quasi-obligatory for Su clauses, but infrequent for DO/PO clauses.
3. The subject/object asymmetry is important enough to be looked upon as a structural phenomenon, therefore as a matter of syntax, rather than a matter of stylistic preference.

5. On the English expletives

A central claim about expletives, made particularly by GB theory, is that they occur only in subject position.The Su receivs its θ-role in SpecVP. It follows that the Su position, Spect TP,

is projected for purely syntactic reasons, having to do with the strong features of Tense and must therefore be filled even when it has no semantic relevance. Consider the passives below. The passive is an ergative configuration which lacks a thematic subject, but where the syntactic subject SpecT position must be filled nevertheless. It may be filled by the clause itself (possibly on its way to a Topic position), or it may be filled by an expletive pronoun:

(47) a. That the earth was flat was widely believed in ancient times.
b. It was widely believed that the earth was flat in ancient times.
Since the object position is projected only from thematic structure, therefore only if the verb assigns a θ role in object position, expletive pronouns would not be expected to occur as objects. However, it has been claimed (cf. Postal and Pullum (1988)) that there are many counterexamples to this claim, such as those in (48) and (49). In each case there seems to be an expletive pronoun in what should be a θ-position, against GB theory.

(48) a. I consider it obvious that you should have done that.
b. I prevented/ kept it from being obvious that we were late.
(49) a. I regretted (it) that he was late.
b. They never mentioned (it) to the candidate that the job was poorly paid.
c. I resent it every time you say that.

The following claims will be defended here, following Rothstein (1995):
1) Expletives occur only in subject position and this follows from the distinguished syntactic nature of the subject position.
2) The examples in (48) are not counterexamples to the theory, since the pronoun is projected as a subject and is (at most) a derived object.
3) When the neuter pronoun *it* is an object (the examples in (49)), it is not an expletive, but an ordinary ponoun, which receives a θ-role.
4) This leads to a disunitary analysis of the Extraposition structures, since only in the case of extraposition from subject position will the clause be initially projected in a θ-position (SpecVP). For the other cases, the neuter pronoun will be projected in the (prepositional or direct) object position, while the clause will be projected as an adjunct c-commanding the pronoun from its position of VP-adjunction. If this analysis is adopted, it is important to define the semantic relation holding between the pronoun and the clause, when the pronoun is not an expletive.

5.1. *Licensing subject expletives. The EPP feature of Tense*
The expletive *it* is a neuter pronoun, whose main property is that it does not receive any θ-role, since it is not part of a θ-chain. As a result it appears in contexts where lexical DPs, which must be thematic, are banned, as shown in (50). The only θ-role of the passive verb goes to the CP, so the DP in (50b) cannot be interpreted and volates the θ-Criterion.

(50) a. It was widely believed that the world was flat.
b.*The hypothesis was widely believed that the world was flat.

Because expletives fail to be θ-marked, they cannot be questioned.

(51) a. *That he came* was a blessing for them.
b. *What* was a blessing for them?
c. *It* was a blessing for them that he came.
d.*What* was a blessing for them that he came?

Moreover, expletives must appear in case-marked positions. As to the semantics of expletives, Hornstein (1991) proposes that *it* refers to the empty set, thus having null reference. Having reference allows the expletive *it* to enter binding relations. In particular, there are examples that show that expletive *it* can be the controller of PRO:

(52)   a. It always rains after PRO snowing.
        b. It is likely that Thatcher will win without PRO being likely that she will win a majority. (from Hornstein (1991: 44)
        c. It was clear that Thatcher would win before PRO being clear that she would win big. (from Hornstein (1991:144))

Since, in principle, pleonastic elements are devoid of content, it was proposed (cf. Chomsky (1991)) that these elements are deleted at LF, because they simply satisfy formal features which have no interpretation. This analysis proved to be problematic for at least two reasons: a) Different expletive elements assumed to have the same role, say different formal subjects, do not contribute in the same way to the interpretation of the sentence. The sentences in (53) below, respectively employing the formal subjects *it/ there* are used in very different contexts. b) Secondly, sentences with expletives are not semantically equivalent with sentences without expletives. Thus, in (54), the variant without *there*, with the phrase *some ghosts* in SpecT presupposes the existence of ghosts, while the sentence with *there* in SpecT does not presuppose the existence of ghosts. The interpretation of the subject is different when it is in SpecVP, and when it is in SpecT. (See Diesing (1991).)

(53)   a. It was a man. (Who was it?)
        b. There was a man. (Was there anyone in the room?)
(54)   a. There were som ghosts in the pantry.
        b. Some ghosts were in the pantry.

The position on expletives adopted here (cf. Mc Closky (1991), Rothstein (1995), Groat (1997)) is that expletives are legitimate LF objects with an LF interpretation of 'null reference'. If this position is adopted, we have to specify for *it / there* how they are licensed (legitimacy) and what interpretative contribution (if any) they have.

Assuming the principle of Full Interpretation, the natural question to raise is what principles of the grammar license pleonastics? Authier (1991) uses Case Theory as an explanation for the occurrence of pleonastics. Accepting Postal & Pullum's claim that there are object pleonastics, he argues that pleoneastics occur when Case is assigned to a position not filled by a thematic argument. The premiss on which this account is based is that if Case *can* be assigned, it *must* be assigned. Thus, if the property of assigning Acc case is entered in the feature grid of a verb, then it must be discharged, and this means that Case must be phonetically realized by some NP.
(55)   A Case C is phonetically realized if C is assigned directly to a lexical NP at S-structure.

This premise is, however, incorrect. First, as Authier himself notes, even transitive verbs have the option of not realizing the Acc feature. This should not be possible if case features were obligatory. In the examples below, *regret* and *mention* may or may not spell out their Acc feature.

(56)   a. I regretted (it) that he was late.
        b. They never mentioned (it) to the candidate that the job was poorly paid.

Evidence that case features are not obligatory also comes from unergative verbs. Rothstein (1992), Dobrovie-Sorin (1994) argue that all verbs that assign an external θ-role, including unergatives, can potentially assign Acc Case. (Burzio's Generalization). Thus, the unergatives in (57) below may assign Acc to a DP which is independently θ-marked by the subordinate predicate. In contrast, the pronoun in (57a', b') cannot surface, not because it lacks case, but because it lacks a θ-role.

(57)   a. They laughed him off the stage.
        a'. *They laughed him.
        b. Thye clock ticked its way through the years.
        b'.*The clock ticked it.

In other words, case features may or may not be present and must be checked only when they are present. A major problem for explaining the presence of pleonastics in terms of case is that, they are also needed as subjects of untensed clauses, in positions where case is not assigned.

(58)   a. * PRO to seem that John was late would be an error.
        b. For it to seem that John was late would be an error.

Currently there are two (convergent) ways of stating the intuition that expletive pronouns occur to fill a syntactic subject position: a) the syntactic predication account; b) the EPP account. The syntactic predication account (Rothstein (1995)) claims that subjects occur to satisfy the condition that syntactic predicates must have subjects. This idea is stated as her Predicate Condition:

(59)   ***Predicate Condition***
        Every syntactic predicate must be syntactically saturated.

A syntactic predicate is an *open maximal projection* that needs to be saturated by being linked to a syntacitc argument, its subject. Crucially, *predicates need not have a thematic relation with their subjects*. The expletive subjects in (47) and (48), (50) are present because a VP or AP needs a subject to satisfy the Predicate Condition. It follows that expletive elements are licensed only as subjects.

A pleonastic subject denotes the null element, since it is has no θ-role and, when the predicate takes a pleonastic subject, the truth value of the proposition is fully determined by the content of the predicate. The ergative verbs + its object represents a complex syntactic predicate which needs a subject. The subject is licensed only syntactically, to satisfy the needs of the (non-lexical) syntactic predicate.

(60)   a.It was obvious that we'd be late.
        b. That we'd be late was obvious.
        c. It was obvious.

The expletive interpretation is one way of reading an otherwise ordinary pronoun like *it*, in thoses cases where the syntactic predicate is completely responsible for the semantic interpretation of the sentence; therefore, the pleonastic appears as a *default reading*, made available by the interaction of the principles of interpretation and the properties of pronominals.

The analysis in terms of syntactic predication does not, however, explain the difference between English and, say, Romanian, where the semantic process is similar to English, and there are also cases when an ergative verb with its object expresses a complete proposition, but no

pleonastic element is overtly present. The fact that the Su is overt in English is related to the well-known fact that English is a non-*pro*-drop language, that is, a language where the Su is obligatory.

This leads to the second current interpretation regarding the licenisng of expletive subjects. The presence of the Su is related to the EPP. The latter has recently been re-interpreted within minimalist theory, starting from the premiss that items Merge or Move in order to satisfy their formal features. In this light, an obligatory preverbal Su position in SpecT must be the effect of the features of the functional head T. T will be assumed to have a strong D/N feature, which can only be satisfied by Merging or Moving a DP/NP in the (lowest) specifier of T. Additionally, finite Tense also has a strong Nom feature.

Alternatively, we may say that T° has uninterpretable nominal features (φ-features) which can only be checked by more DP/NP in SpecT. The DP/NP will hereby also value its law feature as Nominative.

We conclude that Expletive Subjects are licensed by the strong EPP and Nom features of the Tense head.

5.2. *On the English Expletives*

Formal subjects like *it* and *there* merge in SpecT to satisfy the strong EPP feature of Tense. However, *there* and *it* behave differently, at least with repect to agreement.

(61)   a. There is a boy in the room.
        b. There are boys in the room.
        c. It is John.

There is an obvious morpho-syntactic difference between *it* and *there* and it would be desirable to derive from it this different pattern of agreement. *There* is an adverbial expletive, so it lacks of φ-features. This is why in *there* sentences agreement features are checked with the lexical subject, because only the latter possesses φ-features.

It is a pronominal expletive which has φ-features: it is a [+3d person, +neuter, +singular] pronoun. Subject *it* always imposes singular agreement on the verb. The pair of examples in (62) clearly brings out this point.

(62)   a. That the president will be re-elected and that he will be impeached are equally likely at this point.
        b. It is /*are equally likely at this point [$_{CP}$ that the president will be re-elected and that he will be impeached]

Two coordinate *that*-complements *may* determine plural agreement, while if the same co-ordinate complements are extraposed, and the expletive *it* appears in Su position, the verb must be in the singular. (cf. Groat (1997)). Mc Closkey (1991) takes such data as evidence that expletive *it* is not replaced by the extraposed CPs at LF, and furthermore, as evidence that the extraposed CPs do not raise to Su position at LF either, since that would determine a plural agreement as in (62a). *It* continues to be the LF subject. The expletive *it* is thus a DP that checks both Case and φ-features.

Since *it* appears at LF, it is interpretable, either as an "instruction to do nothing", (cf. Groat (1997)), or, more plausibly, as a term having null reference (cf. Hornstein (above)).

Let us turn to the expletive *there*. We have assumed that Tense has a strong D/N feature, as well as a strong Nom feature, which must be checked before Spell-out. Under these assumptions, *there* may be analysed as a DP that checks the case and EPP features, but not the φ-features of Tense, since *there* occupies the Nom case position, but lacks φ-features. The φ-

features of T will be checked by the *post verbal subject* by some available mechanism Groat (1997) assumes that while *there* checks Case, the weak φ-features will be checked at LF by raising the logical subject, a lexical DP endowed with φ-features and able to check the φ- features of Tense. This explains why the verb agrees with the logical subject, not with *there*. *There* is thus a defective DP, lacking the φ-features of person and number, but bearing a case feature checked by T. This analysis suggests that Case may be checked without simultaneously checking Agreement. In more recent terms we may say that the φ-features of T are simply checked by the post verbal subject by Agree.

5.3. *Object Expletives*

The only case of true expletive objects is that of *derived objects*, that is, consituents which start out as *(expletive) subjects*, but are case-marked by the verb above them, because they fail to check case in their own clause. These elements have already been discussed above, since they are in fact licensed as subjects.

(63)   I find it impossible to live under these circumstances.

The examination of *it*-occurrences in the *it + CP* structure which are not subjects of embedded predicates at any level, such as those in (64), shows that in such cases *it* is an ordinary θ-marked pronoun with a well-defined semantic interpretation.

(64)   a. I regretted (it) that he was late.
        b. They never mentioned (it) to the candidate that the job was poorly paid.
        c. I resent it every time you say that.
        d. I hate it when you are late.

Despite apperances it is hard to argue that *it* is an expletive pronoun in (64). Instead, we will analyse it as a θ-marked pronoun, while the so-called extraposed CP/ XPs must be independently licensed. There are three types of licensing such a phrase. One of them does not involve an *it + CP* structure; it refers to examples of type (64c, d), but it is instrumental in understanding the object *it + CP* construction in (64a, b).

In examples of type (64c, d) or (65) below, the DO *it* is followed by a Time Adverbial Quantifer. In (65a-c) the adverbial is a quantified DP (*every time I have dinner with John*, etc.), while in (65e), *it* is followed by a *when(ever)* time clause.

(65)   a. I regret it every time I have dinner with John.
        b. The children enjoy it every time you tell them a story.
        c. They announced it publicly every time they decided to move house.
        e. He used to like it when(ever) it thundered late.

The best approximation to the meaning of *it*, in such examples is that it desginates an *event*. Sentence (65a) means "for every event of having dinner with John, I regret that event", and sentences (65b-e) have analogous paraphrases. *It* is a variable that ranges over events of having dinner with John (example a), or events of deciding to move house (example c). The pronoun *it* now has a semantic role, it is an e-variable bound by the quantifier of time. The semantic value of *it* can be appreciated by comparing (65a) with (66), where *it* is missing:

(66)   I regretted every time I had dinner with John.

In (66), the *every* phrase is the object of the verb. In (65), where the *every* phrase is an operator binding the pronoun, there is a "matching relation" between events named by the *every*

phrase and events named by the matrix verb. Sentence (65a) asserts that every event of my having dinner with John is matched with an event of my regretting having dinner with him. By contrast, (66) asserts that I regretted all the occasions of having dinner with John, but it makes no claims about how many regretting events there were. Thus (66), but not (65a), is appropirate in a situation when, after ten years of happy dinner occasions, something happens that makes me regret that I ever had dinner with John.

Since *it* denotes an event, with this interpretation, *it* is allowed with just those verbs that s-select events. *Regret* is one such verb, but *claim* is not. Evidence for this comes from gerunds, which as knwon, can express events. Expectedly, r*egret* appears with the gerund, *claim* does not:

(67)   He regretted doing it.
         *He claimed doing it.

If a verb does not allow its Theme to be an event, then the verb does not occur in bound time adverbial constructions, like (65). The verb *claim*, for instance, can only select a proposition for its object, so it does not appear in the *it+ (quantified) adverbial* construction.

(68)   He claimed it, but it wasn't true.
         *He claimed it every time he saw you.

The important point is that in the *it+ quantified time adverbial* construction, the pronoun has semantic content, designating an event variable, bound by the adverbial quantifier. The pronoun *it* is not an expletive.

The second construction we consider is directly relevant to *that* complementation. It is an *it+CP*, structure, where the pronoun is thematic. Here are relevant exmples:

(69)   a. I regretted it that he was late.
         b. They confirmed it that you had passed the entrance exam.
         c. They announced it that she had passed her exams.

In the absence of any QP, the pronoun *it* is free and denotes a specific entity recoverable from the discourse. In examples (69) *it* is optional; including or dropping it does not seem to make an appreciable difference in meaning. However the fact that the two sentences are truth-conditionally equivalent is not evidence that *it* contributes nothing to the interpretation. The neuter *it* is appropriate when the object of the matrix verb is a *specific event*. Bolinger (1977) claims that in these circumstances *it* "must refer to some fact already broached", an event already mentioned or otherwise contextually prominent. Compare:

(70)   a. John and Mary have announced that they got married.
         b. John and Mary have announced it that they got married.

Sentence (70a) is appropriate as a report of the fact that John and Mary made an announcement that is new to the speaker. (70b) is more appropriate if the report announced by John and Mary is alredy known to the speaker. This also explains the differences in (71).

(71)   a. If he asks you to help him, just say that you regret (*it) that you can't.
         b. You shouldn't regret it that you were helpful.
         The same neuter *it* can also be the object of a preposition in *it + CP* structures:

(72)   a. I depend upon it that their paper will expose crooked politicians.
         b. I was counting on it that you would be there.
         c. What do you make of it that he is late?

Summing up, in examples of this type, the complement designates contextually salient events. Bolinger (1977) mentions several factors that may favour a referential interpretation of the pronoun as designating a specific event. The meaning of the main verb is one factor which influences the acceptability of "extraposition from object position". Expectedly, *factive* verbs (see next section and (73)) allow this structure. This is unsurprising since by definition, the complement clause of a factive verb is presupposd to be true, so that the pronoun *it* stands a good chance of designating a particular specific event.

(73)   They didn't mind it that a crowd was beginning to gather in the street.

Non-factive, propositional verbs, which express suppositions- normally having to do with bringing forward something new -, generally exclude the *it + CP* construction:

(74)   a. Who would have thought (it) that things would turn out this way?
         b. Who would have supposed (*it) that things would turn out this way?
         c. He pretended (*it) that he was the one.
         d. I presume (*it) that you are Dr. Levingstone.

Although spekers' sensitivities on this issue differ, the trend is always the same. The less specific the content of the CP, the less approprorpaite *it* seems to be in a complement containing an *it* object, although the sentence is unquestionably acceptable when *it* is omitted.

(75)   a. I regretted (??it) that Jown was intending to apply to law school.
         b. They resented (??it) that you might be going to emigrate to Australia.

Concluding, the neuter pronoun *it* is licensed under θ-marking, just as any other argument. The more interesting problem is what accounts for the presence of the CP, i.e., what grammatical mechanism licenses the CP ? We will adopt Rothstein's (1995) suggestion that the relevant mechanism for licensing the CPs that are not arguments is *predication*.

As known, the θ-grid of a verb contains an internal unsaturated event variable. When the CP is an argument this internal vasriable is bound by the Tense morpheme or by the Complementizer (see next section) of the cluase. But T^0/C^0 does not always saturate the event position; in particular, it does not do so when the cluase is projected as an adjunct. In that case, the CP has an unsaturated e-variable; it will qualify as a syntactic predicate consituent, which requieres saturation by the/a subject.

The CPs in (69) may be regarded as predicates of this kind and they are predicated of the subject *it*. The pronoun *it*, the syntactic sister of the predicate, is sufficiently local and is appropriate thematically, since verbs that occur in the *it* + CP structure allow the pronoun to denote an event.

The discussion so far has focussed on verbs that allow the CP to be interpreted as an event. It is a fact, however, that propositional verbs, i.e., verbs that may select *propositions,* not events as their internal argument sometimes appear in the *it* + *CP* construction as well. One way of looking at such cases is to say that they represent a different structure. Rothstein (1995) proposes to anlyse the *it* + CP structure of propositional verbs as an example of Right Dislocation, a construction which is independently necessary. A right dislocated constituent (see (76) below) moves to the right and is doubled by a pronoun, but Right Dislocation is *intonationally marked* by a break, preceding the dislocated constituent.

(76)   I like him, your brother.

Rothstein proposes that propositional non-factive verbs in the *it* + CP structure, involve Right Dislocation. The pause separating the dislocated CP is sometimes, but not always, indicated orthographically by a comma.

(77)   a. Thsy suspected it that he was a spy.
        b. You just assumed/ believed it that he would help.
        c. I never supposed it that they would help.
        d. I expected it that the baby would be up all night.
(78)   *They suspected/ assumed/ believed John's stealing the diamonds.

However, the interpretation of examples like (77) suggests a different analysis. As with the preceding cases, the semantic effect of adding the pronoun is the same. The pronoun *it* designates a specific event, so the effect of using these non-factive verbs in this configuration is *to reanalyze them as factive*. The verbs in (77) are factive when the pronoun *it* is present and are not factive when *it* is omitted. Sentences (79, 80a) entail the truth of their complements, whereas the corresponding examples without *it* do not, (as (80b), (81) illustrate).

(79)   They had suspected it that she would be arrested.
(80)   a. They had suspected it that she would be arrested.
        b.They suspected it that he was a spy.
(81)   a. ?????They had expected it that she'd be arrested, and were relieved when she wasn't.
        b. They expected that she'd be arrested, and were relieved when she wasn't
        c. ????They had been expecting it that she might be arrested.

The use of the *it* + *CP* is thus a means of turning a non-factive verb into a factive one. But the complement of a factive verb may designate an event. The factive interpretation of the *it* + *CP* structures suggests that the licensing mechanism is the same for proposional verbs as for factive verbs, so that *the right dislocation analysis* may be given up. The CP is licensed by predication. To give one more example, with the (normally non-factive) verbs of reporting in examples (82), the contrast induced by the presence of *it* + *CP* is between something previously unknown (*it* is absent) and something already settled (*it* is present, and the verb is factive):

(82)   a. You might at least have announced that you were moving in on us.
        b. You might at least have announced it that you were moving in on us.
        c. Did you find out that the cheque was bad?
        d. *Did you find it out that the cheque was bad?
        e. When did you find (it) out that the cheque was bad?

The pronoun is felicitously interpreted as designating a specific event, or a fact, especially if the main verb is in the past, or in other types of contexts which clealry indicate that the content of the complement clause is presupposed. Here are some of Bolinger's examples:

(83)   a. I was the one who guessed (it) that you would win.
        b. I guess (*it) that you will win.
        c. I was the one who ordered (it) that he should be fired tomorrow.
        d. Are you going to order (*it) that he be fired tomorrow?

This is not to say that a future event in the complement clause always excludes the *it* + *CP* construction, but where this construction is used, the matter has already been broached or predetermined.

(84)   Since we are agreed on the action, I shall take the responsibility of ordering it that he be fired.

It may be concluded that the *object it + CP* is a hall-mark of factive readings in English. While so far the object *it + CP* structure was shown to be able to turn a non-factive verb into a factive one, it appears that the same construction functions as a means of recategorizing a non-CP taking verb into a verb that accepts a CP, usually with a factive reading. The resulting structures are often metaphorical and the use of *it* is mandatory, since there is no propositional (non-factive) reading. Here are examples:

(85)   a. I take it that you will start at once.
         b. *I take that you will start at once.
         c. We have it on good authority that a man will give all that he has to save his life.
         d. He can't swallow it /*-that you dislike him.
         e. She hid it /*-that she was involved
         f. He let it / *- out of the bag that you were a thief.
         g. He spilled it /*-that you were a thief.
         h. They pooh-poohed it / * - that we were responsible.
         i. They finally got it/* - that I meant no harm.

Also worth mentioning are cases where a neuter pronoun turns up as the object of a verb without a CP predicated of it or an adverbial binding it, as in (86). The combinations are idiomatic, but in most case, although the reference of the pronominal is unspecifed, *it* is referential and thematic. Possible contents of the pronoun *it* are suggested by alternative less idiomtic constructions.

(86)   a. have it out with - have the matter out with.
         b. fight it out with - fight the matter out woth.
         c. kee it up - keep up the work / the appearance.
         d. rush it - rush the matter / things.

Conclusions:

1. The pronoun *it* is an expletive only in subject position. Pleonastic elements are generally licensed only in subject position, in order to saturate a syntactic predicate, or in order to satisfy the EPP.

2. In object position *it* is a θ-marked argument (a Theme/Event), as shown by the fact that there is s-selection: the it + CP structure is preferred by verbs whose complement may be an event, rather than simply a proposition. The clausal *it* may be a variable bound by a QP, or it may be a referential expression. The CP is licensed as a *predicate* on this pronominal subject.

3. The object *it + CP* construction does not involve movement. The pronoun merges in the θ-marked object position, while the clause is VP adjoined.

6. Back to the Analysis of Extraposition

It is time to return to the analysis of Extraposition, using the result obtained above, namely, the fact that only Su clauses extrapose, i.e., move out of their θ- position. Seemingly extraposed object clauses are CPs projected in positions of adjunction, having a predicative role with respect to the thematic object *it*. A second result, derived from the functional analysis, is that Extraposition is a Focus - related rule.

Two descriptions of Extraposition will be offered. One of them (Landau (1999), McClosky (1999) regards Extraposition as PF rule, applying after Spell-out. The other one regards Extraposition as part of syntax rather than stylistics and phonology and restores the unity of subject and object extraposition.

6.1. Landau's Analysis
Landau (1999) proposes the following formulation of the Extraposition rule

(87)   Extraposition
VP-internal clauses must be peripheral at PF.
Extraposition is adjunction to VP and (as is standardly assumed) an adjunct is not dominated by its host category.
Several consequences follow from this formulation:
a) Extraposition will apply only from subject position. Given the canonical configuration of the subject and the object, an object CP is already peripheral with respect to the VP. Only the subject is VP internal.
b) At the same time, a clause in structural Acc position is also VP internal, as shown by the examples below, so Extraposition operates producing the right results. In fact, as discussed above, clauses in structural Acc position are initially projected as Sus, so this situation reduces to the preceding one.

(88)   a. *I consider [that he lied to us like that] to be outrageous.
a'. I consider it to be outerageous that he lied to us like that.

Extraposition thus filters away clauses in structural Acc position, rendering the CRP superfluous.
A clause which is originally projected in Su position, therefore in Spec VP, may avoid this position in two ways, by moving to the left or by moving to the right. In numeretions (derivations) where the expletive *it* is not available, the clause is bound to move to the left. It must move to SpecTP to check the EPP feature and the φ-features of Tense. If the clause has moved to the left, it will be interpreted as a Topic. It must represent given, "construable" information. Conceivably, the CP bears a [-Focus], that is [+Topic] feature, which may be checked in a higher topic position. This may be the reason why the preverbal clause never appears under an inverted auxiliary, even if, in moving to SpecT, it has checked the Nominative feature of Tense as well.
Discourse studies have all stressed that a preverbal clause is a topic, referring to an event specified in the disourse. Thus, the Longman Grammar (1999) remarks that: "In nearly every case when a preverbal *that* clause is used, it presents information as if it is factual or generally accepted, and provides an anphoric link to the preceding discourse." Moreover, a topicalized (subject) clause often contains constituents which are anaphoric to preceding disocurse.

(89)   Thare are many players who might win the Masters, many who could. But the feeling about *Faldo* is that if he is at the top of his game, he should win it. [That *he* is ranked only $N^0 4$ in the world at the moment] is due to the eccentricity of the system.
.

On the other hand, in numerations where the expletive *it* is available the expletive is inserted in SpecT, serving as a Su for the complex predicate represented by the main verb+ clause and checking the EPP, case and φ features of Tense. The CP is interpreted as [+Focus] and moved to the extraposed position. Extraposition thus still applies to subject clauses to satisfy the [+Focus] feature. The clause is right-adjoined to VP. A Su clause will thus end up either in subject/topic position or in focus, VP-adjoined right peripheral position.

Landau's analysis is maximally simple. Extraposition is a discourse requirement, part of PF, unrelated to the checking of any particular morpho-syntactic feature.
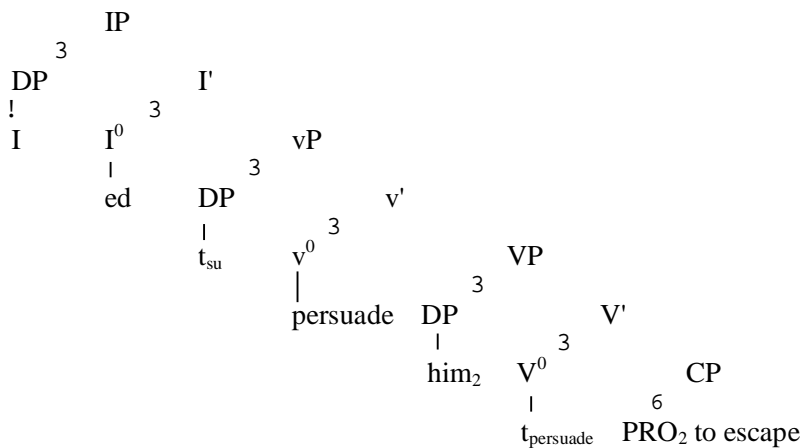
Landau also shows that there are interpretational facts which prove not only that at the end of the derivation, at PF/LF the clause is VP-adjoined, but also that the clause is initially inside the VP, in SpecVP presumably. The argument comes from control facts and presupposes the following minimalist assumptions on movement and chains:

(90) a Traces of movement are full copies of the element moved (Chomsky (1995)).
      b. Any link in a chain may be the LF visible link (i.e., the link which is interpreted).

Assuming that adjunction is A'-Movement, Extraposition yields two copies (the base and the extraposed positions). The extraposed copy will feed PF; however, either copy may feed LF. There is evidence that in some cases, LF interprets the lower, base link, that is, the unextraposed clause, while in others, it interprets the higher link, i.e., the extraposed clause. In the first case, there is "reconstruction". *Reconstuction* (cf. Fox (1999)) is a name given to the situation where the displaced copy is pronounced and the base copy is interpreted.

Situations where which CP copy of the CP chain is interpreted makes a difference are offered by control and extraction facts. *Control* is *obligatory* when the infinitive clause containing the PRO Su and the controller are co-arguments of the main verb. Both the controller and the infinitive clause are VP internal. Thus in (91a) below, the infinitive CP is the DO and the controller of PRO is the Su of the verb *attempt*. The DO cluause and the main clause subject are co-arguments since the subject is initially in SpecVP and a trace of it remains in SpecVP. Likewise, in the second example, the controller of PRO is the DO of the verb *persuade*, and it is again a co-argument of the CP containing PRO, as shoun in (92):

(91) a. I attempted [PRO to escape].
      b. I persuaded him [PRO to escape].
      c.
                    IP
                 ⟨3⟩
         DP   I'
         | ⟨3⟩
         I I^0 vP
                | ⟨3⟩
                ed   DP   v'
                      | ⟨3⟩
                      t_{su} v^0 VP
                             | ⟨3⟩
                             persuade DP   V'
                                       | ⟨3⟩
                                       him_2 V^0 CP
                                               | ⟨6⟩
                                               $t_{persuade}$ PRO_2 to escape

On the other hand when the infintive CP containing PRO is external to the VP, there may be arbitrary control, or control by a DP which is not in the main clause, but in a higher or lower clause; this situation, illustrated in (92), is known as *long-distance control*; PRO in the Su clause of (93b) is understood as coreferent with the DO *John* in the predicative clause.

(92) a. [PRO_{arb} to know the truth] is important.
      b. [PRO_1 to know the truth] is exactly what worries $John_1$.
      c.   IP
                     ⟨3⟩

```
        CP              I'
        |              3
        |          I⁰      DP
        |          |      3
        IP         is  AdvP      DP
       3          6              3
   PRO₂      I'      exactly   D⁰      NP
           3                  3
        I⁰    VP           NP      CP
        |    6            3        3
        to  know the truth   DP      IP
                            |6       6
                          [pro]  what  t_what worries John₂
```
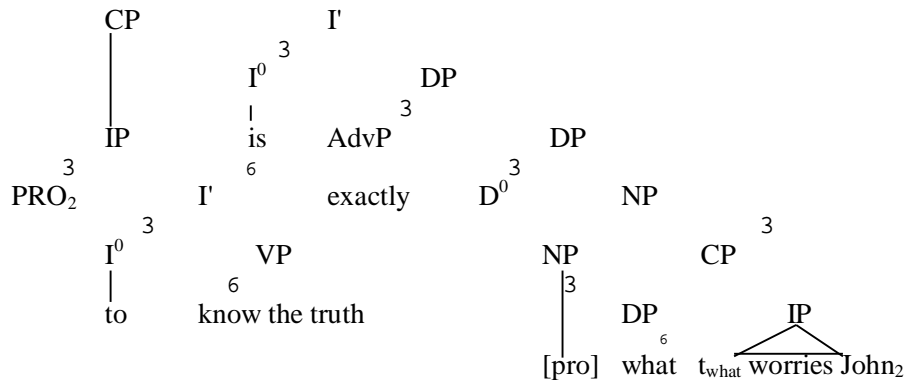
On the basis of such data, Landau states the Obligatory Control Genralization (Details on this will be given in the infinitive lecture):
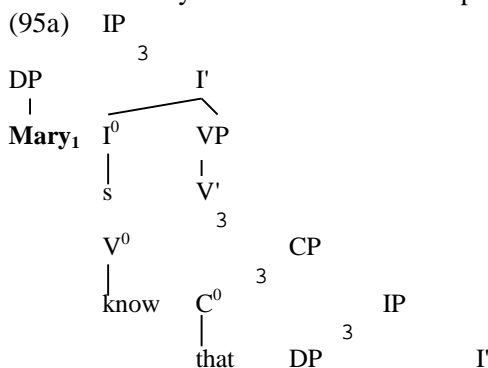
(93) ***The Obligatory Control Generalization***:
In a configuration $[..DP_1...Pred...[_{CP} PRO_1...]...]$, where DP controls PRO, if at LF the complement clause occupies a complement /specifier position in the VP shell of Pred, then DP or its trace also occupies a complement /specifier position in the VP shell.

This amounts to saying that any VP internal infinitive must find a VP internal controller, while all VP-external infinitives fall under arbitrary and/or long distance control, which is non-obligatory control.
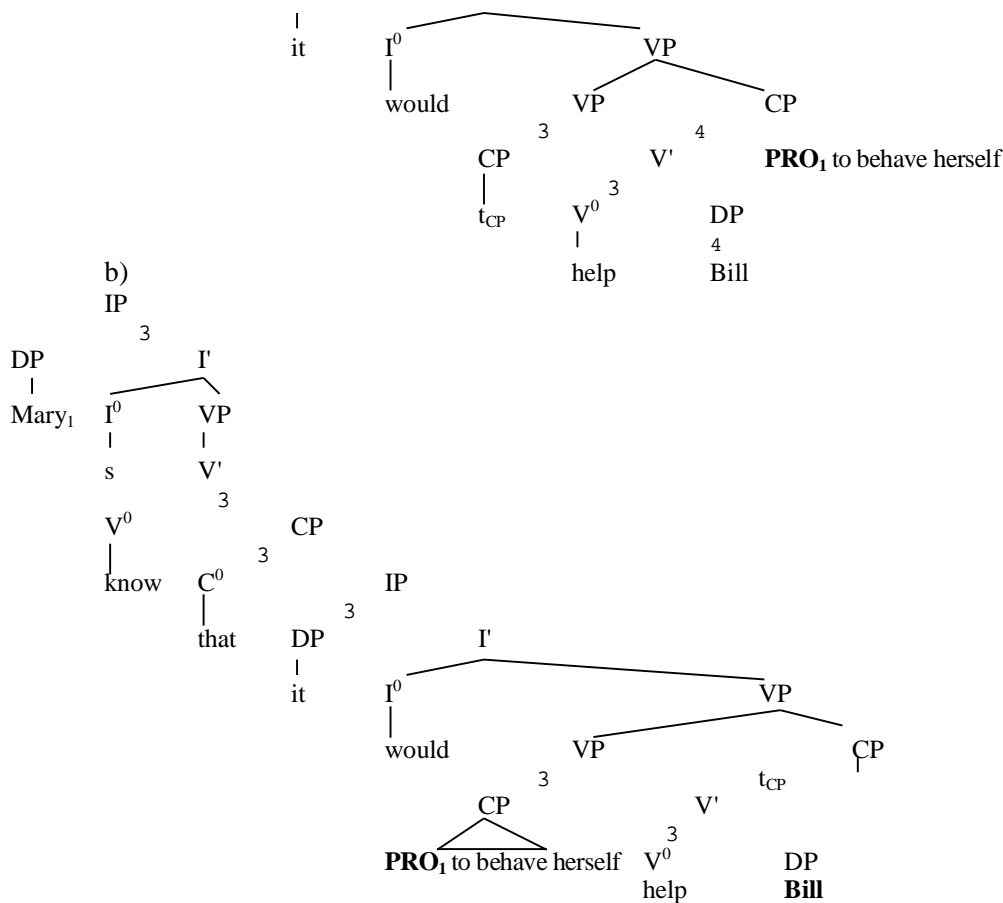
Let us see now what control can show about the LF position of the extraposed clause. Remember that, by reconstruction, either the base or the extraposed copy of the CP may be interpreted at LF. Roughly, since the base position is VP internal and the extraposed one is VP external, assuming (93), the interpretation of the clause in its base positon leads to a configuration of obligatory control, while the interpretation of the extraposed position, leads to a configuration of non-obligaotry control. In other words, whenever the infinitive is syntactically in situ control is local and whenever control is non-local (arbitrary or long-distance) the infinitve is extraposed.

Consider the examples in (94), exhibiting different control patterns. Extraposition applied to the subject clause. In (94b), the controller *Bill* is local, it is a co-argumment of the clause containing PRO. In Landau's analysis, this indicates that it is the base, VP-internal copy of the clause which is interpreted. Sentence (94b), illustrates a configuration of obligatory control. In (94a), there is long-distance control. The controller is not a co-argument of the PRO-containing infinitive clause. This means that it is the extraposed, VP-external (adjoined) copy of the clause that was interpreted. This allowed the controller to be in a higher clause (non-obligatory control).

(94) a. *Mary* knows that it would help Bill [PRO to behave *herself* in public. (NOC)
      b. Mary knows that it would help *Bill* [PRO to behave *himself* in public]. (OC

```
(95a)   IP
       3
   DP          I'
   |          ╱ ╲
  Mary₁   I⁰    VP
          |     |
          s     V'
                3
            V⁰        CP
            |         3
          know    C⁰        IP
                  |         3
                 that   DP         I'
```

it   I⁰   VP

     would   VP   CP

              3   4

              CP   V'   **PRO₁** to behave herself

              tCP   V⁰   DP

                    help   Bill

b)

IP

3

DP   I'

Mary₁   I⁰   VP

        I   V'

        s   3

        V⁰   CP

        know   C⁰   3

               that   DP   IP

                      it   I⁰   VP

                            would   VP   CP

                                     3   tCP

                                     CP   V'

                                     PRO₁ to behave herself V⁰   DP

                                                                 help   **Bill**

Crucial support for this view of Extraposition and Control comes from extraction phenomena, exploiting the fact that adjuncts are islands to extraction, while arguments are not.

If adjuncts are islands to extraction, there should be a correlation between movement and control. When the extraposed copy is the one which is interpreted at LF, as in (94a) and (95a), control is non-local and extraction should be blocked. When the clause is reconstructed to its base position, control is local, i.e., there is obligatory control between co-arguments of the main verb, as in (94b), (95b), and extraction is possible. The paradigms below illustrate these correlatios between non-local control and failure of extraction:

(96)   It would kill the workers₁ [PRO₁ to build this dam].
        b. What₂ would it kill the workers₁ [PRO₁ to build t₂]?
        c. It would kill the forest [PRO arb to build this dam].
        d.*What₂ would it kill the forest [PRO arb to build t₂]
(97)   a. It would help Bill₁ [PRO₁ to introduce himself to these professors]
        b. To whom₂ would it help Bill₁ [PRO₁ to introduce himself t₂]?
        c. It would Bill₁ help [PRO arb to introduce him₁ to these professors]
        d. To whom₂ would it help Bill₁ [PRO arb to introduce him₁ t₂?]

Extraction phenomena may thus give a clue as to the position of the clause, showing both that the clause was first projected as an argument of the verb, and that it underwent movement to a right peripheral position.
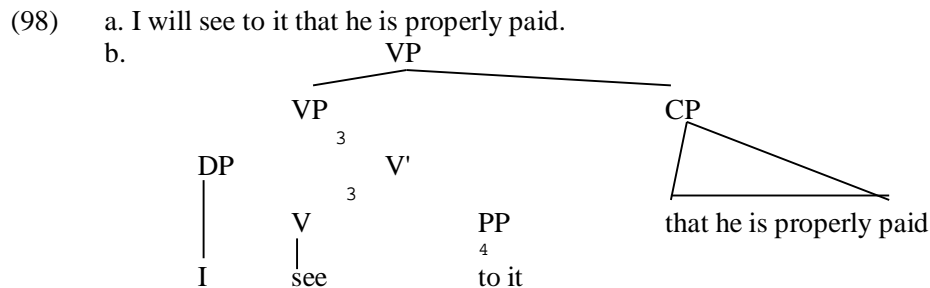
Landau's main interest is the development of a theory of Control. He is only marginally interested in Extraposition, so that, surprisingly, he does not notice the contradictions in his view of Extraposition. If Extrapostion is analysed as a PF rule, its effects should be invisible or

immaterial to LF, but as already proved above, they are not invisible, since the interpretations involving non-obligatory control *require* LFs where the complement clause is in extraposed position.

Landau's analysis undermines the view that Extraposition is a PF process.

6.4. *On Object Extraposition*

We have so far taken for granted that at least for Object Extraposition the clause merges as a VP-adjunct, semantically functioning as a predicate on the thematic object pronoun, in the configuration (98):

(98) a. I will see to it that he is properly paid.
  b.

```
                              VP
                 _____
                VP                        CP
                  3                      /|
          DP              V'           / |
           |                3         /  |
           |            V       PP   /   |
           |            |         4 /    |
           I           see      to it   that he is properly paid
```
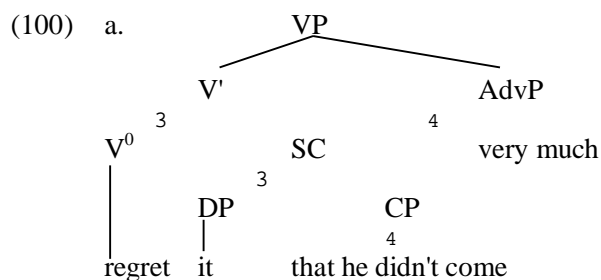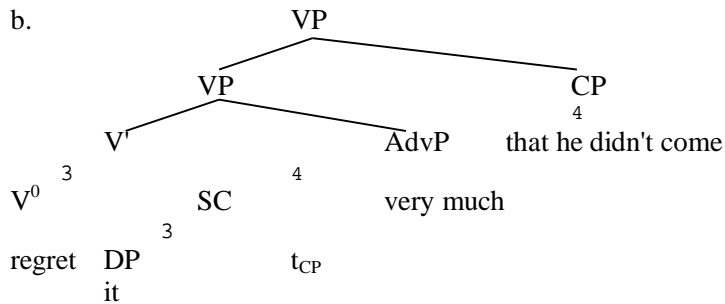
However, nothing in the formulation of Extraposition in (87) specifies the position of the Extraposed clause with respect to other VP constituents. Since it is an adjunct, it will follow subcategorized constituents, as in (99a,b), yet nothing is mentioned about its position with respect to other adjuncts. The examples in (99c-e') show that the extraposed clause is ordered with respect to other adjuncts, and such ordering conditions are more easily dealt with as locality principles on Move than as condtions on Merge:

(99) a. I wrote it to him that he had been dismissed.
  b. I grant it to you that he wanted to hurt me.
  c. I regret it very much that he didn't come.
  c.' I regret it that he didn't come very much.
  d. I will forgive it tomorrow that he was rude to me last night.
  d',* I will fogive it that he was rude to me last night tomorrow.
  e. I had forgotten it that he had arrived when I asked you about it.
  e'. ? I had forgotten it when I asked you about this that he had arrived.

Since the clause is a predicate it is not selected, so that it is not obvious how to make sure that that the clause merges in an appropriate position. Given the data, a different analysis of Object extraposition is possible.

The complement clause might simply first merge as a the predicate of a small clause whose subject is the pronoun *it*, in the configuration (100) for sentence (99a). A clause in this configuration will also count as VP internal, forcing VP adjunction, past the other adjunct. Extraposition continues to apply, since clauses must be VP peripheral at PF.

(100) a.

```
                        VP
                 _____
              V'                  AdvP
             /  3                    4
           V^0         SC          very much
            |            3
            |       DP        CP
            |        |          4
          regret    it     that he didn't come
```

b.

```
                        VP
              ┌──────────┴──────────┐
             VP                     CP
        ┌─────┴─────┐                4
       V'          AdvP       that he didn't come
    ┌───┴───┐        4
   V⁰       SC    very much
  regret    3
        ┌───┴───┐
       DP      t_CP
       it
```

An important advantage of this analysis is that the subject *it* c-commands the predicate CP, an essential requirement for syntactic predication, which fails to be met if the clause first merges as a VP adjunct. The small clause analysis is preferable on theory internal and on empirical grounds.

Conclusions

The following conflicting situation has emerged:

1) It would be desirable to regard Extraposition as a PF stylistic rule, mainly having discourse related effects (End-Focus and End-Weight).

2) Extraposition has interpretative consequences, so that it must be made visible to LF as well. Closer scrutiny shows that Extraposition is not the only rule exhibiting properties (1) and (2).

Another proposal will be made for analysing Extraposition, after having examined a rule with which it appears to share properties (1) and (2).

7. Heavy NP Shift and Clause Shift

This section is devoted to *Heavy NP Shift* (HNPS), with its clause analogue, *Clause Shift*. The empirical phenomenon at stake is the occurrence of an object XP (DP or CP) at the right periphery of the sentence, in a position different from its θ- position.

(101)   a. Mary gave every help that he demanded to Joe.
        b. Mary gave to Joe every help that he demanded.
(102)   a. ?*Mary said that she wouldn't come flatly.
        b. Mary said flatly that she wouldn't come.

As far as clauses are concerned, Clause Shift differs from Extraposition in two respects:a) it applies only to *objects*, never to subjects; b) no (expletive) pronoun marks the initial position of the clause. Our discussion will concentrate on HNPS, but analogous statements could be made about Clause Shift.

7.1. ***Heavy NP Shift***. It has long been known that a "long" or complex DO can be separated from the verb by another constituent, against the V+DO adjacency requirement which is very strict otherwise:

(103)   a.*He threw into the basket the letter.
        b. He threw the letter into the basket.
        c. He threw into the basket the letter which he had just decoded.

A complex DO can, therefore, appear at the right periphery of the sentence separated from the verb which θ-marks it. A complex DP is one which contains a PP or a clause. Since the early seventies, the appearance of the DO away from the verb has been described as a right-movement rule, called Heavy NP Shift (=HNPS), which adjoins the object to the phrase containing it, i.e., to the VP in the general case. It was also shown that not only DPs, but also clauses, which are by definition "complex", may appear at the right periphery, by Clause Shift.

(104)   a. We require of our employees that they wear a tie.
         b. John regretted deeply that Georgina was pregnant.

HNPS has several well-known properties, which confirm the view that it represents A'-movement and that the shifted object is in the same constituent with the VP.
7.2.1 Several consituency tests indicate that the shifted object is still in the VP. Rules that affect the VP as a whole affect the shifted DP as well, because it is included in the VP.
a) One example involves VP ellipsis, which "deletes" a lexical VP, leaving behind an auxiliary verb. In the examples in (105), the complex DO has moved over the IO or over a locative PP. Nevertheless the DO is still part of the elided XP, therefore it was analysed as still inside the VP.
b) Pseudoclefting in (106) brings further evidence. This rule places one phrase in focus position (i.e., afther the verb *be*). In (106), the Focus is the VP phrase. Inside the focussed VP in (106b), the DO has been moved to the right.
c) VP preposing (in (107)) is another test that confirms that the shifted DP is iniside the VP, since a VP that is fronted for emphasis may contain a shifted object.

(105)   *VP Ellipsis*.
         a. John gave to Mary a picture of Bill Clinton, and Bill did too.
         b. John read in The Times a scathing review of his new book and Sally did too.
(106)   *Pseudoclefting of VP*.
         a. What John did was buy for Mary *every book he could find*.
         b. What Mary did was put on the mantel *an old soiled portrait of her husband*.
(107)   *VP Preposing*
         a. I said I would give to Peter everything that he demanded and give to Peter everything that he demanded I will.
         b. * I said that I would give to Peter everything that he demanded and give to Peter I will everything that he demanded.

7.2.2 The second property of HNPS is its *locality*, a property that it shares with all rules that move constituents to the right. Nishihara (1997) argues that HNPS always adjoins the DP to the right boundary of the maximal projection that includes it, not higher. HNPS is a *strictly local rule*. Strict locality effects are apparent in examples like (108), (109). Consider sentences (108) and the contrast between the mild deviation of (108b) and the strong ill-formedness of (108c). Sentence (108) is unacceptable, in as much the *that* clause was not shifted past the adjunct *by*-phrase, in violation of the discourse principle of End Weight. Inside the *that*-complement in (108b), the DO underwent HNPS over the IO. Sentence (1o9c)is severely deviant since the shifted DO was adjoined to the matrix VP not to the subordinate VP, where it belongs, in violation of strict locality. Similar comments could be made about (109). Sentence (109c) is ill-formed, since instead of appearing at the end of the infinitive clause, as in (109b), the heavy italicized DO appears at the end of the adjunct gerund clause

(108)   a. It was believed by everyone that Mary bought for her mother *an ornate Fourteenth Century gold ring*.

b.?It was believed [that Mary bought for her mother *an ornate Fourteenth Century gold ring*] by everyone.

c * It was believd that Mary bought for her mother by everyone *an ornate Fourteenth Century an ornate Fourteeenth gold ring.*

(109)   a. I believe *all the cheerful and friendly waitresses at Ken's Pub* to have quit without understanding it.

b ? I believe t to have quit *all the cheerful and friendly waitresses at Ken's pub* without understanding it.

c.* I believe t to have quit without understanding it *all the cheerful and friendly waitresses at Ken's Pub.*

7.2.3 From a functional perspective, HNPS is a manifestation of the discourse principles of End-Weight / End-Focus. The examples below prove that HNPS too is a construction in which there is an obligatory *focus interpretation* for the phrase which moves to the right. Thus, sentence (111) below is a suitable answer for (110a), but not for (110b). That HNPS is focus related has been stressed by all analysts (Rochmont (1997), Mc Closkey (1999) a.o.).

(110)   a. What did John purchase for his wife?
        b. ?For whom did John purchase a new coat?
(111)   John purchased for his wife a brand new fur coat.

7.3. The available evidence proves that the shifted DP occupies an A' position, a position of adjunction to the right of the phrase that initially contained it. Two phneomena support this claim: a) The shifted DP is an island for extraction. b) The shifted DP licenses parasitic gaps (PGs).

At the same time, HNPS has an important interpretative contribution regarding scope phenomena, as well as the interpretation of sentences containing PGs.

7.3.1 Consider islandhood first. It appears that constituents contained in the shifted DP cannot be extracted by interrogation, topcalization etc. Extraction is possible as long as the DP occupies its A-position (as in (112b), but is no longer possible from the A'-position to which the DP moves (as in 112d). As commonly known, adjuncts are islands for extraction (cf. Ross (1967) a.o).

(112)   a. John noticed *a picture of his mother* on the wall.
        b. Who did John notice a picture of t_{who} on the wall ?
        c. John noticed on the wall *a picture of his mother* .
        d.*Who did John notice on the wall a picture of t_{who}?

7.3.2 It is important that HNPS has semantic effects as well. Thus, the application of HNPS may have consequence for the scopal interpretation of certain adverbials, as in (113) below. Sentence (113a), where the DO occupies its canonical position is ambiguous. The adverbial phrase, *for a time*, may modify either the matrix sentence (i.e., the verb *believe*) or the embedded clause. (i.e., the verb *to be in hiding*):

(113)   a. The FBI believed the man they were after to be in hiding for a time.
        b. The FBI believed to be in a hiding for a time the man they were after.

Once HNPS applies to the former embedded subject *the man they werer after*, as in (113b), the interpretation of the adverbial is unambiguous. The adverbial modifies only the lower clause, including the moved NP, since the object must be attached to the end of its own clause, and the object is definitely in the main clause now that it has been HNPSed.

7.3.3 A theoretically interesting fact is that a shifted DP may license a parasitic gap. An example is (114a), where the italicized displaced constituent licenses not only its own trace, but also another empty category in the adjunct *by*-phrase.The gap in the adjunct is said to be *parasitic* on the first gap, since if the first gap is not there, the secon one is not licesned either (cf. (114b)). Thus while the shifted DO licenses its own trace and the PG, the DO in its canonical position cannot do this.

(114) a. I offended **t**, by not recognizing **[e]** immediately, *my favorite uncle from Cleveland.*
       b.* I offended my favorite uncle form Cleveland, by not recognizing [e].
       c. I offended my favorite uncle form Cleveland, by not recognizing him.
(115) a. John put t on the table without reading [e] a recent article about global warming.
       b.* John put a recent article about global warming on the table without reading [e].

The PG (cf. Engdahl (1983)) construction displays two very puzzling properties, illustrated by the examples above. The first is the presence of a gap inside an adjunct, therefore, inside a domain that is ordinarily an island for extraction; this gap is made however relatively acceptable by the addition of a gap outside the island. The parasitic gap (inside the island) and the 'licensing gap' outside the island are both apparently bound by the same antecedent.

The second puzzling fact is that the licensing gap cannot c-command the parasitic gap, as shown in (116).
(116) a. the person who I [claimed **t** was lonely] [in order to get you to visit [e]]
       b. the person who **t** claimed [I was lonely] [in order to get you to visit [e]].

Despite apperances, Nissenbaum (2000) argues, the two gaps are bound by different antecedents, so that PG constructions are not instances of extraction out of an adjunct island. As first argued by Chomsky (1986), The PG construction should be viewed as an instance of null operator movement, (cf. see Chomsky (1986), Browning (1987), Postal (1998), Nissenbaum (2000)), similar to the type of relative clauses illustrated below and to other constructions.

(117) a person [*Op* I gave the book to t]
       a man [*Op* I used to admire t]

A phonetically null operator *Op* originates in the position of the PG in the adjunct or of the relative gap, and takes scope over its own clause. The licensing gap arises as a the result of an independent A'-movement of a DP in the main clause:

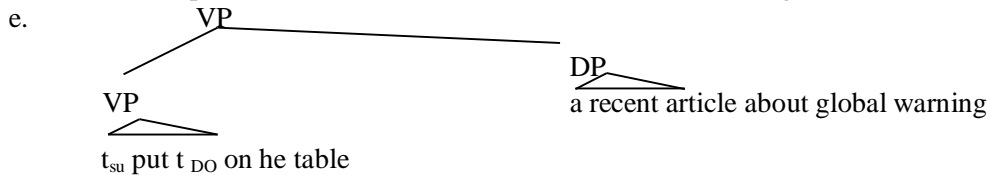(118) He filed t_{DO}, [Op_j without reading t_j], most of the letters he had got.

This analysis raises the issue of how the two apparently independent chains combine, since the parasitic gap is surely interpreted as if it were a variable bound by an antecedent, namely, by the same antecedent that binds the licensing gap.

The answer comes from the semantics of the PG construction, which in its turn gives a good hint about its syntax.
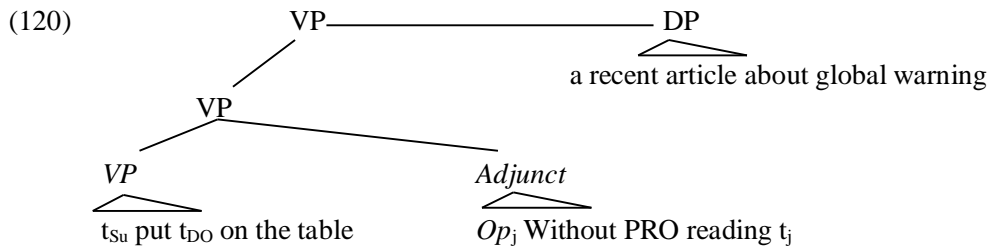
Consider the interpretation of a sentence involving HNPS. Under the DP movement analysis of HNPS, we can asume that the semantic principles used to interpret the resulting structure are the same as those used for interpreting chains in general. Movement of the Object to a VP peripheral c-commanding position, leaves behind a trace, i.e., a semantic variable, and is equivalent to forming a predicate out of the clause (VP), by λ abstracting over the variable. This predicate is attributed to the shifted DO, as semantic subject. Representing the predicate by λ-abstraction, the interpretation of the clause shifts from propositional, *John put a recent article about global warming on the table*, to a one-place function *λx.John put x on the table*, which is predicated of the raised DP, *a recent article*

about global warming. The interpretative steps are in (119a-c), and the syntactic representation of HNPS sentence is (119e).

(119) a. [VP John put a recent article about global warming on the table (proposition)
b. [VPJohn put t on the table][a recent article about global warming]VP] (HNPS)
c. λx (John put x on the table) [a recent article about global warming]
d. John put on the table a recent article about flobal warming.

e.
```
            VP
          /    _____
        /                     \
      VP                       DP___
     /__\              a recent article about global warning
  t_su put t_DO on he table
```
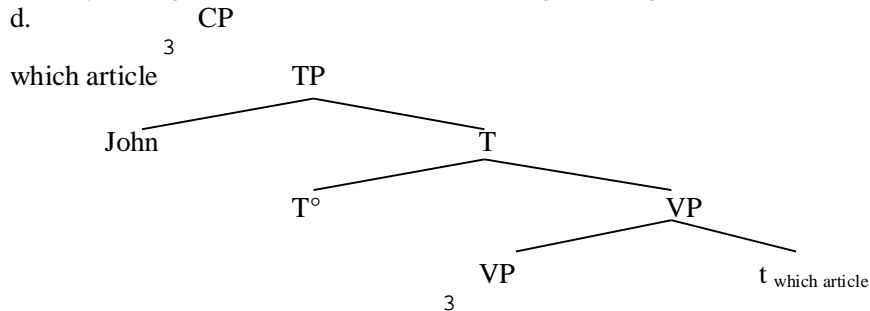
The interpretation of the adjunct is similar. The null operator construction corresponds to the formation of a one place predicate out of a clause, again by λ-abstraction over the trace of the operator. (Larson (1988)). This predicate can apply to any DP found in a suitable c-commanding configuration. The interpretation of the PG construction is now straightforward. The interpretation of the adjunct is that of a predicate; as a result, in a configuration like (120), the λ-abstracted lower VP segment composes semantically with its sister (the modifying adjunct), yielding a *conjoined predicate* whose open argument position is bound by the raised, HNPS-ed DP.
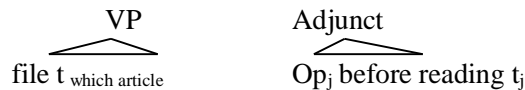
(120)
```
              VP—————————————— DP
             /                 /__\
            /        a recent article about global warning
          VP
         /    _____
        /                     \
      VP                     Adjunct
     /__\                     /__\
  t_Su put t_DO on the table   Op_j Without PRO reading t_j
```

Any construction in which a DP raises to target the VP, c-commanding it, should allow an adjunct to form a complex predicate sructure with the VP, yielding an interpreretation as a conjoined predicate of the raised DP, so that PGs are licensed. The presence of PGs systematically correlates with this structure whether the DP is an overt category, as with HNPS, or an unpronounce copy (trace) left by successive cyclic movement in other types of A' - Movement rules.

PGs are then licensed not only by HNPS, but by other types of A'-Movement as well; here are a few examples:

(121) a. Which article did he file before reading? (questions)
b Fred, I talked to -- [in order to impress--]] (topicalization)
c. Mary is tough to talk to -- [without offending--] (Tough-Movement)

d.
```
                    CP
                   /  \
                  /  3 \
       which article    TP
                       /  \
                     John   \
                       \      T
                        \    /  \
                         T°    VP
                        /     /  \
                      VP    VP   t_which article
```
3

$$\overset{\displaystyle \text{VP}}{\overbrace{\text{file t}_{\text{ which article}}}} \qquad \overset{\displaystyle \text{Adjunct}}{\overbrace{\text{Op}_j \text{ before reading t}_j}}$$

Nissenbaum's conjecture is that a configuration of type (120), with a DP c-commanding the compound predicate is an *obligatory stage* in the derivtion of PG. He concludes that in all the examples of A' movement, if PGs are licensed, the moved DP first targets the periphery of the VP, licensing the PG and only then moves to the left (SpecCP). The representation (121d) is an intermediate stage in the derivation of (121a):

Nissenbaum (2001:29) concludes that "successive-cyclic A' Movement targets a specifier positon of every VP along the way to the final landing site (in addition to every CP, a fact that is already feirly well established)."

Nissenbaum's analysis, if correct, has important consequences for the understanding of HNPS. First, a technical detail: HNPS targets a specifier position rather, than a position of adjunction. This is in line with the view that heads have multiple specifiers. Secondly, a substantive result has emerged: if HNPS feeds all instances of A'-movement, and if it has clear semantic effects (the formation of complex predicates, problems of scope), then HNPS should be viewed as part of narrow syntax.

7.4. ***Clause Shift as Heavy NP Shift***. Clauses are by definition "heavy" constituents which tend to appear at the periphery, by virtue of End-Weight and End-Focus. There are two strategies which allow argument clauses to appear at the right periphery: the first is Extraposition (functional for subjects and objects alike). In this case the clause appears at the right periphery, but a pronoun in a case position indicates its syntacitc function. The second strategy is Clause Shift. The clause is simply adjoined to the phrase, usually the VP containing it. Here are comparative examples. Clause Shift applies only to object clauses.

(122)   a. They never mentioned it to the candidate [that the job was poorly paid]. (extraposed construction)
        b. We require it of our employees that they wear a tie.
        c. John regretted it deeply that Georgina was pregnant.
        a'. They never mentioned to the candidate that the job was poorly paid. (Clause Shift)
        b'. We require of our employees that they wear a tie.
        c'. John regretted deeply that Georgina was pregnant.

Since a clausal object is normally a focus and is heavy, sentences where Clause shift does not apply are fairly awkward, if not downright ungrammatical, as can be seen by comparing the examples below:

(123)   a. Mary said t quietly [that she wanted to drive].
        b. John knew t from experience [that the law was unfair].
        c. They wrote to the lawyers that the firm was going bankrupt.
        a'. ?*Mary said [that she wanted to drive] quietly.
        b'. ?*John knew that the law was unfair from experience
        c'. ?They wrote that the firm was going bankrupt to the lawyers.
        d. ?They informed me [that we had lost the war] yesterday.
        d'. They informed me t yesterday that we had lost the war.

A second remark is that, Clause Shift does not need to leave behind a case-marked trace (Webelhuth (1991)). An examples is provided by sentence (123d'), which exhibits movement out of a position which is not case-marked.

7.5. ***Extraposition and Heavy NP Shift. More on the status of these rules. A re-analysis of right movement rules***. The similarity between HNPS and Extraposition cannot have gone unnoticed.

a) Both of them relate to discourse rules ("heaviness").

b) Both of them involve prosodic and pragmatic properties: the constituent which is moved is often an (informational) focus.

c) Both of them involve interpretational (semantic) effects.

d) Both appear to involve movement to the right.

e) Both are optional at least sometimes.

All of these properties raise difficulties of interpretation. One challenge is the fact that Extraposition and HNPS/ Clause Shift involve movement to the right. At stake is an empirical fact. Empirically, there is a fundamental asymmetry between movement to the right and movement to the left. At least A'-movement (e.g. *Wh*-Movement, Topicalization, etc.) to the left is unbounded, so that the displaced constituent may appear several clauses away from its initial position (cf. (124) below). In contrast, right movement rules are strictly bounded. Extraposition moves a clause to the end of its VP, not higher, HNPS is also fairly local, since as shown above, the DP/CP moves to the end of its containing phrase and no further.

(124)   Who did you say that Mary promised that she would contact t_i in spring /
Peter, you said that Mary promised that she would contact t_i in spring.

As early as 1967, Ross had stated the core locality requirement on rightward movement, which is known as the Right Roof Constraint, in (125):

(125)   Rightward movement may move an element X to the right edge of the cyclic node which most immediately contains X, but no further.

Given the very real difference between left and right movement, several analysts have proposed different means of dealing with right movement. The most radical solution, adopted by the anti-symmetric programme (cf. Kayne (1994)), is to simply eliminate right movement, re-analysing apparent examples of right movement as involving base-generation (Merge) and left movement. (See below.) Another possibility, one that we will explore, is to assign right movement rules a special place in the derivation.

A second difficulty regarding Extraposition and HNPS is their optionality. This is related to the difficulty of understanding exactly what causes them. Unlike other rules (Inversion, A-movement), Extraposition and HNPS do not seem to involve the checking of any morpho-syntactic feature.

A third problem is that these rules are discourse-related. They have prosodic and pragmatic, information structure effects. This opens the possibility of regarding them as part of a stylistic component, or of the phonological component, anyway a component of the grammar that need not be visible to LF.

Extraposition and HNPS are thus problematic in many respects, from the point of view of minimalist theory. As already suggested, some linguists derive their special properties from the special status that they have in the grammar, other simply eliminate them regarding them as disguised left movement rules. We will refer to both positions:

a) *Right Movement rules as post-cyclic/ post- phase rules of the phonological component. An alternative.*

Linguists like Mc Closkey (1999), Landau (1999) exploit the property that right movement rules generally have discourse and prosodic effects. This suggests either that they belong to the phonological component, as proposed by Landau (1999) for Extraposition, or at

least that they are "late" rule, applying after Spell-Out. A very clear statement of this position is Mc Closkey (1999).

Mc Closkey (1999) analyses Irish, and groups as a natural class the following rules: Clause Extraposition, Relative Clause Extraposition, Extraposition from NP, HNPS, Light PP Postposing: They have a cluster of properties, in addition to being instances of right movement. One property is that "interpretative mechanisms seem to be blind to their application". (Mc Closkey, 1999: 205). Secondly, the "mechanisms which determine these right positionings show a sensitivity to prosodic factors". All of these rules are *focus related*. Mc Closkey characterizes them as post-cyclic rules of the phonological component.

Chomsky (1998, 1999), reviving the older idea of cyclic nodes and cyclic derivations, proposes that derivations proceed by "phases". The two cyclic domains (phases) that he accepts are the VP and the CP. The VP, roughly corresponds to the lexical-thematic domain, in the sense that it is in this part of the derivation that the lexical c/s selectional properties of the items are at work. The CP phase corresponds to the functional and operational domain, this is the part where the formal morpho-syntactic features and operator features are checked. Chomsky (1998) suggests tentatively that the operation Spell-Out, which hands off constructed syntactic objects to morpho-phonology and phonology for processing is a *phase level operation*. Phases correspond to cyclic nodes and mark derivational stages at which objects are constructed whose internal parts are inaccessible to further manipulation. The older intuition of cyclic derivations was that all rules were first "tried" on the first cycle, before the derivation proceeded to the second cycle.

Accepting Chomsky's view of derivation by phases, Mc Closkey characterizes right movement rules as postcyclic, as representing "a class of rightward movements which apply as part of the derivation of Phonological Form, that is, in the portion of the derivation in which interpretative mechanisms (LF) have no access, but in which a sensitivity to prosodic factors would be natural." Mc Closkey speculates that, if such rules do exist, the possibility opens that we could maintain that narrow syntax indeed involves only left movement rules, coexisting with rightward displacements in the derivation of PF representations. This would mean that all rightward movements are "phonological in this sense"

The advantage of this position is that we can immediately derive the locality contained in the Right Roof Constraint. Right movement rules will apply *at the end of each phase*. This is a convenient description for both Extraposition and HNPS, which target the periphery of the VP, a cyclic node. If rightward movements are part of the post-Spell-Out computation and if phases mark the derivational points at which-Spell-Out has access to syntactic objects, then phases will define the domain within which rightward movements may apply. Right ward movement beyond the borders of a phase will be impossible. This is the explanation of the asymmetry between right /left movement rules and this also explains the locality constraint on right movement rules.

However, accounts like Mc Closkey's and Landau's suffer from a major shortcoming: If Extraposition and HNPS apply after Spell-Out, then their effects are invisible to LF. However, Landau's account of control presupposes that LF, the level where control is dealt with, has access to the extraposed position, since certain configurations of non-obligatory, long-distance control depended on the possibility to relate the controller to the extraposed infinitive clause (see discussion above). In the same way, if HNPS influences scope properties and licenses parasitic gaps it should be visible to LF.

An alternative would be to consider rules like Extraposition and HNPS *cyclic-final* or *phase-final* rather than post-phase, allowing that last cyclic operations may be sensitive to prosodic considerations. This would allow maintaining Landau's formulation of Extraposition. Operations that apply during the phase are Merge and Move with the view to checking features. Movement is always to the left. At the end of a phase, one might allow rules like Extraposition and HNPS to take place; these rules have both interpretative, and prosodic effects. They are

limited to moving a phrase to the right end of the phrase containing it. This view preserves the idea that these rule apply on constructed syntactic objects, deriving from it the locality constraint on such displacements. Additionally, the interpretative effects of Extraposition and HNPS are also accommodated. The analysis of rightward movement rules as phase-final operations is thus plausible and descriptively adequate. This interpretation may even incorporate Nissenbaum's view of HNPS, if we grant that cyclic Spell-Out does not affect constituents placed on the edge (right/left), but affects constituents inside the first projection of the head. (see Nissenbaum (2000), and Chomsky's 1998 Phase Impenetrability Condition). Currently, such a middle ground position appears to be desirable, if tenable.

In the next section we sketch a more radical proposal of eliminating right movement rules by re-analysing them as left movement rules

b) *Right-movement rules as disguised left-movement rules*.

The pursuit of simpler and more constrained grammars has led to proposed simplifications of X'-Theory. One of these is Kayne's antisymmetry theory (Kayne (1993), (1994)). Kayne seeks to eliminate statements about left-to-right order entirely from the theory of phrase structure. Under his approach, the hierarchical relations in a syntactic structure should be sufficient to account for all of its properties, including the order of the constituents. Phrase structures are legitimate only if the hierarchical structure entails a unique linear ordering.

The illuminating intuition of the anti-symmetric programme is to have found a hierarchical order that bi-uniquely corresponds to the linear precedence relation. The hierarchical relation between non-terminal nodes that corresponds to the linear, left to right precedence order of the terminals is *asymmetric c-command*. Thus, informally, for all non-terminal nodes A, B such that A asymmetrically c-commands B in hierarchical order, if A dominates *a* and B dominates *b*, *a* precedes *b*.

(126) XP
          3
    AP   X'
    | 3
    | X   BP
    | | |
    A | B
    | | |
    a   x   b
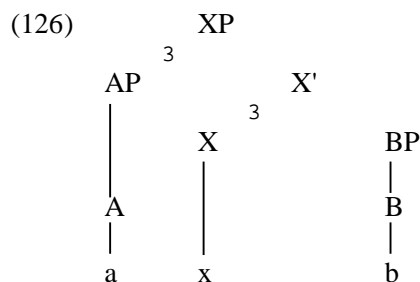
One consequence of Kayne's theory is that all languages will be analyzed as right branching structures; all superficial differences between VO and OV languages will be attributed to movement from an essentially uniform right-branching D-structure. (See Zwart (1993) for an example of how this can be done for Dutch, an OV language.)

Another important consequence of Kayne's proposal is that there is no movement to the right and no right-adjunction either. Basically the problem for right adjunction structure is that they cannot be ordered, in Kayne's system. Apparent instances of right movement represent instead the composite effect of two movements to the left. The empirical argument in favour of this position is precisely the asymmetry of left movement rules vs. right movement rules discussed above. The conceptual argument in favour of this position is that grammar is thus more constrained, allowing only movement to the left.

Several re-analyses of Heavy-NP Shift as left movement are already available, for instance, in Rochemont and Culicover (1998) and Kayne (1998). It is the latter's analysis that we briefly present.

A general strategy for producing the order B-A from underlying A-B, when one constituent cannot move for some reason is to move the other constituent. So while it appears that the heavy DP is moving to the right of the VP, if this movement is ruled out, it is natural to seek a

derivation in which the VP moves to the left of the heavy DP. But if the VP moves to the left of the DP, we must explain how it is that the heavy DP has been "designated", how it has got to be to the left of the VP in the first place. Research in the nineties, investigating the displacement of large chunks of structure (e.g., Koopman and Szabolcs (2000)), has brought to light a class of rules of Remnant Movement, movement of a constituent containing the trace of previously extracted material.
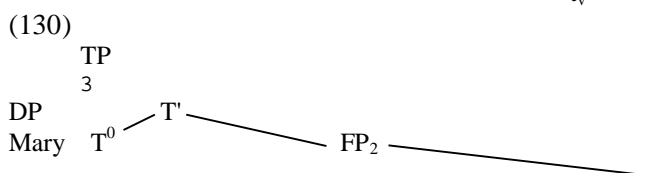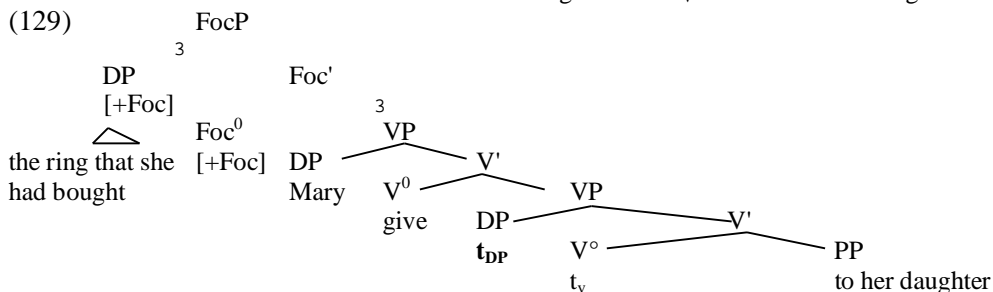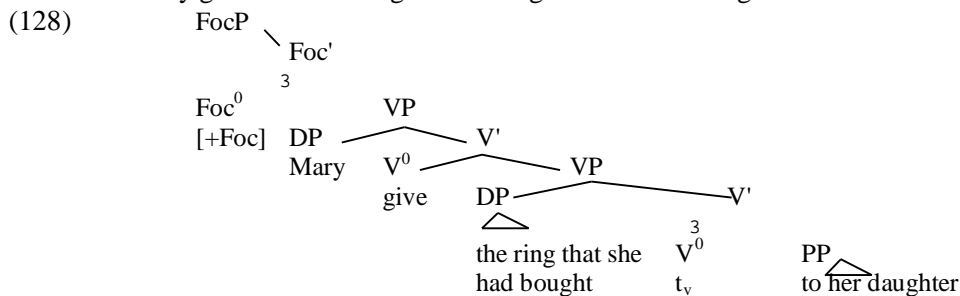
   Remnant movement. A category XP containing the trace of an extracted element can move to a position that c-commands the extracted element (a higher specifier) (cf. Koopman & Szabolcsi (2000:4).
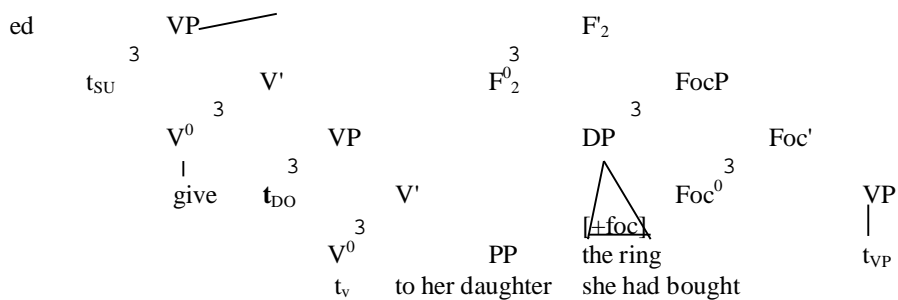
   Kayne's 1998 re-analysis of HNPS as a leftward movement rule assumes that the heavy DP is first attracted to the left by some head, say Focus, which has a strong feature, so that movement is now obligatory. In fact there are empirical reasons both within English and crosslinguistically for postulating a Foc(us)P right above the VP in UG. (See Belletti & Schlonsky (1995), Kayne (1998)). HNPS becomes an example of Focus preposing. The heavy DP moves to the left to check a Focus feature. The rest of the VP then undergoes Remnant Movement. The VP moves to the specifier of higher functional projection.

   Consider the derivation of (127b). The initial structure looks as in (128a), with the DO preceding the IO. The DO, marked as a Focus, moves to check the [+Foc] features of the Focus head. Next the remnant VP moves to the specifier of an immediately higher projection. The word order obtained is the desired one. The functional heads postulated do not carry head-related features of the verb (Aspect, Tense, etc.), so they are not L-related. This means that the specifier positions of these heads are A'-positions. The object that has undergone HNPS correctly ends up in an A' position.

   One problem needs to be addressed at once . There is a patent violation of the Proper Binding Condition in (130), in the sense that the trace of the DO in the raised VP (in bold) is not bound (c-commanded) by its antecedent. The problem, however, is easily solved by reconstruction, allowing LF to interpret the trace inside the lower VP, in bold in (129).

(127)   a. Mary gave the ring that she had bought to her daughter.
        b. Mary gave t to her daughter the ring that she had bought.

(128)
```
            FocP
               \
                Foc'
                 3
       Foc⁰          VP
       [+Foc]  DP        V'
               Mary  V⁰        VP
                     give  DP        V'
                           △
                    the ring that she    V⁰      PP
                    had bought          t_v    to her daughter
```

(129)
```
            FocP
            3
       DP              Foc'
       [+Foc]           3
       △        Foc⁰        VP
  the ring that she [+Foc] DP        V'
  had bought            Mary  V⁰        VP
                             give  DP        V'
                                  t_DP    V°        PP
                                         t_v     to her daughter
```

(130)
```
      TP
      3
   DP      T'
   Mary  T⁰        FP₂
```

```
ed          VP                                    F'₂
         3                                       3
     t_SU        V'                          F⁰₂              FocP
              3                                            3
          V⁰        VP                      DP              Foc'
          |      3                          /\          3
        give  t_DO    V'                   /  \    Foc⁰         VP
                   3                       /    \  [+foc]        |
                V⁰      PP               the ring              t_VP
                |                      she had bought
               t_v   to her daughter
```
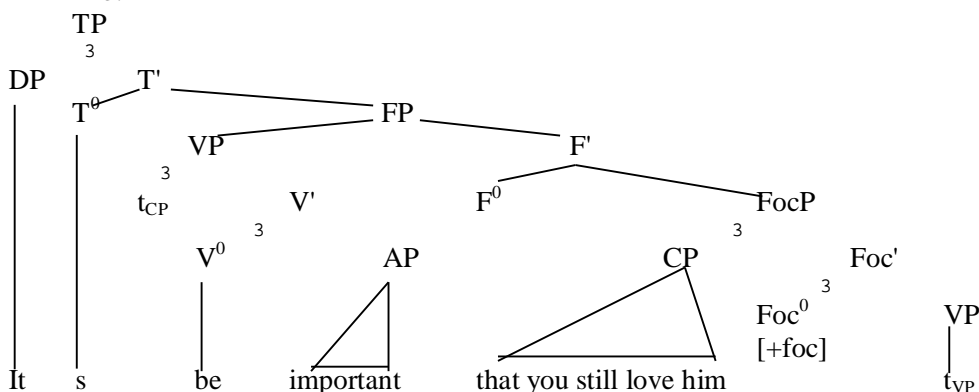
The analysis proposed by Culicover and Rochemont(1998) is quite similar, except that in their opinion what attracts the heavy DP to the left is a head that has a strong nominal feature, as well as a strong verbal feature, respectively satisfied by moving the heavy DP to check the nominal feature, and then the remnant VP, to a higher specifier of the same head.

While technically the analysis of HNPS raises no serious problems, further research is needed to prove the viability of the intellectually challenging anti-symmetric programme.
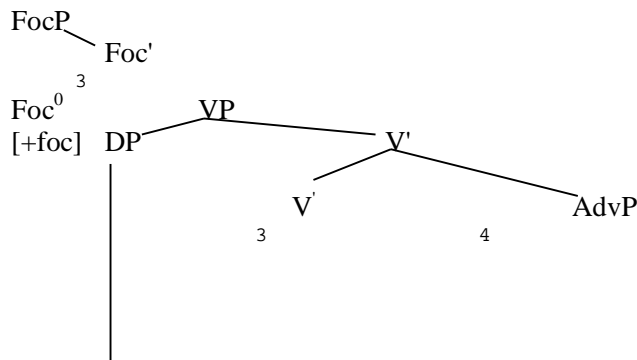
7.6. ***Back to Extraposition***.   The same leftward movement analysis may be used for Extraposition. To the extent that Extraposition is focus related, one may say that the extraposed clause is attracted to a Foc head that has a strong focus feature. Here is a derived structure containing an extraposed subject clause. Remnant movement applies as before.
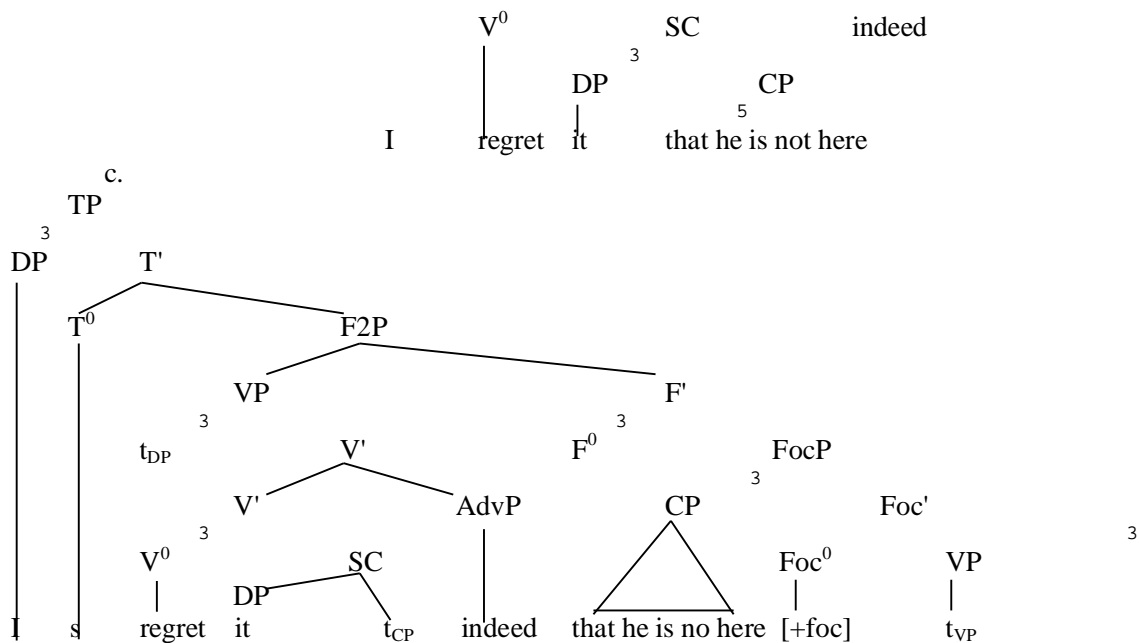
(131)   a. It is important that you still love him.
        b.
```
        TP
      3
  DP       T'
        T⁰      FP
              3          F'
          VP        F⁰          FocP
        3                     3
    t_CP      V'          CP          Foc'
           3           /\         3
        V⁰     AP     /  \   Foc⁰        VP
        |    /\      /    \  [+foc]       |
  It  s be important that you still love him    t_VP
```
        Object extraposition raises no special difficulty either. We could exploit the result that we have got, namely that the CP is a predicate whose subject is the pronominal *it*. We propose to use small clauses to represent object extraposition structures, since theories that eliminate right movement, also eliminate right adjunction: Example (132a) below has the structure in (132b, c). The predicate represents new information about the known event. The CP will thus move to check the Focus feature. Just as before, the remnant VP moves to a higher specifier:

(132)   a. I regret it indeed that he is not here.
        b.
```
              FocP
                   Foc'
         Foc⁰   3
        [+foc]  DP        VP
                      3
                    V'          AdvP
                 3           4
                 3
```

```
              V⁰              SC              indeed
              │           3
              │          DP              CP
              │          │          5
    I       regret      it        that he is not here
```

c.
```
        TP
      3
    DP        T'
            3
          T⁰          F2P
                    3
              VP              F'
            3             3
          t_DP    V'        F⁰        FocP
                3                   3
              V'    AdvP    CP      Foc'
            3                 △              3
          V⁰        SC              Foc⁰    VP
          │      DP 3                │      │
          │      DP    SC           [+foc]  t_VP
    I  s regret  it    t_CP  indeed that he is no here
```

Conclusions

1. The left movement analysis does justice to the fact that both Extraposition and HNPS are focus related and discourse related rules, which may have interpretative effects. Moreover, the left movement analysis achieves a reunification of the two rules. The analysis is more complex, relying , as it does , on the additional mechanism of remnant movement. Further research will show whether such a powerful mechanism should be allowed in UG.

2. On balance, the analysis of Extraposition and HNPS as last cyclic appears to be simpler and preferable.

8. *That* Deletion. A Minor Problem?

8.1. **The facts**. It is well known that the complementizer *that* can be omitted in post-verbal object clauses.

(133)   John says [the key opens the chest].

The absence of the complementizer is not possible in preverbal position, that is, it is not possible for subject clauses, or for topicalized object clauses.

(134)   *[He is here] is nice.
         *[Mary had left] nobody had noticed.

While for preverbal clauses *that* Deletion is impossible, for object clauses the rule is in principle possible, but it is constrained by register and other stylistic factors.

8.2. **The IP analysis**. Though *that* Deletion would appear to be unproblematic, it is not clear whether the complement clause is a CP with a null head, as first proposed by Stowell (1981), or whether it is simply a bare finite IP and no CP-level is projected, as proposed in Webelhuth (1991) or Doherty (1997).

(135)   a. John says [$_{CP}$ ∅[$_{IP}$ the key opens the chest]].
           b. John says [$_{IP}$ the key opens the chest].

Doherty (1997) makes a strong claim that complements where *that* is missing are IPs. He starts by noticing a number of anomalies of the CP hypothesis. Admittedly, the CP hypothesis has the advantage of uniform subcategorization, i.e., verbs uniformly select for CPs, instead of taking both IP and CP complements. However, the required free variation between null and overt C^0 raises some quetions in itself: Thus, if it is assumed that null complementizers are lexically inserted, the free alternation between null and overt C^0 is anomalous: there is no analogous case of free variation between a null and an overt variant of a functioanl head. Other null heads which have been positied for English (for example, D^0) are either obligatorily null or obligatorily overt.

Doherty argues that predicates select both IP and CP on the basis of empirical facts unexplained under the hypothesis that the complementizer is present, but null. He starts form the well known fact that it is impossible to have adjunction to a phrase which is s-selected by a lexical head.

Thus, given that verbs selct CPs, it is not possible to adjoin anything to the CP. Thus a topic in English must appear to the right of the head, not to the left. In embedded clauses, Topicalization is grammatical only when the Topic appears to the right of the complementizer:

(136)   a. I hope that this book you will read.
           b. She claims that Guiness he likes but that whiskey he hates.
(137)   a. *I hope this book that you will read.
           b. *She claims Guiness that he likes, but whiskey that he hates.

Consider now the following examples, assuming that the complements are headed by a null complementizer:

(138)   *I hope[∅ this book[you will read]].
          *She claims[$_{CP}$ ∅[$_{IP}$ Guiness he likes]].

The topic appears to the right of the null complemtnizer, as in the correct examples, but the sentence is ungrammatical. However, under the hypothesis that verbs select IPs, the ungrammaticality of examples (138), follows from the same prohibition of adjunction to a phrase (= the IP) selected by a lexical head.

Let us tentatively accept that complements which are not headed by *that* are IPs not CPs. One still has to give an account of the distributional restrictions of *that*-less clauses under the IP hypothesis. Webelhuth (1992) proposes an explanation of the distributional differences between IPs and CPs, which rests on the proposal that the categorial distinction between IP and CP is equivalent to the distinction between verbal and nominal elements. More exactly, the IP is a fully verbal category, while the CP has nominal properties as well: CPs have φ-features and may also check case. If we assume that verbal elements are excluded from subject position, the failure of bare IP to appear as sentential subjects, illustrated in (134) above follows.

9. Pesetsky's analysis of the That Deletion: another CP account

In this section we present a different account of *that* Deletion, proposed in Pesetsky & Torrego (2000). The account is relevant to the extent that the deletion of *that* proves to be related to other apparently widely different phenomena of English. The analysis is also a very clear instant of the feature checking view of syntax proposed in the Minimalist Program, which we summarize in section 9.1.

Given the wide range of data involved in Pesetsky & Torrego's analysis, it will become possible to sketch an analysis of root interrogative and exclamative clauses. Some necessary descriptive background on *wh*-clauses is given in the appendix.

9.1. *The EPP property of (certain) features*

A basic hypothesis of minimalist syntax is that all uninterpretable features of the items involved must be checked before LF, since their presence at LF is not legitimate. While uninterpretable features disappear once they are checked, interpretable features survive checking and reach LF, so that they may be involved in the derivation several times.

Chomsky (1998, 1999) acknowledges two mechanisms of feature checking, Move and Agree (in addition to Merge). In the case of Agree, a connection is established between an uninterpretable feature of a head and another occurrence of the same feature, in a sufficiently local domain (the sister domain). This connection suffices to delete the uninterpretable features. Therefore, movement (overt or covert) is not always required for checking.

In other situations, an uninterpretable feature F on head X requires that an Agree relation between F and a local Y should be followed up with copying of material from Y into the local environment of X. If the checking of feature F requires the overt movement of a constituent, the feature *F is said to have the EPP property*. The term 'EPP property of a feature' represents a generalization of the EPP feature of Tense, described above, since the EPP feature of Tense, requires movement of a constiuent to the TP (to the specifier of TP, or to the head T itself). In Chomsky (1998), it is suggested that other heads have versions of the same requirement as T. The EPP property may be satisfied either by head movement or by phrasal movement into the head/specifier position of the head. Concluding, wherever a head requires movement of a constituent to check one of its uninterpretable features, we say that that a particular feature has the EPP property. But features may also be checked by Agree, if the head does not possess the EPP feature.

When a feature F on X enters into an Agree or Move relation with another instance of F on Y, we will say that F on X *attracts* Y. For example, *wh* Movement arises when an uninterpretable we feature on C (henceforth u*Wh* attracts a *wh*-phrase. The EPP property of u*Wh* then requires copying of the *wh*-phrase, forming a specifier of CP:

(139)
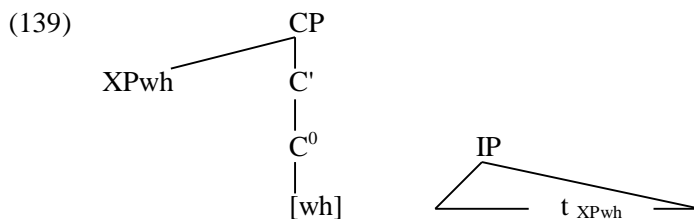
The hypothesis that movement is "triggered" amounts to the claim that an element Y moves only when attracted by a feature (of some head X) with the EPP property. More generally, heads enter into Agree and Move relations only to the extent necessary. We can summarize this as the economy Condition in (140)

(140)   ***Economy Condition***
A head H triggers the minimum number of operations necessary to satisfy the properties (including EPP) of its uninterpretable features.

Another point worth noting: it will be important that EPP is a property of a feature of a head, not a property of the head itself. Thus a head that bears features F and G might have the EPP property for F, but not for G. In this sense, EPP is a subfeature of a feature. Once an

uninterpretable feature F on X has attracted Y, F is said to be "deleted", or at least marked for deletion, because the disapperance of F on X may be delayed until a later point in the derivation. For example features marked for deletion may quite regulalry wait until the completion of a VP or a CP, categories that represent, cycles or "phases". (cf. Chomsky (1998, 1999)). The following three points are important for this account:

(141)   (1) The hypothesis that uninterpretable features must disappear by the end of the derivation;
(2) The hypothesis that movement occurs only in response to an uninterpretable feature with the EPP property;
(3) The hypothesis that a feature may remain alive for a while after being marked for deletion.

     9.2. *Three Subject/Object Asymmetries*. The interest of Pesetsky's analysis is to have included the absence of *that* in a wider class of phenomena, namely a class of subject/object asymmetries, only some of which were related to the complementizer *that.*

     a) The first is the subject-object asymmetry in (142), a problem which has puzzled gramamrians and linguists for a long time: when the subject of a *that*-clause is questioned, the complementizer *that* is necessarily deleted. When the object of a *that* clause is questioned, the presence or absence of the complementizer makes no difference. This asymmetry is traditionally known as the *that*-trace effect (cf. Chomskt & Lasnik (1977)).

     That-**trace effect** (Perlmutter, 1971)
(142)   a. Who do you think (that) Sue met ---?
       b. Who do you think (*that) ---met Sue?

     This effect is therefore, the obligatory absence of *that* introducing a CP from which the subject has been extracted.

     b) Secondly, Koopman (1983) discussed an important asymmetry in the movement of a tensed auxiliary verb form T to C in English root interrogatives. As known, in English direct (root-) questions, there is Inversion, i.e, the auxiliary raises to C^0. Inversion is obligatory if a non-subject constituent is questioned, but it is impossible when the subject moves. The movement of T to C^0 is the well-known rule ot I^0/T^0-to C^0.

     T-to C asymmetry
(143)   a. What did Mary buy?
       b. *What Mary bought ?
       c. *Who did buy the book ? [*unless *did* is focussed]
       d. Who bought that book ?

     Again *wh*-movement of the subject produces different effects from those produced by *wh*-movement of the object.

     c) In the third place, the *that* Deletion phenomenon itself may at least in part be viewed as a subject/ object asymmetry, since object clauses do not require the presence of *that*, i.e., the complementizer can be omitted, while in subject (and topic) clauses, the complementizer *that* is required.

     That-**omission asymmetry**
(144)   a. Mary thinks [that Sue will buy the book].
       b. Mary thinks [Sue will buy the book].
       c. [That Sue would buy the book] was expected by everyone.
       d. *[Sue would buy the book] was expected by everyone.

That Deletion is thus part a group of syntactic phenomena and an explanation of *that*-deletion / retention which would unify the three asymmetries has more explanatory power than an explanation that is valid only for one set of the data presented in (a)-(c) above. The starting point of the proposed minimalist analysis of these data is the T-to-C asymmetry in root questions.

9.3. *The T-to-C asymmetry and the nature of Nominative case*:

9.3.1. *Root interogatives.* If Chomsky's hypothesis about movement is correct, then the Movement of T-to-C in root quesitons must be a response to the presence of an uninterpretable feature with the EPP property in C and the presence of a corresponding feature on T. Let us therefore assume that C^0 bears an uninterpretable T feature, a feature that has the EPP property and thus attracts T, this producing the T-to-C movement visible in English root questions.

(145) **Motivation for T-to-C** [in English root interrrogative clauses]
C bears an uninterpretable T feature (henceforth uT) with the EPP property.

The asymmetry observed in questions requires explaining why the auxiliary does not raise to C when the *wh* feature of C is checked by the Nom subject. Remember that the auxiliary raises to check another feature of C, namely, its uninterpretable T feature. Consider an example like (146a)

(146) a. What did he buy t?
      b. Who t bought the book?

In direct questions, C contains two uninterpretable features, the uninterpretable feature, *uWh* and the uninterpretable Tense feature, uT. In (146a), C^0 attracts two constituents that check the two features: *what* checks the *u*Wh feature of C, while *did* checks its uT feature. Conisder example (146b). The subject *who* which moves to SpecC surely checks *u*Wh, but what deletes the uT feature in C when T-to-C movement does not take place? Pesetsky & Torrego (2000) suggest that the uT feature on C is deleted by the Nom *wh*-phrase itself, since more generally what we call Nom case is nothing but a uT feature on D/N, i.e. the nominal counterpart of Tense. As known, the subject enters a SHA relation with Tense. The two consituents check each other's features. The Tense head contains an *interpretable* T-feature, and uninterpretable φ-features (person, number, gender). The subject contains the reverse combination: interpretable φ-features, and an uninterpretable Tense feature, which is in fact the feature which is traditionally labelled Nominative. The relation between the Nom case and Tense is particularly clear in English, where the Nom case is conditioned by finite [+Tense, + Agr] Inflection, because only finite clauses have Nom subjects. Let us accept Pesetsky's hypothesis and examine its consequences.

(147) **The nature of Nominative Case**
Nominative case is uT on D/N.

Since the features of the D/N head are shared by its projection, a Nom DP/NP moved to Spec CP can delete uT on C the same way that T moved to C can. That is why T-to-C movement is unncessary, and by virtue of ecnonomy, impossible in examples like (146b). (For a different GB account of the subject/ object asymmetry in questions, see Rizzi (1990)).

9.4.2 *The that trace effect; successive cyclic wh-Movement out of embedded declaratives*. Let us turn to the *that*-trace effect now, directly relevant to *that*-complementation, since it represents a bizarre example of obligatory *that*-Deletion in *object* clauses.

We will start from the plausible assumption that uT on C is not found only in interrogative clauses, but in declaratives as well. There will again be different strategies of

deleting uT in C. Consider now the sentence below where the moved *wh*-phrase is the object and focus attention on the embedded clause:

(148)   What did John say[$_{CP}$ that Mary will buy ---]?

It as an established fact that movement of this sort must pass through the specifier of the embedded declarative CP, since operators always target the closest SpecC position. In a feature-based theory of movement, this means that the embeded C must bear *uWh* with the EPP property, so as to attract the *wh*-phrase. Movement is also constrained by Attract Closest, which says that if two constituents might in principle move to check the feature of a head, it is the closest that is attracted. This is apparent in multiple questions in English:

(149)   a. Who bought what.
         b. *What did who buy?
(150)   a. I asked what he bought.

On the other hand, once Attract Closest has been observed by moving the closest phrase to a head, a second or third phrase may move to the Spec positions of the head irrespective of how close it is to the head. (Richards (1997)). If C^0 has a *wh*-feature, it sould first attract a constituent from the TP projection, which meets Attract Closest, since it is right below the CP projection. Movement of a *wh*-phrase from anywhere other than SpecTP (from anywhere else than the subject position) violates Attract Closest Feature. But this would only allow the questioning of the subject in an embedded declarative.

It follows then, that Attract Closest is satisfied by the constituent that checks the *u*T feature of C^0, allowing then *any wh*-phrase to move and check the *uWh* feature of C^0. If Attract Closest is correct, we must assume that the embedded C in structures like (148), that is, the C of embedded interrogatives bears *u*T. Consequently, we would expect movement of T to C to accompany successive cyclic *wh*-movement. In fact we find T-to-C just in this environment in certain dialects of English, such as Belfast English (cf. Pesetsky (2000)).

(151)   ***Belfast English***
         a. Who did John say [would he see]?
         b. What did Mary claim [did he steal t]?
         c. I wondered [what did John think [would he get]]?
         d. Who did John say [did Mary claim [had John feared [would Bill attack--]]]?

The discussion points to the conclusion that C^0 in embedded declarative/interrogatives contains both *u*T and *uWh*. In Belfast English, the auxiliary raises to C^0, deleting the *u*T feature of C^0 and satisfying Attract Closest, since the Auxillairy raises from the T projection. The *wh*-feature is then checked by the cyclic moving *wh*-phrase.

Standard English appears to contradict the expectation that T-to-C movement may always accompany successive-cyclic *wh*-movement, in examples like the ones below, because they do not show Inversion:

(152)   a. What does John believe that Mary likes?
         b. Who does John believe -- will come?

But in fact the data suggest an analysis compatible with the view that T-to-C does take place, though it is made manifest in a different way. We might assume, with Pesetsky, that the Complementizer *that* is an instance of T that has moved to C. In fact this is nothing more than a proposal that had long been made for the V_2 phenomenon in Germanic language: C^0 in these

languages hosts a *uT* feature, which is checked either by the finite verb in root cluases, or by the lexical complementizer in subordinate clauses.

(153)   a. Gestern *hat* er   die Wahrheit gesagt .
        yesterday has he   the truth said
        b. What has he said ?
        c. Er sagte *dass* Maria   zuruck gekommen hat.
   he said that Maria   back   come has

A different interpretation of *that* suggests itself: *that* as checking and thus manifesting the *u*T feature of Tense. Therefore, declarative C, when it hosts successive cyclic *wh*-Movement, hosts both *uT* and *uWh*. When an object moves, the object checks the u*Wh* feature, while *that*-checks the *u*T feature. Consider the following question: Why is it that just in case the Nominative DP raises successive cyclically, the complementizer *that* cannot be used?

(154)   a. Who did John say [--will buy the book]?
        b. *Who did John say [that --- will buy the book]?

The *that* trace effect is strikingly similar to the T-to-C asymmetry discussed in the previous section. In both cases subject *wh*-extraction prevents a word from occurring in C that is found there otherwise. In the case of root questions, the element barred from C with subject *wh*-movement is the tensed auxiliary verb. In the case of the *that* trace effect, the element barred from occurring in C is the complementizer C = *that*, projected as the sister of TP (cf. (154b)). The reason why *that* cannot occur when the subject is questioned is easy to grasp. When a Nom *wh*-phrase moves, it is able to check both *uT* and *uWh* at once. Recall that the subject moves from SpecT, satisfying Attract Closest. Movement of the *wh*-subject phrase to SpecC checks both the *u*Wh feature of C and the *u*T feature of C^0, since as assumed, the "Nom" of the subject is in fact *uT* on the subject. The appearance of *that* would be superfluous, and therefore impossible, by the principle of economy. In sum, when an object moves, the object checks the *u*Wh feature, while *that* checks the *u*T feature. If a Nom *wh*-phrase moves, then it is able to check both features.

As shown in (155), checking of *uT* in C by the subject is compatible with movement of a non-subject through the Spec of C. Since the subject *Mary* in (155) is in SpecC, examples like (155) can only be consistent with the hypothesis that *heads have multiple specifiers* (cf. Chomsky (1995)), so that the lowest specifier is occupied by the Nom cheking T, while the *wh* phrase goes through a second outer specifier; (see (155b)). As before, it must be assumed that T is checked first, since elements in the T projection (the head T and its specifier^0 are closest to the CP projection.

(155)   a.What did Sue say [Mary will buy ?]
        b.
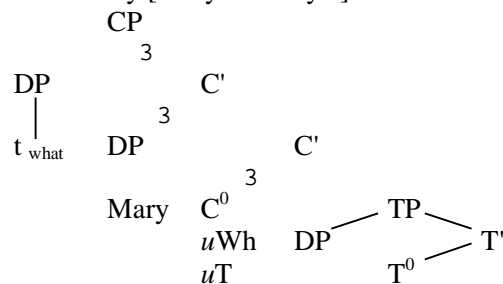
9.4. ***That* Deletion.** This interpretation of *that* leads to a different account of sentences with *that*-Deletion, an analysis that continues to claim that these sentences are CPs (contra Doherty's analysis above). Consider examples like (156) and (157):

(156)   Mary thinks [$_{CP}$ that Sue will buy the book].
(157)   Mary expects [$_{CP}$ Sue will buy the book].

As before, we assume that C contains uT, which must be deleted. In embedded declaratives, C may choose freely between T^0 and the Nom subject, when it looks for a way to delete its uT feature. This is expected, since both T and the Nom subject bear a Tense feature. If T is chosen, *that* is present, if the Spec of TP is chosen to check uT in C, the subject phrase (= Spec TP) moves to Spec CP and the uT on C is checked, the result being an example like (157).

As already discussed in (148) above, checking of the uT in C by the subject is compatible with movement of a non-subject through the spec of C if the embedded claus is interrogative. Since the subject *Mary* in (148) is in SpecC, examples like (148) force the hypothesis that heads have multiple specifiers, so that the lowest specifier is occupied by the Nom cheking uT, while the *wh* phrase goes through a second outer specifier. As before, it must be assumed that T is checked first, since elements in the T projection (the head T and its specifier) are closest to the CP projection.

Importantly, there is empirical evidence in favour of this feature checking account of *that*-Deletion. One property of embedded declaratives without *that* may provide two arguments of interest:

a) The presence of *that* is (nearly) obligatory in embedded declarative clauses in which an adverbial or topicalized pharse has been fronted:

(158)   a. Mary is claiming that [for all intents and purposes] John is th mayor of the city.
         b. ?? Mary is claiming [for all intents and purposes] John is th mayor of the city.
(159)   a. Mary knows that [books like this] Sue will enjoy reading.
         b. * Mary knows [books like this] Sue will enjoy reading

We cannot provide a detailed account of adverb fronting or topiclization. Let us suppose, however, that the fronted adverbial in (158) and the topicalized object phrase in (159) are dominated by TP, perhaps as specifiers external to the Nom subject. The presence of these phrases has an effect on what constituent may delete uT on C, if Attract Closest is correct. Under topicalization of a constituent, the Nom subject in SpecT and T are no longer equally close to C, because of the presence of the outer specifiers that c-command the subject. Consider (160)

(160)   [$_C$. uT [$_{TP}$ topic [$_T$' subject [$_T$ T^0...]]]

In (160), while T remains the closest head to C, the subject is no longer the closest XP to to C, since now the Topic phrase is closer. Only T^0 thus counts as maximally close to C. Consequently, given Attract closest, C must choose T rather than the subject to delete its uT feature. This yields the obligatory *that* requirement, in clauses where one constituent is topicalized, an empirical fact noticed by Doherty (1997) too.

b) A further consequence is also expected. Consider a configuration like (160) in which, additionally, C also, bears u*Wh*, not only uT, and in which the subject is a *wh*-phrase - e.g. (161):

(161)   [C. uT, u*Wh* [$_{TP}$ topic [$_T$' who [$_T$ T^0...]]]

In (161, 162) too, the Nom subject is farther from C than the Topic. The subject is no longer the closest phrase that might check uT, since again the Topic intervenes. Hence uT in C^0 must be checked by *that*, which is the closest constituent that bears a T feature. The result is that a

configuration like (162) produces an anti *that*-trace effect, i.e., a configuration, where even though the subject of a *that*-clause is questioned, *that* is obligatory. Culicover (1993) and Browning (1996) provide examples like (162), illustrating configuration (161), where *that* is required:

(162)   a. Sue met the man *who* Mary is claiming[that for all intents and purposes ---was the mayor of the city].
        b. Bill, who Sue said [that to the rest of us --might seem a bit strange], turned out to be quite ordinary.

9.5. *Contraints on the omission of THAT*
The analysis of the *that*-trace phenomenon discussed above can shed new light on the restrictions on *that* deletion, illustrated below. Specifically, *that* may be missing in object clauses, but not in subject clauses or topicalized (object) clauses:

(163)   a. That they will win the war is widely believed.
        b. *They 'll win the war is widely believed.
(164)   a. He doesn't believe they will win the war.
        b. *They'll win the war he doesn't believe.
        c. That they will win the war he doesn't believe.

We accept Pesetsky's suggestion that, like subject clauses, topicalized clauses sit in SpecT. Under this assumption, a constiuent clause may move to SpecT only if its features match those of T. The T head has interpetable tense and uninterpretable φ-features. The key assumption is that a clause (= CP) may become the specifier of finite T or C only if its head bears a T feature.

Let us now turn our attention to a difference between embedded declarative clauses with and without *that*. We analyzed this alternation in (156) and (157) as the consequence of uT on C attracting T or attracting its specifier:

(165)   a. ... [$_{CP}$ [T that $_j$+ [C+T] IP Sue will$_j$ buy the book]]
        b. ..[$_{CP}$[Sue, uT]j [C,uT] [IP t$_{sue}$ will buy the book]

Conisder now (165a). In (165a) head to head movement has taken place, with the result that C includes an instance of T in it. Since T here signals the actual Tense of the sentence, the Tense property is interpretable and does not delete. Therefore at the end of the CP phase, a CP headed by *that* still possesses a T feature. The presence of interpretable T in C explains why CPs headed by *that* can be attracted to the SpecT position of the matrix clause, as illustrated in the examples above.

Consider now (165b), where it was the Nom subject that checked the uT on C. The T/Nom feature of the subject is uninterpretable, so it will be erased at the end of the CP phase of the subordinate clause (see next section). As a result, at the end of the CP phase, the subordinate CP in (165b) contains no T feature, and therefore cannot be attracted to SpecT. Declarative subordinate clauses which are not headed by *that* cannot appear in SpecT, in other words, they do not topicalize and cannot be subject clauses.

(166)   a. [That Sue will buy the book] was expected by everyone.
        b.* [Sue will buy the book] was expected by everyone.
(167)   a [That Sue will buy the book] proves that she's rich.
        b.*[Sue will buy the book] proves that she's rich.

Note the feature checking mechanism.Consider (167) below once more:

(168)   He said[CP Mary[TP-- had left an hour ago]]

In (168) the Nom subject has been attracted to SpecCP, by the uT feature of C. But the subject DP had already checked the T feature of Tense itself. This means that uT on the subject did not disappear while the subject was still in SpecTP, despite the fact that T entered an Agree relation with uT on the subject. Cases of this type suggest that uninterpretable features which have been checked are merely "marked for deletion", but they are actually deleted at the end of the respective phase of the derivation. In the particular case at hand, the T/Nom feature of the subject is erased once and for all after the embedded CP is fully built. (i.e., at the end of the subordinate CP phase); as a result the embedded C projection lacks a T feature, so the CP cannot be attracted to matrix Spect projection, as detailed above.

Remark. We had earlier assumed that CPs may be attracted to SpecT by virtue of their φ-features. If Pesestky and Torrego are correct, such an assumption is insufficient; a Tense feature is (also) required.

The derivation observes a Match Condition which requires that all the features of an attractor should be present (in interpretable or uninterpretable form) on the elements that it attracts.

(169)   ***Match Condition***
        If a head H enters an Agree relation with a set of phrases K, each syntactic feature of H must be present on some memeber of K (not necessarily with the same value, including a value for EPP).

The Match condition is asymmetric, in that it allows the attracted element to bear features not present on the attractor.

10. On the syntax of wh-clauses. T-to-C vs subject movement in matrix questions

10.1 *Root quesitons and wh-exclamatives*. The analysis presented above raises the following question: If the subject can check the uT feature of C, why can't it do so in root questions, where raising of the tensed auxiliary is obligatory?

(170)   T-to C movement obligatory in matrix wh-questions.
        a. What did Mary buy?
        b. *What Mary bought?

Sentence (170b) ought to be possible according to the analysis above, yet it is not a possible questions in standard English. However, sentences of type (170b) are grammatical in standard English, with a different interpretation, that of exclamatives. T-to-C is impossible in exclamative wh-clauses. It is natural to hypothesize that in exclamatives, the uT feature on C is erased by the subject in the lower SpecC. Thus a *wh*-phrase like *what a NP* can only introduce an exclamative; such a phrase is incompatible with Inversion:

(171)   T-to-C movement impossible in matrix *wh*-exclamatives
        a. *What a silly book did Mary buy !
        b. What a silly book Mary bought!

This sugests that matrix *wh*-clauses in general do indeed have two options for deleting uT on C when the *wh*-phrase is not the Nom subject. In addition to T-to-C Movement, available in

interrogatives, in (171), the option of Nom subject movement to SpecCP is also available. This option is taken in exclamative constructions, which end up having a lower non-*wh*-phrase in SpecCP (the subject), in addition to the *wh*-phrase:

(172)   [$_{CP}$[What a silly book] [Mary, uT] [C, uT, uWh] [$_{TP}$ t-$_{Mary}$ T bought t-$_{what\ a\ silly\ book}$]]

The choice between these two options has consequences for interpretation, which might be summed up as in (173):

(173)   ***Exclamative vs. interrogative interpretation***
A matrix CP whose head bears uWh is interpreted as an exclamative if a non-*wh* phrase appears as one of its specifiers. Otherwise it is interpreted as a question.

10.2. *Indirect questions.* A similar issue arises with embedded questions in Standard English. Here Standard English does not allow overt T-to-C movement, either in the form of *that* or in the form of a fronted auxiliary verb, as shown in (174): However, Belfast English allows both, as in (175).

(174)   a. Bill asked what Mary bought.
       b. *Bill asked what did Mary buy.
       c. *Bill asked what that Mary bought

(175)   ***Belfast English***
       a. I wondered where were they going.
       b. I wondered which dis that they picked

One might interpret these facts by saying that the two English dialects differ on one simple point: whether or not movement is the strategy adopted to delete uT on C. As known, deletion of uninterpretable features may also be accomplished by Agree, if the uninterpretable feature lacks the EPP property. The uT feature of C enters an Agree relation with the embedded T, or with the subject in Spec TP. The difference between Standard and Belfast English may then be described by saying that Standard English embedded interrogative C lacks the EPP propeorty for uT, while Belfast English C in the same context has the EPP property, causing Inversion. That is why no form of T-to-C movement, either involving *that* or a fronted auxiliary, is observed in Standard English embedded interrogatives:
Finally consider interrogative subject clauses. It is not at first sight clear what allows these cluases to appear in the SpecT position of the matrix.

(176)   [Which book Mary read yesterday] is not known.

A possible solution to solve this problem may be to say that a feature marked for deletion deletes at the end of the CP/ VP phase, only if it has the EPP property. Otherwise it may survive to the end of the derivation.

(177)   ***Feature Lifespan***
A feature marked for deletion as a consequence of an operation of (Agree, Move) must disappear at the end of the CP cycle if it has the EPP propoerty. Otherwise it may delete at the end of the derivation.

Thus the embedded question still bears an instance of uT in addition to its φ-features, even though uT has been marked for deletion on the lower CP cycle. Thus, it is possible that embedded questions in Standard English differ from embedded declaratives in not requiring the disappearance of features at the end of the CP cycle that have been marked for deletion. As a result, uT on C of the embedded question in (176) remains, and is therefore eligible for attraction when the higher T is merged.

A different interesting effect of the Match Condition is apparent in the *if/ whether* asymmetry, assuming that *if* is a complementizer that lacks both φ-features and *u*T. This explains why a clause headed by *if* will not be attracted to SpecT, i.e., it will not be a subject or a topic. In contrast the *whether* clause will have an *u*T feature in C^0.

(178)   a. Mary asked me[whether $\varnothing_C$ Bill was happy].
        b. Mary asked me [if$_C$ Bill was happy]
(179)   a. [Whether Bill was happy] was the main topic of diussion at our dinner.
        b.*[If Bill was happy] was the main topic of dicussion at our dinner.

11. CP recursion and the Adverb Effect

In this section we will examine a group of examples which have always been problematic since they involve inversion in an embedded clause introduced by *that*. This ought to be impossible since the inverted auxiliary and the complementizer woulb be competing for the same place.
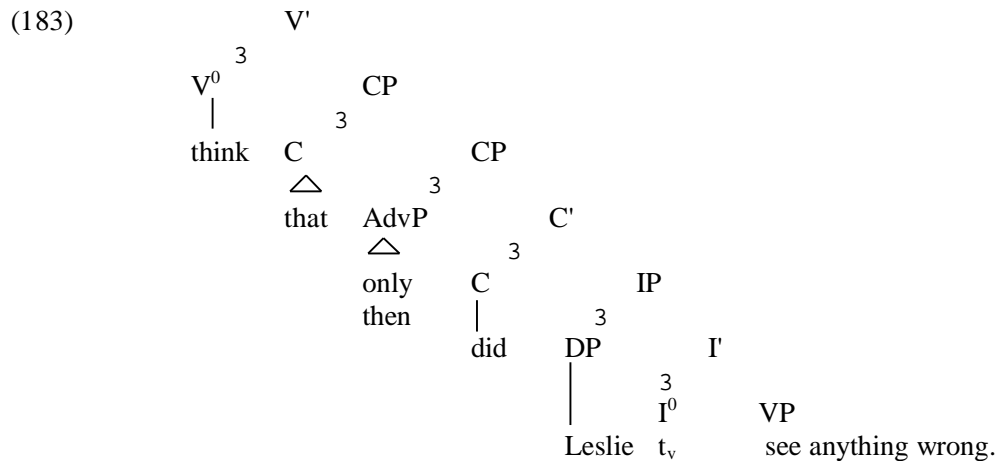
(179)   I knew that not even for one moment had Leslie given a damn about the budget.

Consider the following three groups of examples, all of which involve topicalized adverbial phrases. The first is of a type that we have discussed: the presence of a topicalized phrase forces the presence of *that* in C, as a means of eliminating the *u*T on C. The second group of examples is also familiar. The *wh*-subject starts from a positon lower than the topic. As a consequence of the fact that *u*T on C must be eliminated by merging (attracting) *that*, the *wh*- subject will raise to C only to check its *uWh* feature, so that the subject trace in Spec C co-occurs with *that*, in an anti- that-trace effect. The third group of examples is of a type not examined so far. In such sentences T-to-C has obviously applied since the auxiliary verb is in C. A negative adverbial phrase is in Spec C, yet the complementizer *that* is present, and, moreover, as shown by the ungrammaticality of (180b), *that* is obligatory. Other emphatic operator adverbials may also trigger inversion and the obligatory presence of *that:*

(180)   a. Robin said that, for all intents and purposes, this man was the mayor of the city.
        b. *Robin said for all intents and purposes, this man was the mayor of the city.
        c. Robin said that this man was the mayor of the city.
        d. Robin said this man is the mayor of the city.
(181)   a. This is the tree that I said [t that [just yesterday [t had resisted my shovel]]]
        b. I asked what Leslie said [t that in her opinion t had made Robin give a book to Lee.
        c. Lee forgot which dishes Leslie had said [t that under normal circumstances t should be put on the table].
(182)   a. I thought [that at no time had Leslie left the room]
        a'. *I thought [at no time had Leslie left the room].
        b. I realized that only then did Leslie see anything moving.
        b'. *I realized only then did Leslie see anything moving.
        c. I knew that not even for one moment had Leslie given a damn about the budget.

The intuitive reason for which the examples in (182a',b') are wrong is that they are not identifiable as finite declarative embedded complements. Finite embedded complements should start with *that* or with the subject in SpecCP. In both cases what is nedded is a constituent that carries a Tense feature. The starred sentences fail to satisfy this requirement. As shown in Watanabe (1992) clauses must be typed for syntactic, as well as semantic reasons. English finite complements are of two types: *that* complements and *wh*-complements. With *that*-complemnts, C is *that,* and there is no specifier, with the possible exception of a specifier which like C carries *u*T. As already

discussed this exception is the Nom subject. *Wh* complements on the other hand typically have a *wh*-specifier phrase in SpecC. Examples of type (182a'-c') have a filled specifier and nothing in C. In other words (182a'-c') are not properly clause-typed and cannot satisfy the c/s-selction requirements of the main verbs. This is why Merge applies again, combining the clause with inversion with the complementizer. Such sentences thus exhibit CP recurssion as shown in the phrase marker below:

(183)

```
                    V'
                  3
       V⁰              CP
       |            3
     think   C            CP
            △         3
           that  AdvP          C'
                △          3
               only   C            IP
               then   |         3
                     did   DP           I'
                           |         3
                           |        I⁰     VP
                        Leslie  tᵥ        see anything wrong.
```

General Conclusions

The syntax of that complements specifies the folloeing propoerties.

1. *That* clauses are headed by the complementizer that.

2. *That* complements are licensed as arguments, thta-marked by predicates.

3. *That* complemnts have φ-features, as shown by the fact that they select particular substitutes.

4. That complemnts, and, more generallly, CPs do not need Case. their distribution is not constrained by the Case-Filter.

5. Their surface distribution is in line with their discourse role, topic or focus.

6. *That* complemnts appear in the extrapostion structure.

7. *That* complemnts may undergo Clause Shift.

8. *That* complemnts allow *that*-Deletion.

Appendix
On the range of (root) wh-clauses in English.

In this appendix, we review some basic data regarding English *wh*-clauses, necessary to understand Pesetsky and Torrego's analysis presented above.

Root *wh*-clauses in English are either interrogative (1) or exclamative (2):

(1)   a. What house did he buy?
        b. What house he bought!

1. *Interrogative wh-clauses*: We are interested only in what Quirk e.a. (1972) identify as major types of questions, classified in terms of the kind of answer they expect: *general questions* (*Yes-no* Questions), *special questions* (*wh*-Questions), *alternative questions*:

(2)   a. Is he here ?

Yes, he is
b. Where does he live?
In London.
c. Does he have a name or does he represent a group ?
He represents a group.

The syntax of root questions generally involves two operations: auxiliary inversion, therefore (T^0- to-C^0) and fronting of the question phrase, i.e. movement of the question phrase to SpecC, the well-known *wh*-Movement rule.

Wh-movement is a successive cyclic A'-Movement rule. It can extract constituents out of deeply embedded sentences, as can be seen from the following set. Each time the *wh* phrase successively targets the next SpecC position.

(3)   a. What did you say?
        b. What did Mary report [t that you said t]?
        c. What does Tom believe [t that Mary reported [t that you said]]?

Like all A'-rules, *Wh*-Movement is sensitive to island constraints: One cannot extract by interrogation a constituent out of a relative or noun complement clause (The Complex NP Constraint), out of an adverbial clause (the Adjunct Island Constraint), or out of preverbal subject clause (The Subject Island Constraint):

(4)   a. Tom met the girl who knows a lot about art.
        b. *What did Tom meet the girl who knows a lot about t?
(5)   a. He through the article into the basket before closing the window.
        b *What did he throw the article into the basket befor closing t?
(6)   a. That he knows English will be important for his carreer.
        b *What will that he knows t be important for his carreer?

Also like all A'-Movements, *wh*-movement licenses parasitic gaps?

(7)   What letters did he throw away t before reading [e]?
        An often remarked fact is that when the subject rather than another constituent is questioned, there is no Inversion.

(8)   a. Who bought this book?
        b. What book did you buy ?

Multiple questions. Special questions may contain more than one question phrase. This may be the result of coordination or it may be the result of placing the *wh*-feature in severally structurally different positions. It is the second situation, illustrated in (9b) that we are interested in:

(9)   a. When and how did John see Bill ?
        b. Who said what to whom?

Superiority effects (Chomsky (1973) When there are several *wh*-phrases which could potentially be fronted, in English, only one of them may be fronted. In addition, this *wh* phras is always the *closest* to C. This is in line with the Minimal Link Condition or with the Attract Closest Condition which requires constituents to always travel the shortest possible distance.

(10)   a. Who bought what?

b. *What did who buy?
(11)   a. Who went where?
         b. *Where did who go?
(12)   a. What happened to whom?
         b.*To whom did what happen?

However there is a class of questions which are not subject to superiority effects. This is the class of so-called *d-linked questions* (cf. Pesetsky (1987, 2000). D-linked questions expect answers whose referents are taken from a contextually known and given group of individuals. The characteristic interrogative pronoun is the definite *which* (often used as a determiner), in contrast with the indefinite *what* and *who*, cahracteristic of non-d-linked questions. Here are examples that show the non d-linked questions are not subject to Superiority.

(13)   a. Which person bought which book?
         b. Which book did which person buy? (anti-superioirty)

Root questions vs. indirect questions. The syntax of indirect questions differs in one important respect from the syntax of root questions. In standarad English, at least, there is no inversion in indirect questions.

(14)   What did you buy?
         I wondered what you bought.
         *I wondered what did you buy .
General indirect questions are introduced by *if* or *whether*. The first is a complementizer, the second is better viewed as QP, correlating with the conjunction *or*. This categorial difference explains why *whether... (or)* may be preceded by prepositions, while *if* cannot:

(15)   a. The question of whther /*if he was capable never occurred to him
         b. I wondered whether they didn find me or they didn't need me.
         c. * I wondered if they didn find me or they didn't need me.

2. *The second type of root wh clauses: exclamatives sentences*
Exclamatives are primarily signalled out by their semantic and pragmatic properties. (See Cornilescu & Dimitrescu (1982), Zanuttini ans Portner (2000)).
Apart from their affective meaning, exclamatives differ from interrogatives in two ways:
a) The range of *wh*-phrases used in exclamatives is not the same as that of *wh*-phrases used in interrogatives. In particular, as shown in Elliot (1974), there are types of *wh*-phrases, containing the indefinite *a* or the degree adverb *very*, which appear only in exclamatives. These phrases give valuable clues about the semantics of exclamatives (cf. Zanuttini & Portner (2000)):

(16)   a. What **a** nice guy he is !
         b *What a nice guy is he ?
         a. How **very** tall she is !
         b *How very tall is she ?

b) There is no inversion either in root or in embedded exclamative clauses:

(17)   a. It's amazing how very tall she is.
         b. It's amzing what a rich man she married.