THE STRUCTURE OF THE ENGLISH CLAUSE

1. The endocentricity of sentences

1.1 ***Inflection as the head of the sentence***. An important result of GB syntactic research, due to Chomsky (1986), is that sentences are *endocentric* constructions, headed by Inflection, i.e., IPs. This view replaces a long tradition, conceiving of sentences as being made of two major, equally important constituents, the subject and the predicate, a tradition directly formalized in the early phrase structure rule in (1), from Chomsky (1957).

Inflection, the head of the sentence, is a verbal functional category. It represents a bundle of verbal and nominal features: tense, agreement and mood features. The structure of the inflectional head is given in (2a) below. Inflection projects according to X'-Theory, as indicated in (2b,c):

(1)   S--> NP ^ VP

(2)   a. I^0 --> Tense [± Agr] ^(Mood).
         b. I' --> I^0 ^ VP
         c. IP--> DP ^ VP

Inflection (I^0) is considered the head of the sentence, since it *governs* the VP and *agrees* with the subject DP, thus entertaining formal relations with the predicate (the head - complement relation) and with the subject (the head-specifier relation). Tense is represented by either Present, *-s*, or Past *-ed*. Tense is thus an *affix* and cannot remain stranded, but must be supported by a verbal root (The Stranded Affix Filter). The present or past form of a verb is *derivationally produced*, through some mechanism combining the verbal stem and tense affix in syntax.

In English, Inflection includes in addition to Tense and Agr, the modal verbs: *can, may, shall, will*, *must, need, dare*. The justification is that these verbs are defective, and can only occur in the presence of finite Tense, i.e., Tense plus agreement features. Modal verbs have only present and past tense forms. When modals are present, they support Tense, and the tensed modals may further raise to C°. A clear indication that modals move to C° is that I°- to-C° takes place only in root clauses, i.e., only when the C° position is not filled by a complementizer, as is apparent in the complementary distribution in (3) below, where either the complementizer *whether*, or the modal auxiliary, occupies the position before the subject (C°):

(3)   a. Could [$_{IP}$ he t_a be a fool?
         b. I asked you [$_{CP}$ whether [$_{IP}$ he could be a fool]].
         c. *I asked you [$_{CP}$ whether could [$_{IP}$ he be a fool]].

Chomsky (1957) had proposed the following celebrated phrase structure rule detailing the structure of the English Auxiliary - a syntactic constituent supposed to contain not only Tense and Mood markers, but also Aspect markers, the discontinuous constituents marking the Perfect (*have-en*) and the Progressive (*be-ing*) Aspect.

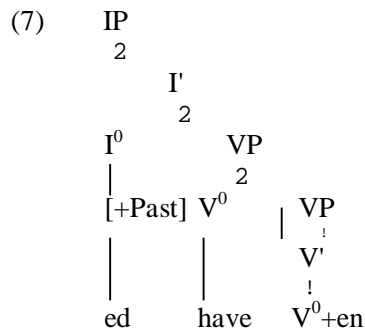(4)   Aux --> Tense (Modal) (have -en) (be-ing)

While Tense and Modals represent the content of Inflection, it was less obvious how to deal with the aspectual auxiliaries *have* and *be*. Auxiliaries are clearly *functional categories*, which lack θ- assigning properties, since they do not designate events. Rather they specify the reference of the event expressed by the main verb, as members of the main verb's Tense Chain.

Like Inflection, they take VP complements. An auxiliary is thus a verb that subcategorizes a VP, and cannot assign θ - roles.
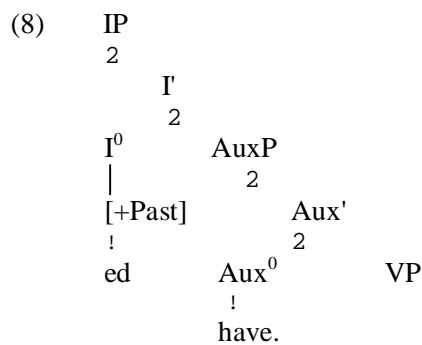
   1.2. ***The projection of auxiliaries***. There are several manners of projecting auxiliaries. One may choose to emphasize the similarities between main verbs and auxiliaries, for instance, the fact that, unlike modals, they have finite, as well as non-finite, forms (*to open*, *to have*, **to may*).
   In that case one may project them under the node VP, as shown in (5) below. Note that since selection is a relation between heads, each auxiliary selects a particular form as in (7) of the head of its complement phrase. The auxiliary *have* selects the past participle, the auxiliary *be* selects the present participle, etc.
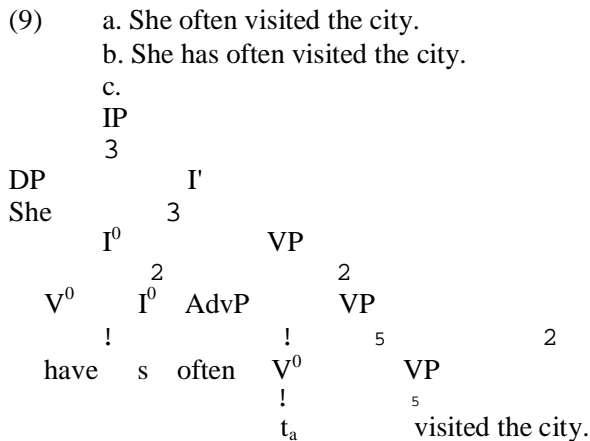
(5)   VP ---> V^0 ^ VP

(6)   have ---> [V[EN]]
       be ---->   [V [ING]]

(7)   IP
        2
            I'
            2
       I^0 VP
       | 2
       [+Past] V^0 | VP
                        | !
       | | V'
       | | !
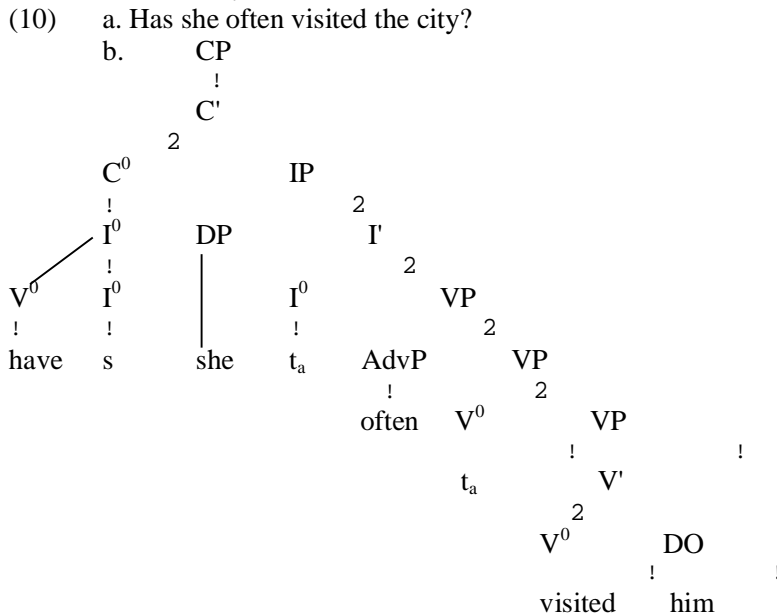   ed   have V^0+en

Alternatively, one might stress their functional nature and project them as heads of suitably labelled functional projections: Auxiliary Phrase, Aspect P, etc.

(8)   IP
       2
            I'
            2
       I^0 AuxP
       | 2
       [+Past]   Aux'
       !   2
       ed Aux^0 VP
                    !
                 have.

   Whichever notation is chosen, the syntax of the auxiliaries is the same. An important result, obtained by Pollock (1989) was that, in English, the syntax of main verbs and auxiliaries is vastly different. Main verbs remain in the VP throughout the derivation. In contrast, auxiliaries may or must move during the derivation. In sentences where there are no modals, the highest auxiliary raises to Tense, to support the Tense affix, and then it may further move to C^0. Example (9b) shows that the auxiliary *have* has raised out of the VP to T^0, past the adverb *often*, adjoined to the VP, as shown in (9c). This is the well-known V^0-to-I^0 or V^0-to-T^0 rule, an example of head -to- head movement, by means of which the auxiliary stem *adjoins* to the inflectional affix. The inflected form of the auxiliary is thus created through movement of the auxiliary and merger of the auxiliary with the Tense+Agreement affixes *s/ ed*, as represented in (9c).

(9)   a. She often visited the city.
        b. She has often visited the city.
        c.
        IP
        3
DP   I'
She   3
        I⁰   VP
        2   2
    V⁰   I⁰ AdvP   VP
    !   !   5   2
    have   s   often   V⁰   VP
                        !   5
                        t_a visited the city.

An auxiliary that has moved to I⁰ can further continue to C⁰, as shown in (10):

(10)   a. Has she often visited the city?
        b.   CP
                !
                C'
                2
        C⁰   IP
        !   2
        I⁰   DP   I'
        !   2
    V⁰   I⁰   !   I⁰   VP
    !   !   !   !   2
    have   s   she t_a AdvP   VP
                                    !   2
                                    often   V⁰   VP
                                            !   !
                                            t_a V'
                                                            2
                                                        V⁰   DO
                                                        !   !
                                                        visited   him

    The movement of the auxiliary from the V⁰-to-I⁰ and then to C⁰ observes the Head Movement Constraint (Travis (1984)) or the Minimize Chain Links condition (Each time the movement is shortest, i.e., it is movement to the closest head position, cf. Chomsky (1995)).

    The sequence made up of the lexical verb together with its functional categories I⁰ and C⁰ represents an *extended projection*. (Grimshaw (1990)). An extended projection defines a domain of movement for the verb. One may parametrize the point up to which verbs are allowed to move across languages, or up to which different types of verbs may raise within the same language. Thus in English, auxiliaries raise all the way up to C⁰, while lexical verbs remain in the VP. In French, all the verbs raise to C⁰, as can be seen by examining corresponding French and English examples. Verb movement is thus a property that can be parametrized and, therefore, used to express an observed difference across languages. Notice the striking contrast between the two languages in interrogative clauses.

(11)   French vs. English

a. Il embrasse souvent Marie.
b. *He kisses often Mary.
c. He often kisses Mary.
d. Embrasse-t-il souvent Marie ?
e *Kisses he often Mary ?
f. Does he often kiss Mary?

Conclusion

In classical GB theory (Chomsky 1981, 1986), the English clause has the following functional structure:

(12)   CP > IP > V_{aux}^0 > VP

        I^0 --> Tense[+Agr]^ (Modal)

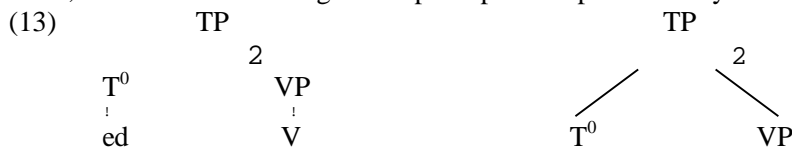## 2. Main verbs and auxiliary verbs again
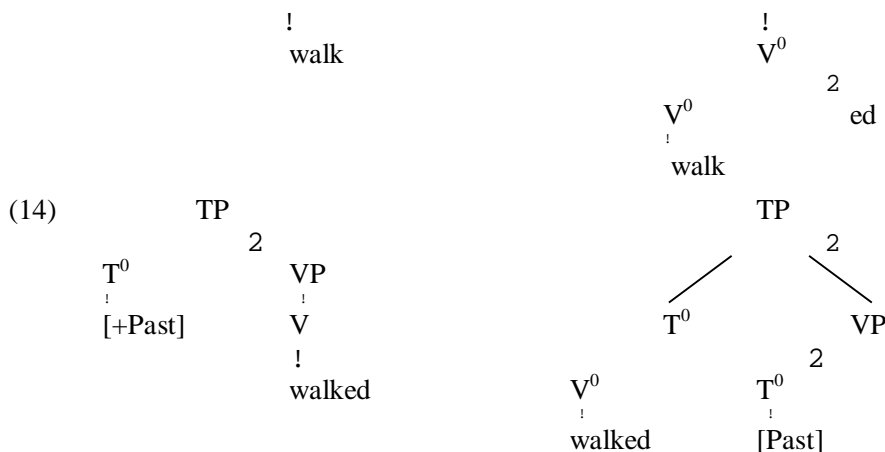
2.1. *Verb Movement and Verbal Morphology*

Chomsky (1993, 1995) departs from his earlier treatments of verbal morphology and adopts a strictly lexicalist view, under which all verbs are taken from the lexicon *fully inflected*. They still must associate syntactically with the appropriate functional heads, but only in order for their inflectional features to be checked against corresponding abstract features of the functional heads. They no longer acquire these features as affixes, as they did in the derivational analysis.

The difference between the two approaches can be appreciated by comparing (13) and (14), representing two ways of analysing the Past Tense form *walked*. In the earlier treatment, Inflection is *affixal*, and it combines with the verbs, either by the Verb raising to Inflection (as seen above for richly inflected languages like French), or by lowering the Inflection on the verb (Affix Hopping, applying to English main verbs). In (13) there is an example of Affix Hopping. This is the consequence of the Stranded Affix Filter: "A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure" (Lasnik, 1981). This filter crucially assumes along with Chomsky (1955, 1957) and many succeeding analyses, that the inflectional material on a verb is a morphological affix, even though it begins its syntactic existence as an autonomous entity".

In (14) Inflection is *featural* (i.e., represented by a bundle of features). The verb, drawn fully inflected from the lexicon, will check its inflectional features by raising to the appropriate functional heads. Feature checking is done either through movement in the overt syntax, or through LF movement. If inflectional features are "strong" they are checked by *overt* movement. Strong features must be checked by Spell-Out, their presence at PF causes the derivation to crash. If the inflectional features of the attracting functional head are weak, movement is *covert*, i.e., it is delayed until LF (Procrastinate), so that the inflected verb does not raise overtly.

As has been known since Pollock (1989), English main verbs do not raise overtly. This is an indication that the inflectional features are *weak* in English. In (14), Tense is featural, and the inflected verb *walked* covertly raises at LF to check its Tense feature. Intrinsic to this checking theory is the idea that the features of verbs and functional heads must be checked against each other, and that this checking can in principle take place overtly or covertly.

(13)   TP   TP
                  2   2
        T^0 VP   /   \
        !   !   /   \
        ed   V T^0 VP

```
              !                                    !
             walk                                 V⁰
                                                      2
                                            V⁰              ed
                                            !
                                          walk

(14)              TP                              TP
                     2                               2
       T⁰              VP                    /           \
       !               !                  T⁰              VP
    [+Past]            V                                    2
                       !                V⁰          T⁰
                     walked             !           !
                                      walked      [Past]
```

From this perspective the difference between French and English main verbs is not verb raising vs. Affix Hopping. Rather, it is whether verb raising takes place in overt syntax (French), since the inflectional features are strong, or at LF, in the covert component (English), since the inflectional features are weak. The difference between English and French can be stated as follows (cf. Lasnik (1995)):

(15)   a. In French, the V-features, i.e., those that check features of V, are strong.
        b. In English the V-features are weak.
(16)   Strong features surviving at PF cause the derivation to crash.
(17)   *Procrastinate:* Delay an operation until LF whenever possible, that is, whenever delaying would not cause the derivation to crash.

The parametric difference between English and French is now expressed in a different manner, namely the strong/weak difference between inflectional V-features. Strong features trigger overt movement, weak features do not. One problem for this analysis of English is that English auxiliaries do raise to Tense⁰ and then to C⁰, as is apparent in the following types of well-known contrasts.

(18)   a. He often goes to movies.
        b. He has often gone to movies.
        c. Does he often go to movies?
        d. Has he often gone to movies?

Chomsky (1993) proposes that the different behaviour of *have* and *be* is caused by the fact that *have* and *be* are semantically vacuous, hence they are not visible for LF operations. Thus if they have not raised overtly *by LF,* they will not be able to raise at all, and their unchecked features will cause the derivation to crash.
This analysis is not fully satisfactory. An immediate counter-example is that *be* may raise to T⁰ and then to C⁰ *even when it is a main verb*, meaning 'exist'.

(19)   a. There is no solution.
        b. There is often no solution.
        c. Is there any solution ?

2.2. *A Hybrid Approach*
It has been shown in (14) above that Chomsky's lexicalist minimalist account of verbal morphology demands that Agr and T are just *abstract features* that check against features of fully inflected verbs that raise to them overtly or covertly. The earlier derivational accounts treated

such inflectional items exclusively as bound morphemes that became affixed on otherwise *bare* verbs, as in (13).

Lasnik (1995, 1998) proposes a hybrid approach, which allows both mechanisms to exist in UG, and seems to offer a better empirical coverage for the English facts. In the hybrid approach, the fundamental difference between English and French, as well as between English auxiliary and main verbs, lies in the choice of *the checking mechanism*, a difference that correlates with different *types of lexical representations*. Lasnik re-states the difference between English auxiliaries and main verbs, and between English and French as follows:

(20) a. French verbs are fully inflected in the lexicon (possibly correlating with the fact that there are no bare verb forms in French; even the infinitive has an ending).
b. *Have* and *Be* are fully inflected in the lexicon (possibly correlating with the fact that they are highly suppletive, allowing for person /number variation).
c. All other English verbs are bare in the lexicon.

Given that English *have* and *be* behave just like French verbs and given that English main verbs are not represented with inflectional features in the lexicon, the inflectional features strength difference posited in (15) above becomes superfluous. Instead, we have (21):

(21) a. Infl is freely either an affix or a set of abstract features.
b. Finite featural Infl is *strong* in both French and English.

The choice of Inflection type (featural, affixal) is predictable from the type of lexical representation. If the lexicon lists inflected forms separately, Inflection will be featural, if the lexicon contains the bare form of the verb, Inflection is affixal. The final necessary mechanism is Affix Hopping. As conjectured in Halle and Marantz (1993) and Bobaljik (1995), the rule is *morphophonemic*, rather than syntactic, it it will be a *PF rule*, since from the point of view of semantic interpretation, it is desirable that Tense should c-command the VP on which it operates.

(22) Afix Hopping: Affixal Inflection must merge with a V, a PF process (distinct from head movement) demanding *adjacency*.

Consider now the various combinations made available by this theory. First, suppose that one selects a verb with inflectional features (notated here as +F) and a featural (as opposed to affixal) Inflection.

(23) ...Infl...V...
$\quad$ +F +F

This configuration is well-formed. V raises (overtly) to Infl, and all relevant features are checked. This is the situation of *be/ have/ do/ (modals)* and all French verbs. Next, consider the case of a bare verb and an affixal, as opposed to featural, Inflection:

(24) ...Infl......V....
$\quad$ Af $\quad$ bare

This is the situation of English main verbs. In this configuration PF merger takes place as long as *adjacency obtains*, and the PF affixal requirement of Inflection is satisfied. Two more configurations (25c, d) will arise, but will lead to a crash, as can be seen below:

(25) a. Infl....V.... OK. V will overtly raise.
$\quad\quad$ +F +F

b.....Infl.....V   OK. PF Merger
    Af   bare

c.....Infl..…V.... *at LF, +F of Infl will not be checked;
    +F   bare *at PF as well, since +F is strong;

d. Infl   V   *at LF, +F of V will not be checked;
    Af   +F   *at PF also, if merger fails.

In the examples we have looked at so far, that is, French verbs and English auxiliaries, featural Inflection happened to be strong. Expectedly, there are languages where Inflection is featural but has weak features, this leading to a different overt syntax. (See Lasnik (1995) for examples).

In sum, the gist of Lasnik's analysis is that lexical representation determines the type of Inflection, and the strength of features then determines whether feature checking takes place overtly or covertly. It will soon appear that the hybrid approach to verb morphology is well-supported empirically, offering solutions for a number of essential problems, such as negation, VP deletion, a.o.

2.3. *Evidence for the Hybrid Approach : Verb Phrase Deletion (VPD)*
VPD is a rule which deletes the second of two presumably *identical lexical* VPs, leaving an auxiliary behind.
(26)   a. Peter should [*buy the text book*] and Mary should [e] too.
        b. Peter will *go to London* and Mary will [e] too.

Surprisingly, however, VP ellipsis can ignore certain inflectional differences between the antecedent and the elided verb, so that the rule operates under "sloppy identity", rather than strict identity. For example, Quirk e.a. (1972), Warner (1986) observe that a finite inflected form of a verb can antecede the deletion of the bare form that follows a modal verb, as in the following examples:

(27)   a. John slept, and Mary will too.
        b. *John slept and Mary will slept too.
        c. John slept, and Mary will sleep too.

In (27a) the past tense form *slept* serves as an antecedent for the deletion of the bare form *sleep. T*he present tense form can also antecede the bare form, as in (28a).

(28)   a. John sleeps every afternoon, and Mary should too.
        b. *John *sleeps* every afternoon, and Mary should *sleeps* too.
        c. John *sleeps*, and Mary should *sleep* too.

Similarly the progressive and perfect forms can antecede the bare form. It appears that a sort of sloppy identity is at work here, permitting tense and aspectual differences to be ignored.

(29)   a. ?John was sleeping, and Mary will too.
        b. *John was s*leeping*, and Mary will *sleeping* too.
        c. John was *sleeping*, and Mary will *sleep* too.
(30)   a. John has slept, and Mary will too.
        b. *John has *slept*, and Mary will *slept* too.
        c. John has *slept* and Mary will *sleep* too.

However, ellipsis with auxiliaries is markedly different, requiring *strict identity*. Thus, (31a), though seemingly parallel to (27), is unacceptable, because *was* cannot antecede *be*; nor can *is* antecede *be,* as shown in (32):

(31)   a. * John was here, and Mary will too.
       b. *John *was* here and Mary will *was* here too.
       c. John *was* here and Mary will *be* here too.
(32)   *John is here, and Mary will too.

Similar effects obtain with auxiliary *have*. Ellipsis is markedly better in (33) with identical forms of *have* than in (34) with distinct ones:

(33)   a. John should have left, but Mary shouldn't (have left).
       b. ?John should have left, but Mary shouldn't.
(34)   a. * John has left, but Mary shouldn't-(have left).
       b. John has left, but Mary shouldn't have left.

The findings in the examples can be summed up as in (35):

(35)   The bare form of a verb V other than *be* or auxiliary *have* can be deleted under identity with any other form of V. *Be* or auxiliary *have* can only be deleted under identity with the very same form.

As Warner (1986)observes, this difference does not follow directly from the degree of suppletion. The paradigm of *go* is highly suppletive, yet the verb patterns with all the other main verbs considered above, allowing deletion under sloppy identity (cf. (36)):

(36)   John went, and now Mary will go.
       John went and now Mary will.

Thus, the relevant differences is that between main verbs and auxiliaries. Sag (1976), in an important analysis of VP deletion, notices that all these cases *could be accounted for by ordering VP deletion before Affix Hopping*, i.e., by allowing deletion to take place at a point in the derivation where the inflected form of the main verb has not been created, so that deletion actually operates on identical forms.

On a strictly lexicalist view, such as that of Chomsky (1993), described in (14) above, there is no such point in a derivation. Sag's insight is, however, convergent with the hybrid approach, whereby English main verbs come from the lexicon as bare uninflected forms. Identical occurrences may be deleted in syntax, while inflected forms are produced at PF by Affix Hopping: Schematically, (some of) the examples above are analysed as follows:

(37)   a. John slept, and Mary will too.
       b. John Infl *sleep*, and Mary will *sleep* too
(38)   a. John was sleeping, and Mary will.
       b. John was ing *sleep*, and now Mary will *sleep*.
(39)   a. John has slept, and now Mary will.
       b. John has en *sleep*, and now Mary will *sleep*.

On the other hand, if auxiliaries come from the lexicon fully inflected, and if deletion requires strictly identical forms, *was* or *is* will never be identical to *be*, since they are not formed in syntax out of Infl + be.

(40)   a. *John was here and Mary will, too.
        b. John *was* here and Mary will *be* here, too.
        Summing up:

(41)   a. A form of a verb V can only be deleted under identity with the very same form.
        b. Forms of *be* and auxiliary *have* are introduced into syntactic structures already fully inflected. Forms of "main" verbs are created out of lexically introduced bare forms and independent affixes.

VP Deletion facts provide strong empirical support for the hybrid approach to English verb morphology. We will adopt it, and use it in the analysis of negation in English.

Conclusion

1. English verbal morphology can best be described by assigning different lexical representations to main verbs and to auxiliary verbs.
2. Main verbs are represented with one bare form. They come uninflected into the derivation, and will merge with inflectional affixes during the derivation (Affix Hopping at PF).
3. Auxiliary verbs are represented with all their inflected forms in the lexicon. They come fully inflected into the derivation, and will simply check their inflectional features during the derivation. (Overt movement to functional heads).
4. The lexical representation of the verbs determines the representation of Inflection, either as a bundle of abstract features or as an affix.

3. Negative sentences

The presentation of the English clause structure cannot be complete without an even sketchy presentation of negative and interrogative clauses. This section contains a brief presentation of the syntax of negation, while interrogative sentences will be discussed in the next chapter. The aspects chosen for discussion are purely syntactic, largely ignoring the complex semantic issues related to negation and interrogation in English. (For a presentation of these problems in an *Aspects* framework, see Cornilescu (1982)).

3.1 Negation may affect different types of constituents in a sentence, and it is useful to distinguish between the following types of *scope* of negation:
    a) word negation - realized by means of negative affixes, mostly prefixes: *unhappy*, *infelicitous*, *dislike, displease*.
    b) phrasal negation: the negation *not* may adjoin to any phrase, taking scope over it.

(42)   He came to the party not long ago, didn't he?
        Not far away, it was still raining, wasn't it?
    c) sentence negation - cases where *not* has sentence scope. A sentence is negative when its predicate is negated, in other words, when its Inflection, which is the head of the sentence, is negative.

3.2 ***The concept of negative sentence. Types of negative sentences***. A sentence is negative, not only by virtue of its meaning, but also because of its syntactic properties. Negative sentences have particular distributional properties, which identify them as such. It is instructive to compare pairs made of a negative sentence, and a nearly synonymous sentence, where negation is expressed by means of a negative word. There are several tests, due to Klima (1964), which distinguish between negative sentences and sentences with negative constituents.

a. ***Tag questions***. Under falling intonation on the tag question, negative sentences take affirmative tags, and vice versa:

(43) a. Mary is happy/unhappy about her job, isn't she/* is she?
b. Mary is not happy/unhappy about her job, is she/* isn't she?

b. ***Not -even*** tag sentences require a negative host sentence:

(44) a. George doesn't like smart girls, not even pretty ones.
b. George dislikes smart girls even pretty ones /*not even pretty ones.

c. ***Either*** conjoining. Two co-ordinated sentences can have the form S₁ *and* S₂ *either*, only if the second is negative.

(45) a. Jack stayed at home all day and Mary didn't go any place either.
b *Jack didn't go anywhere all day and Mary stayed at home either.
c. John isn't happy and Mary isn't happy either.
d. *John is unhappy and Mary isn't happy either.

d. ***Neither*** tags require negative hosts. Affirmative sentences are followed by *so*-tags

(46) a. Jack doesn't like linguistics and neither does Mary / *and so does Mary
b. Jack dislikes linguistics and so does Mary/ *and neither does Mary.

These tests reliably identify a sentence as negative and clearly show the difference between sentence negation and constituent negation (word negation in the examples above).

3.2.1. *Types of negative sentences.* Taking into account the distribution of the negative constituent in the sentence, it has been customary since Klima (1964) to classify negative sentences into the following three classes:

a) Sentences where negation is in the Auxiliary.

(47) a. Bob has lost my respect.
b. Bob has not lost my respect.
c. Bob abandoned his pet cat.
d. Bob did not abandon his pet cat.

b) Sentences where negation is expressed by negative quantifiers, like *nobody, never, nothing*. Syntactically, these negative quantifiers are determiners (*no*), pronouns (*nobody, nothing*) or adverbs (*never, nowhere*).

(48) a. He saw no rose-bush in the garden.
b. He saw nobody in the garden.
c. He had never visited that city.

c) Emphatic negative sentences are sentences where the negative constituent appears to the left of the subject, triggering inversion.

(49) Never before had he seen such pretty girls.

One other famous problem that relates to negation is that of *polarity items* (items sensitive to the polarity of the sentence). *Affirmative polarity items* require assertive, non-negative contexts (sentences). *Negative polarity items* require negative sentences. Here are a few examples.

Positive Polarity Items
(50)   a. It is *still* raining.
        b. He has *already* arrived.
        c. Mary is here, *too*.
        d. Mary was looking for *some* old pair of shoes.

Negative Polarity Items
a'. It is not raining *anymore*.
b'. He hasn't arrived *yet*.
c.' Mary isn't here, *either*.
d'. Mary wasn't looking for *any* old pair of shoes.

Within the present context, we shall merely say a few things about licensing polarity items in section 6 below.

4. Negation in the Auxiliary

4.1 ***The Negative Projection***. From the point of view of the functional structure of the clause, the essential pattern is that of negation in the auxiliary. English sentential negation can show up in two different shapes: the contracted *n't* or the full form *not*. It is generally assumed that the two formatives spell out the content of a Negative Projection, NegP, one of the functional categories of the verb. The examination of sentences with negative operators will offer evidence for projecting NegP as an independent phrase. A cursory cross-linguistic look immediately shows that negation overtly shows either below the tensed verb (English), or above it (Romanian).

(51)   a. Mary **is** *not* in the kitchen.
        b. Maria *nu* **este** in bucatarie.

Taking into account such data, Laka (1990) proposes the existence of a parameter dividing languages according to the relative position of Negation with respect to tense:

(52)   The Negative Parameter distinguishes between:
        a. languages where Negation is above Tense; (Romanian)
        b. languages where Negation is below Tense. (English)

(53)   English (finite clauses)

                        TP
                          $_i$
                         T'
                          2

```
           T⁰                NegP
           is                not
```

(54)   Romanian
       NegP
       2
          Neg'
              2
       Neg   TP
       nu   este

       The interest of Laka's description is to point to the inseparable connection between Tense and Negation. The relation is conceptual. What a negative sentence denies is that a particular (expected) event did not obtain at some time. A sentence like *Mary didn't arrive at three*, speaks only about the given past time, and doesn't imply anything about later times.

       Laka's suggestion that NegP is below T is well supported by English finite clauses, but is problematic for non-finite clauses. Thus, it is beyond reasonable doubt that in an English clause, the particle *to*, which is a Mood/Tense marker of the infinitive clause, occupies the T position. Yet, Negation standardly occurs above *to* in the infinitive clause, this suggesting an order opposite to that of the finite clause NegP>TP.

(55)   Not to accept this proposal (seems foolish).
       He has not accepted this proposal.

       While it is quite possible to give an analysis of infinitives under the assumption that TP > NegP (see Bennis & Hoekstra (1989)), the distribution of Negation in infinitive and other non-finite clauses weakens the hypothesis that Negation is below Tense. We will tentatively adopt a more restrictive working hypothesis regarding functional projections, stated in (56)

(56)   <u>Hypothesis.</u>
       1) The hierarchy of functional categories is invariant. The only things that can vary are the properties of the functional nodes (Borer 1984).
       2) Functional categories are projected as a last resort.

       4.2 *The Split Inflection Hypothesis*. An important ingredient in the syntactic analysis of the English verb is the Split Infection hypothesis, that is, the possibility to represent Inflection as a number of separate projections, each headed by one/some of the features which carry tense, mood, aspect, and agreement information. Thus Chomsky (1993), following work by Pollock (1989) and Belletti (1990), separates the verbal, from the nominal, features of Inflection, and furthermore he separates features that represent agreement with the subject, such as the morpheme *s* in English, from features that represent agreement with the object, for instance, features responsible for assigning the Accusative case; in English there are no overt manifestations of object agreement features. The clause structure which Chomsky (1993) proposes is as follows:

(57)   AgrSP > TP > AgrOP > VP
       s   ed   ?

       The analysis may be more detailed and extended. Thus the categories of Tense and Aspect may be represented by different functional heads. In other languages, it is often necessary to separate Tense from Modality. As a result, the following architecture of the English clause

emerges where, below each of the projections, we have indicated a characteristic morphologic material that could fill it.

(58)   AgrSP > TP   >   AspP   > AspP >   (AgrOP) > VP
        s   ed, may   have   be   ?

       The result is strikingly similar to Chomsky's initial 1957 analysis, though having a list of functional projections in a regular phrase structure configuration is vastly different from having a mere concatenation of constituents.
       One word of caution is called for at this point. Functional categories which often check purely formal features like Case, should be viewed as *Last Resort* strategies (Giusti (1999)). They are projected only when necessary. Otherwise, syncretic representation are preferred, in agreement with the principle of Economy of Representation.
       Let us return to clausal negation. Following Lopez (1995), we will assume that NegP is above TP in English as well as in other languages, and proceed with the description of negation, assuming the following clause structure:

(59)   AgrSP > NegP > TP > AspP$_1$ > AspP$_2$ > (AgrOP) > VP
        s   ed   have   be   ?

       It is necessary to analyse the two items that may fill the NegP: *not*, and *n't*.

4.3. n't *and* not.

English sentential negation can show up in two different shapes: the contracted *n't* or the full form *not*. In this section we will pay attention to their syntactic distribution, particularly to the problem of how the order *auxiliary verb + negation* obtains.
       4.3.1. According to Zwicky and Pullum (1983), *n't* is an affix of the auxiliary; it is not a syntactic clitic, but a bound morpheme, incorporated into a modal or an auxiliary. Forms such as *can't*, *aren't* are pulled from the lexicon as fully inflected, and they will have to check their features during the derivation: *Hasn't* for instance must check [+Present, 3d Person, +Negative].
       The hypothesis that *n't* is incorporated into the auxiliary explains why *n't* and the auxiliary raise together as in (60). A second property of *n't* is that it attaches to the highest verbal projection of the sentence, as shown in (61). A third final property is that there can't be two *n't* items in the sentence, as shown in (62):

(60)   Couldn't you give me that book?
(61)   a. He couldn't have been fooling around so much.
        b. *He could haven't been fooling around so much.
(62)   **He couldn't haven't been so careful.

       The sentences in (61) confirm the hypothesis that *there is a functional category NegP* with an abstract head carrying a strong feature, Neg [+neg], against which *n't* checks its own feature. This hypothesis explains the fixed position of *n't*, which must show up on the highest auxiliary, the one that raises. If *n't* attached to the lower auxiliary verbs, as in (61b), the features of *n't* could not be checked. In the same way, there can't be two *n't*s as in (62), because there is only one functional head against which the two *n't*s could check features and, as a result, the features of the lower *n't* would go to PF unchecked, causing the derivation to crash.
       The assumption adopted here (following Lopez (1995), Haegeman (1996)) is that the inflected auxiliary is projected under Tense (*do* and the modals) or under Aspect (*have, be*), therefore, under a category whose content it represents, and then successively raises to check its inflectional features, ultimately getting to the AgrS^0 head where it checks its [Person] features.

(63)   a. Mary hasn't come.
        b.

AgrSP
          u
            AgrS'
          3
AgrS⁰   NegP
[+person]   Neg'
                            u
                    Neg⁰   TP
                    [+neg]   T'
                                          i
                            T⁰   AspP
                            | u
                                              Asp'
                            [+present]   3
                                    Asp⁰   VP
                                    | 3
                                    hasn't   DP   V'
                                    $\begin{bmatrix} +present \\ +3d\ pers \\ come \end{bmatrix}$ V⁰   r
                        +neg   !

In conclusion, *n't* is an affix incorporated into modal and auxiliary verbs in English, an affix which must check its features against the abstract head of the NegP. Negated modals are subject to the same analysis, except that they are generated under Tense.

(64)   a. He shouldn't go.
        b.

AgrSP
          u
            AgrS'
          3
AgrS⁰   NegP
[+person]   Neg'
                            u
                    Neg⁰   T/MP
                    [+neg]   T' M'
                                          i
                            T⁰/M⁰   VP
                                              3
                            shouldn't   DP   V'
                                              3
                            $\begin{bmatrix} +past \\ +person \\ +neg \end{bmatrix}$ V⁰   r

4.3.2. Consider now the syntax of *not*, which is vastly different. First, it is not cliticized or affixed to auxiliary verbs. Secondly, when auxiliaries raise to C⁰ past the subject, *not* must be left behind (cf. (65)). This suggests that *not* is not a head that checks features through head-to-head movement the way *n't* does. In sharp contrast to *n't*, *not* can appear in lower positions. This is shown in (66 a-c), where *not* may be adjoined to any of the verbal functional projections. Moreover, there can be two *not*s, as in (66d). Finally the two negatives *not*, *n't* co-occur, suggesting that they occupy different positions.

(65)   a. Could you not stay home tonight for a change?
        b. *Could not you stay home tonight for a change?

(66)   a. He could *not* have been fooling around so much.
        b. He could have *not* been fooling around so much.
        c. He could have been *not* fooling around so much.
        d. He could *not* have *not* been fooling around so much.
        e. He couldn't *not* do his homework.

        The following result has been obtained:
        1) *N't* is an affixal head that checks features with an abstract functional category.
        2) *Not* does not have to check features and does not have to be associated to sentence negation. Actually, *not* can be adjoined to verbal, as well as to non-verbal projections, so that an adjunction configuration like (67c) below is generally available.

(67)   a. Not everyone can swim.
        b. He came here not long ago.
        c.   XP
             3
        Neg   XP
        |
        not

        In sentences which are negative and pass the tests for negativity above, there is a NegP whose strong [+neg] feature must be checked. It can be checked by head-to- head movement, as already shown, or it can be checked by specifier -head agreement with a negative specifier. We may analyse *not* as a specifier of the NegP. The presence of *not* checks the feature [+neg] of the negative head "making the sentence negative" (i.e., negation has scope above tense). *Not* is a functional element. An alternative that comes to mind is to regard *not* as a negative adverb, in the lexical class *not*, *never*, *hardly*, *scarcely*, etc. The analysis of *not* as an adverb is undermined by the fact that, *not* triggers *do*-support, while the other negative adverbs do not.

(68)   a .* I did hardly buy Nixon's book.
        b. I did not buy Nixon's book.
        c. I hardly bought Nixon's book.
        d. *I not bought Nixon's book.

        It is also likely that *not* should not be analysed as a head (contra Laka (1990), Chomsky (1993)). Thus examples like the ones below, show a clear difference between *n't* which is affected by head to head movement, and *not*, which is not. If *n't* is a head and *not* is a Spec, it is predictable that auxiliaries can skip *not*, but cannot skip *n't*.

(69)   a. He should not have done it.
        b. Should he not have done it?
        c. He shouldn't have done it.
        d. Shouldn't he have done it?

        From a semantic point of view, negation is a *logical operator*, a scope taking element. Scope taking elements occupy A'-positions, positions of adjunction or A'-specifiers. Negation interacts with other operators (question phrases, quantifiers, etc.). Moreover, negation may give rise to inner island effects, i.e., it may prevent extraction of a lower element c-commanded by negation. Here is an example:

(70)   a. It is for this reason that I believe that John was fired.
        b. It is for this reason that I do not believe that John was fired.

In (70a), the adverbial *for this reason*, may be associated either with the predicate *believe*, or with the predicate *was fired*, therefore it could have come from either sentence. In (70b) the adverbial *for this reason* can only modify the higher verb, *believe*. It cannot have originated in the lower clause. This difference shows that the *not* creates an inner island effect, preventing the A'-movement of a lower constituent of the same class. *Not* functions like an element in an *A'-* position. We retain that SpecNegP is an A'- position.

Conclusions

1. Neg sentences contain a NegP headed by a strong negative feature [+neg].

2. The NegP is uniformly projected above the TP. Tense and negation are conceptually related, since what sentence negation denies is that the event holds at a particular time interval.

3. The Auxiliary verb + negation word order is due to the existence of a higher AgrS phrase, where the Auxiliary verb checks its [Person , Number] features.

4. Sentential Neg is a functional head whose content is retrieved in two ways, by checking with the affix *n't*, or by specifier- head agreement with *not*. Move is involved in both checking operations. The derivation of a negative sentence relies on the mechanisms presented in (71), and (72)

(71)   [AgrSP ϕ [NegP NEG [TP [± PAST] [AuxP hasn't]]]

[AgrSP ϕ [NegP not [Neg' NEG [TP [± PAST] [AuxP has]]]

(72)   [AgrSP hasn't [NegP t [TP t [AuxP t]]]]

[AgrSP has [NegP not [TP t [AuxP t]]]]

5. *Do*-Support

A problem arises when the Inflection of the sentence only contains T/ Agr and there are no auxiliary or modal verbs. Consider the negation of a sentence like *He came*, i.e., *He didn't come*. Suppose Inflection were affixal, as in representation (74a). In this representation the subject would end up below negation, instead of above negation, contrary to fact. Given that English is SVO, the subject must end up in a specifier position, say AgrS, above negation, a position which checkings a strong Person feature.

Under the present analysis, a sentence like *He didn't come* must rely on a representation like (74b) with *split* Inflection. The subject will correctly surface above negation. However, in this configuration, Inflection cannot be affixal. Suppose it were affixal, and *ed* were under T^0. One might assume that *not* checks the strong negative feature [+neg]. Apart from that, the only thing that could happen is PF Affix Hopping. This, however, will leave the strong $AgrS^0$ feature unchecked. Remember that $AgrS^0$ either is not present at all, or causes verb raising when present. But, as known, main verbs do not raise. Since a strong feature in $AgrS^0$ remains unchecked, the derivation crashes. The configuration in (74b) will never lead to a convergent derivation, unless another element is inserted whose only role is to check the strong inflectional V-features. This is what the verb *do* does. The verb *do* is an auxiliary, always, inflected for tense, person, number and possibly inflected for negation, as in *doesn't/ didn't/don't*.
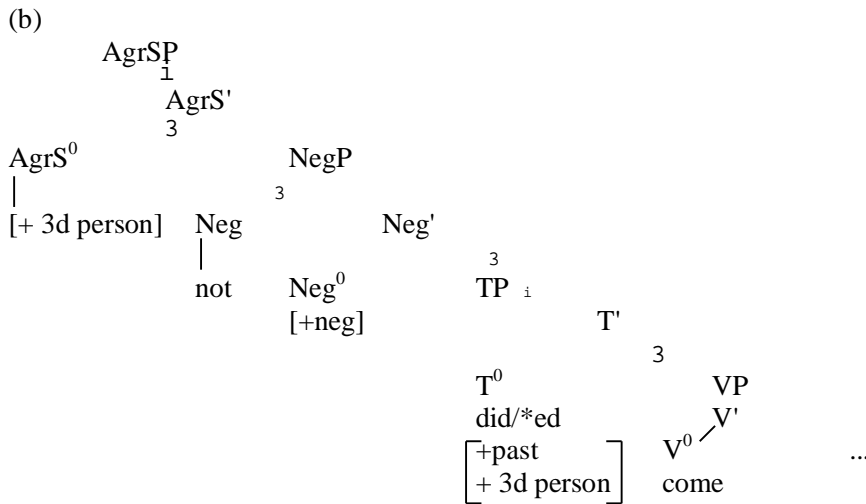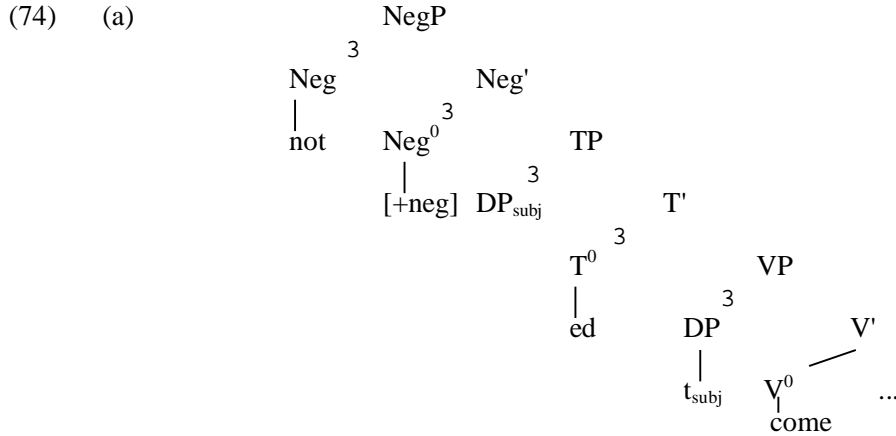
In (74b) the auxiliary *Do* is inserted under Tense; it will first check its [+Tense] feature, and then successively raise to $AgrS^0$, leading to a convergent derivation. The rule that inserts the auxiliary do under Tense is known as *Do*-Support. Notice that do merely signals the presence of some abstract head, whose content is retrieved otherwise, for instance by agreement with an

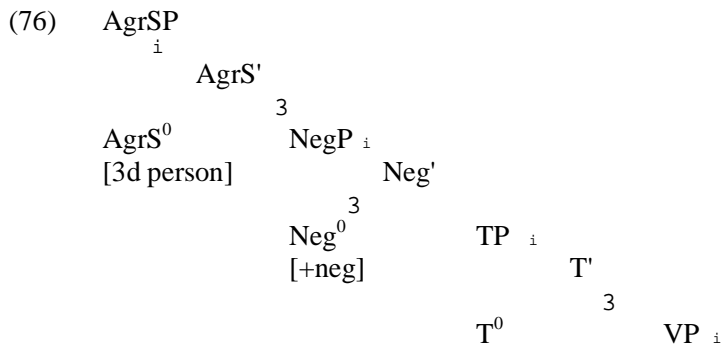appropriate   specifier.
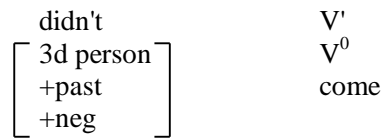*Do*-Support is thus a PF-requirement.

(73)   He did not come.

(74)   (a)

```
                              NegP
                            3
            Neg                Neg'
            |                 3
            not      Neg⁰              TP
                     |              3
                  [+neg]   DP_subj          T'
                                        3
                              T⁰              VP
                              |            3
                              ed      DP          V'
                                      |          /
                                   t_subj    V⁰      ...
                                             |
                                           come
```

(b)

```
          AgrSP
              1
              AgrS'
            3
AgrS⁰                 NegP
|                   3
[+ 3d person]   Neg              Neg'
                |              3
                not    Neg⁰          TP  i
                       [+neg]              T'
                                        3
                               T⁰              VP
                               did/*ed          V'
                               ⎡+past      ⎤  V⁰ /        ...
                               ⎣+ 3d person⎦  come
```

Consider now an example involving the clitic *n't* incorporated in the auxiliary *do*, as in sentence (75), containing the auxiliary *didn't*, etc. The auxiliary is inflected for [+Past, 3d person, +singular, +negation] Given its morphology, the auxiliary *didn't* is inserted under T⁰ and successively moves up to AgrS⁰, passing through the Neg head as well.

(75)   He didn't come.

(76)   AgrSP
              i
              AgrS'
                   3
AgrS⁰   NegP i
[3d person]   Neg'
                    3
            Neg⁰   TP i
            [+neg]   T'
                                3
                        T⁰   VP i

$$
\begin{array}{ll}
\text{didn't} & V' \\
\left[\begin{array}{l} \text{3d person} \\ \text{+past} \\ \text{+neg} \end{array}\right] & \begin{array}{l} V^0 \\ \text{come} \end{array}
\end{array}
$$

Generalizing over the two derivations, the [+neg] feature is checked by a lexical element that is endowed with an interpretable negative feature, either the negated auxiliary, or the specifier *not*.

In the present analysis, which heavily draws on Lopez (1995), *do* Support is needed when there is a strong feature above Tense, such as [+neg], [+person] in AgrS^0 in the case of negative sentences, which remains unchecked otherwise.

5.1 *Extending the analysis. Emphatic assertion*

The hypothesis that *do* is inserted when there is a strong feature above Tense which would remain unchecked is further confirmed by the possibility of extending the analysis to other contexts where *do* appears. Such are: questions, emphatic assertions, short answers, respectively illustrated in (77a-c) below:

(77)   a. Do you know this man ?
        b. Of course, I DO know the truth.
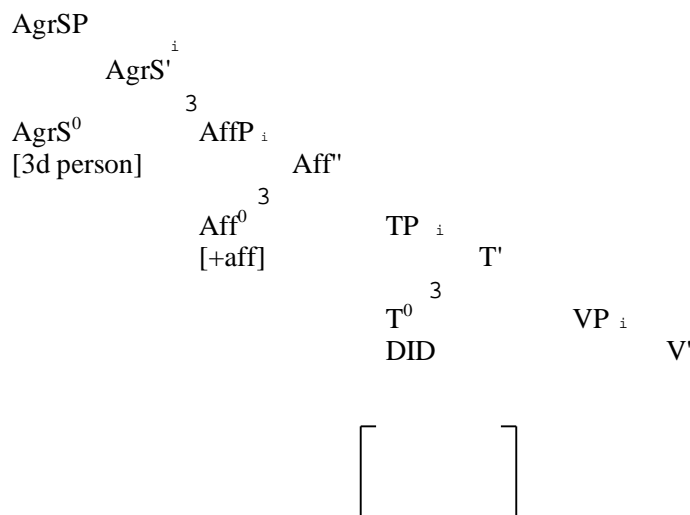   c. Of course, I do.

What these examples have in common is that in all *do* supports an abstract morpheme that is not phonetically overt: the question morpheme in (77a), the emphatic assertion morpheme in (77b). Consider emphatic assertions first, by examining the following paradigm:

(78)   a. Mary left.
        b. Mary didn't leave.
        c. *Mary did leave.
(79)   Mary DID leave.

Several linguists (Chomsky (1957), Klima (1964), Laka (1989)) have mentioned the existence of a morpheme labelled Aff(irmative), interpreted as *emphatic assertion*, a morpheme which induces *do*-Support in the same way as Negation. The morphemes Neg and Aff are in complementary distribution.

The emphatic assertion morpheme may be viewed as a head carrying an abstract strong [+aff] feature, which like the [+neg] feature must be checked by spell-out, by raising an appropriate auxiliary verb. Any auxiliary that checks the [+aff] feature will be assigned emphatic intonation. The strong Aff head triggers *Do*-Support. Thus, if in (80), DID were not inserted and there had been only an affix under Tense, the strong [+aff] feature and the strong agreement features in AgrS^0 would have remained unchecked.

(80)

$$
\begin{array}{l}
\text{AgrSP} \\
\quad \text{AgrS'}_i \\
\qquad\qquad 3 \\
\text{AgrS}^0 \qquad \text{AffP}_i \\
\text{[3d person]} \qquad\qquad \text{Aff''} \\
\qquad\qquad\qquad 3 \\
\qquad\qquad \text{Aff}^0 \qquad\qquad \text{TP}_i \\
\qquad\qquad \text{[+aff]} \qquad\qquad\qquad \text{T'} \\
\qquad\qquad\qquad\qquad\qquad\qquad 3 \\
\qquad\qquad\qquad\qquad \text{T}^0 \qquad\qquad \text{VP}_i \\
\qquad\qquad\qquad\qquad \text{DID} \qquad\qquad\qquad \text{V'}
\end{array}
$$

$$
\left[\qquad\qquad\right]
$$

$$+\text{past} \quad \begin{bmatrix} \text{3d person} \\ \quad \text{V}^0 \\ +\text{aff} \end{bmatrix} \qquad \begin{array}{c} ! \\ \text{leave} \end{array}$$

In case emphatic assertion and *not* are present together, *not* has constituent scope, not sentence scope. The following group of examples, due to Laka (1989), show that *not* represents constituent negation in case it co-occurs with emphatic *do*.

(81)   a I didn't, as Bill had thought, go to the store.
         b. I DID, as Bill had thought, not go to the store.
         c. * I DID not, as Bill had thought, go to the store.

The parenthetical phrase has been inserted before the main verb (VP) in order to block constituent negation readings for material preceding it. In sentence (81a) negation has sentence scope, and *do* is unemphatic. In (81b), emphatic *DID* and *not* co-occur, but *not* follows the parenthetical and is clearly adjoined to the VP, so that negation has constituent, rather than sentence, scope. Sentence (81c) has both the emphatic auxiliary and the negation *not*, in a position preceding the parenthetical clause, a position which indicates sentence negation. This is clearly impossible.

A further difference between the *not* of VP-constituent negation and the *not* of sentence negation is that only the latter may scope over the subject.

(82)   a. All of them didn't go to the store.
         b. All of them DID not go to the store

Whereas sentence (82a) can be interpreted as 'Not all of them went to the store.', sentence (82b) can only have the constituent reading for negation, meaning, 'All of them are such that they did not go to the store'.

Expectedly, all the verbs that may check [+neg], that is, modals, *have, be, do*, can also check [+aff]. Here are a few examples:

(83)   a. He HAS got at the truth at last.
         b. He IS still working on the project.
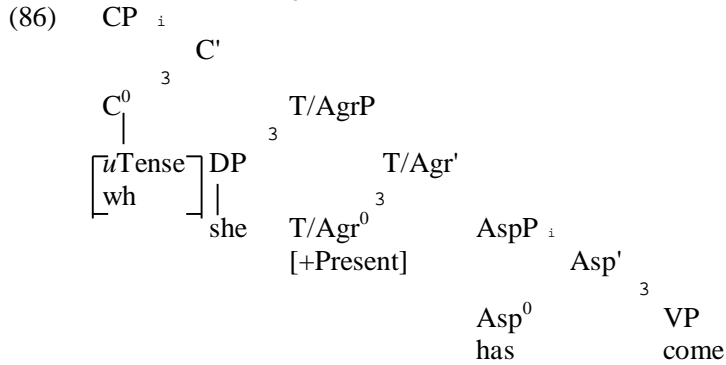   c. You MAY stay, that is what I was told.

5.2. ***Questions***. Root questions and short answers are also typical environments for *do*-Support. Consider the following sentences:

(84)   a. Did she go ?
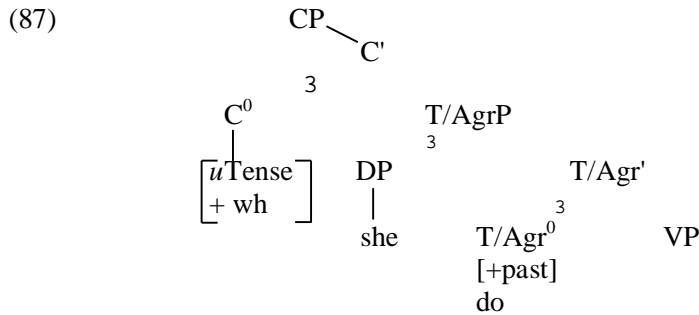   b. What did she sell ?
         c. Yes, she did.

Questions are CPs, probably containing a question feature and a *wh* feature in C^0. The question feature carries the interrogative meaning, the *wh* feature is the syntactic marker of a family of related constructions all of which involve *wh*-Movement (questions, relative clauses, cleft sentences). The question feature is strong in root questions and must be checked by moving an auxiliary verb to C^0. This is the familiar rule T/Agr^0-to- C^0 (I^0 -to -C^0). Since the question feature is checked by moving a verb, it has to be conceived as some sort of verbal feature, and since only finite auxiliaries undergo movement to C^0, the Q feature may be viewed as an *uninterpretable Tense* feature, finite Tense being the common property of modals, *have, be, do*. We will accept that root questions contain a Tense feature in C^0, a feature which must attract an

appropriate verb. In (85a), the aspectual auxiliary *have* will raise all the way up to C^0, finally checking the Tense and *wh* features.

(85) a. Has she come?
b. Is she still working with that company?
c. Could he still go there?

(86) CP $_i$

C'
$\overset{3}{}$

C^0 T/AgrP

$\begin{bmatrix} u\text{Tense} \\ wh \end{bmatrix}$ DP   T/Agr'

she   T/Agr^0 AspP $_i$

[+Present]   Asp'
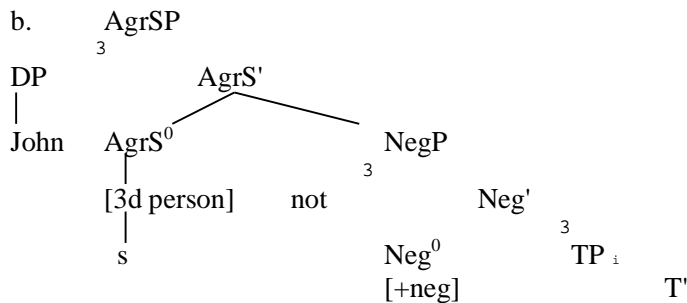
Asp^0 VP

has   come

Consider now the following representation with a main verb and no auxiliary. If Inflection is affixal, it lowers at PF, leaving the strong C^0 features unchecked. If Inflection is featural, the features remain unchecked unless *do* is inserted to check them. *Do* will therefore have to be inserted under T/ Agr checking Tense /Agreement and then the features in C^0.

(87)   CP
C'
$\overset{3}{}$

C^0 T/AgrP

$\begin{bmatrix} u\text{Tense} \\ + wh \end{bmatrix}$ DP   T/Agr'

she   T/Agr^0 VP

[+past]
do

The presence of abstract strong features like [+neg], [+aff], [+uTense/wh]] above T prevents Inflection from being affixal. If Inflection is affixal these features cannot be checked. Incidentally, this shows that, when Inflection is affixal, T/AgrS must represent a syncretic projection.

The analysis adopted for negation immediately rules out the following ungrammatical sentences:

(88) a. *John not reads in the afternoon.
b.   AgrSP

DP   AgrS'

John   AgrS^0 NegP

[3d person]   not   Neg'

s   Neg^0 TP $_i$

[+neg]   T'

$$T^0 \qquad\qquad VP_i \atop (s) \qquad\qquad {}_e V' \atop V^0 \atop read$$

3
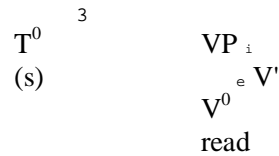
Sentence (88a) involves an apparently inflected verb *in situ* in overt syntax. Under the account adopted here, *reads* is not in the lexicon, since all main verbs are bare. Hence (88a) must arise from the merger of affixal Inflection-s- with *read.* If the morpheme -s is in T^0 below negation, then, admitting that *not* checks [+neg], the strong agreement features in $AgrS^0$ remain unchecked and the derivation crashes. If *s* is under $AgrS^0$, as it should be, then *not* intervenes between *s* and *read* and PF Merger, which requires adjacency, is blocked. Consider (89), now:

(89)   *John walked not

The infelicity of (89) is likewise explained. Given its position past *not*, *walked* must have raised to $AgrS^0$. But this is not possible. *Walked* is not in the lexicon, so even though featural Infl exists in English and even though its V-features are strong, *walked* could never be created by raising.

Conclusions

1. *Do* Support occurs in a variety of environments. In all of them *do* supports an abstract morpheme (e.g. +neg, +aff, +uTense, +Agr) which appears above Tense, therefore above the position of the affixes *s/ed*, and which would remain invisible, unchecked.
2. The presence of these abstract heads bearing strong features forces Inflection to be featural, and forces the use of an auxiliary which can successively raise to check all the features.
3. Given its morphology, *do* is inserted under Tense and must raise further at least as far as Agreement, possibly to C^0.
4. The requirement that these abstract features should be supported by *do* is a PF, not an LF, requirement
5. To claim that there is only one negation in an English sentence is to claim that the abstract Neg head licenses only one negative constituent.

6. Other types of negative sentences

6.1. *Sentences with negative quantifiers*
Consider the following sets of examples, containing negative quantifiers.

(90)   a. Nobody came to the party, did they ?
        b. Nobody came to the party, not even her brother.
        c. Few people showed up for the lecture, and no one showed up for the party either.
        d. Nobody likes him, neither do I.

(91)   a. They found nothing in the garden, did they?
        b. They found nothing in the attic, not even old coins.
        c. They found nothing in the first room and they didn't find much in the second room, either.

These examples point out to two things:

a) Sentences with negative quantifiers are syntactically negative and pass all the tests for sentence negation.

b) These sentences must be "marked" as negative by Spell-Out, because they overtly show the behaviour of negative sentences.

The standard analysis of examples like these relies on the insight that sentences with Neg quantifiers contain a NegP, headed by a [+neg] feature, and it is this Neg head which licenses the negative quantifier, if it has sentence scope. Such a view is strengthened by the existence of negative concord languages (e.g., Romanian), where the sentence negator must appear on the verb, in order to license the negative QPs. Thus in Romanian, *nu* always shows up in sentences with *nimeni, nimic*.
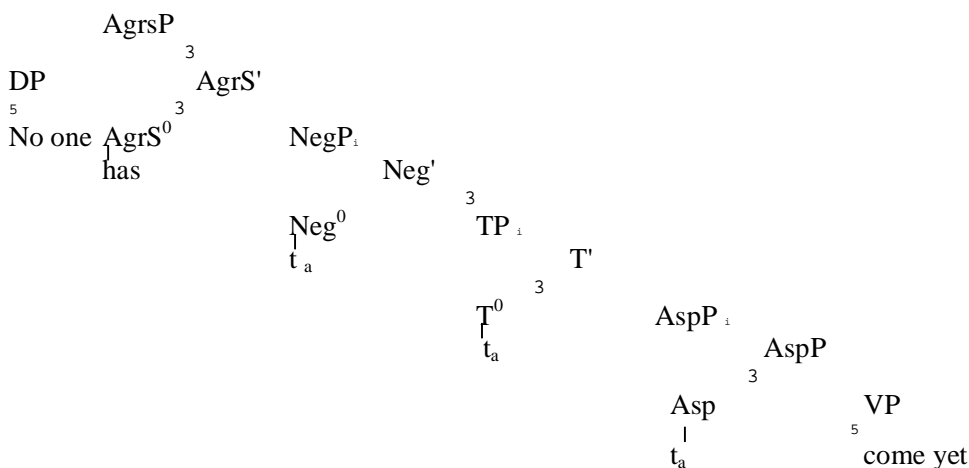
(92) a. Nimeni nu a venit.
      b. *Nimeni a venit.
      c. N-au gasit nimic.
      d. *Au gasit nimic.

As to the specific licensing strategy, a frequently invoked solution is the Neg Criterion (stated for instance in Haegeman (1995), following work by Rizzi (1990)):

(93) a. A negative operator (QP) must be in a Spec head relation with [+negative] X^0 head.
      b. A negative head X^0 must be in a spec-head agreement configuration with a negative operator.
      A negative operator is a negative phrase in a scope A'-position.

It is important to stress that in English the Neg Criterion has to be satisfied in overt syntax. The Neg Criterion stipulates that the negative quantifiers are licensed through a specifier-head relation with the Negative head. This analysis is immediately accessible where the Neg QP is the subject. We again examine featural and affixal Inflection. Consider first examples of type: *No one has come yet*.

(94) a. No one has come yet.
      b.

AgrsP
3
DP   AgrS'
5 3
No one AgrS^0 NegP$_i$
       has   Neg'
                         3
              Neg^0 TP $_i$
              t_a T'
                                3
                          T^0 AspP $_i$
                          t_a AspP
                                            3
                                      Asp   VP
                                      | 5
                                      t_a come yet

The negative subject is projected in SpecVP, where it gets its θ-role. It will raise to SpecT, checking Case and to AgrS checking its φ-features. The auxiliary verb raises through all the featural heads, including the Neg^0 head. This will enable the verb to carry the negative feature to the AgrS^0 head. The Negative Criterion will be satisfied in AgrSP through agreement between

the negative quantifier in Spec AgrSP and the verb which carries the negative feature in AgrS^0 (cf. Haegeman (1995)).

Thus the subject position SpecAgrS, which is supposed to be an A-position hosts a logical operator, which is supposed to be in an A'-position, an undesirable conclusion.
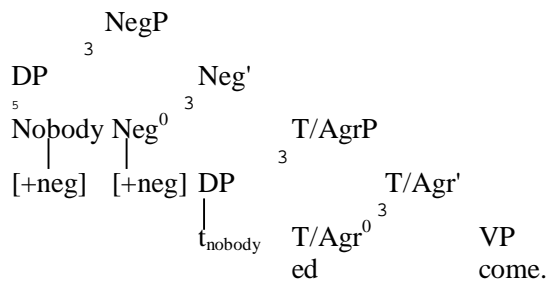
However, Rizzi (1990) has proved that a negative quantifier in subject position has A' properties. For instance it interacts with other scope-taking elements or it blocks extraction from its c-command domain. These properties of negative quantifier subjects are apparent in examples of the following type:

(95)   a. It is for this reason that everyone believes that Bill was fired.
         b. It is for this reason that no one believes that Bill was fired.

In (95a), the adverbial *for this reason*, may be associated either with the predicate *believe*, or with the predicate *was fired*, therefore it could have come from either sentence. In (95b), the adverbial *for this reason* can only modify the higher verb, *believe*. This difference shows that the *no one* creates an inner island effect, preventing the A'-movement of a lower constituent of the same sentence. *No-one* functions like an element in an *A'*-position. We will adopt the suggestion that AgrSP may optionally count as an A'-position (Rizzi, 1990: 21-22; Haegeman 1995:77), when other scope positions are not available (See for details Haegeman (1995, chapter 5.)

Consider now an example of affixal negation: *Nobody came*. The analysis is essentially similar. The QP is projected in SpecVP, raises to SpecT/Agr to check Case/φ-features. Since Inflection is affixal, the only way to activate the NegP is by moving the negative QP to Spec NegP, thus satisfying the Neg Criterion. The negative QP checks its negative feature against the negative head, ending up in an A'-position, as shown in (94). Notice that since the subject itself checks the negative feature, this configuration does not require *do*-support unlike the one in (74a) above.

(96)   Nobody came.
         b.

                    NegP
                 3
         DP   Neg'
         5   3
         Nobody Neg^0 T/AgrP
            | | 3
         [+neg] [+neg] DP   T/Agr'
                        | 3
                     t$_{nobody}$ T/Agr^0 VP
                                ed   come.

Thus, for all intents and purposes, the quantifier is the marker of the negative meaning in sentences with preverbal quantifiers.

Things are different for postverbal quantifiers where it is not obvious how the Neg Criterion is met. Clearly, the Neg QP does not overtly raise. A sentence like(97) below, where the Direct Object has apparently moved to SpecNegP, is ungrammatical.

(97)   a. *[$_{Agrs}$ Mary [has [$_{Neg\,P}$ nothing [$_{TP}$ t$_a$ [AspP t$_a$ [$_{VP}$ bought t $_{nothing}$]]]]]
         b. * Mary has nothing bought t$_{nothing}$.

At the same time, phenomena like *Do*-Support indicate that the negative head has strong features, therefore the Negative Criterion must be met in overt syntax in English. This means that it will not do to say that the negative QP *nothing* raises to Spec NegP at LF.

The proposal we adopt is that the NegP is activated by an empty Operator *Op*, coindexed with the negative quantifier in its lower position. There is spec-head agreement between the empty operator and the Neg head. Being null, the operator must be identified by overt material, and this forces its association (Chain Formation) with the closest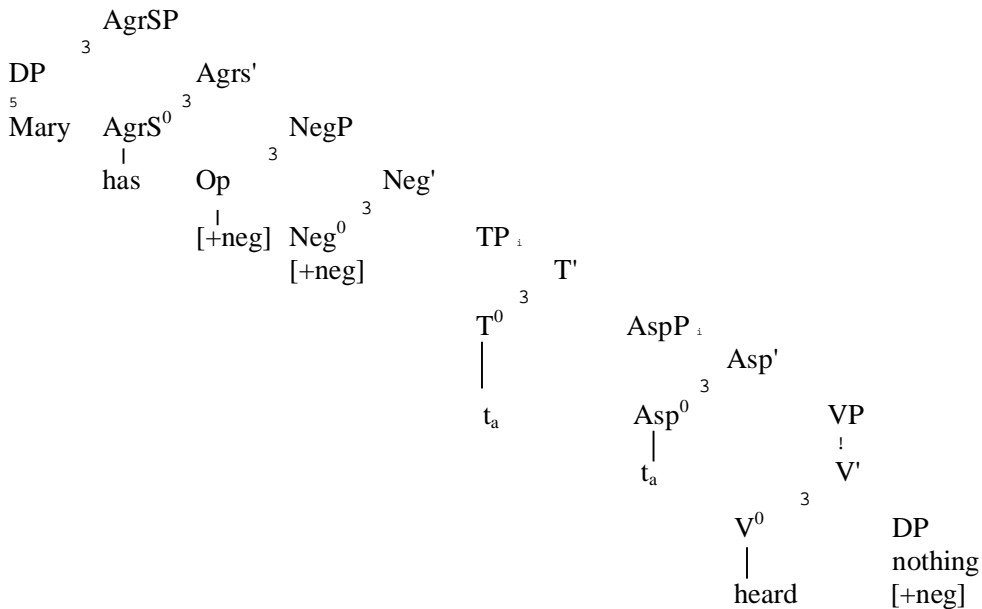 negative QP, which thus checks its negative feature. The Negative Criterion is thus satisfied through Chain Formation. The object QP thus checks its negative feature through Chain Formation with the empty operator in SpecNegP, which is the analogue of *not*. Here are two examples, respectively involving affixal and featural Inflection.

(98)   a. Mary bought nothing.
        b.   NegP
               3
        Op   Neg'
         | 3
        [+neg] Neg^0 T/AgrP
                [+neg]   3
                        DP   T/Agr'
                        | 3
                        Mary   T/Agr^0 VP
                                | !
                                ed   V'
                                          3
                                    V^0 DP
                                    | 5
                                    buy   nothing
                                                  [+neg]
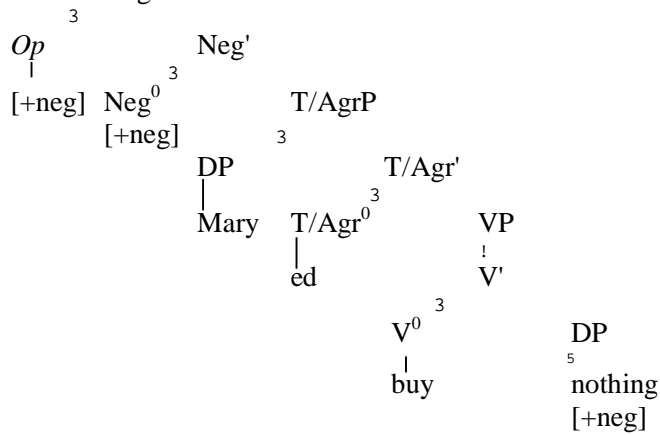
(99)   a. Mary has heard nothing.
        b.
        AgrSP
    3
DP   Agrs'
5   3
Mary   AgrS^0 NegP
         | 3
        has   Op   Neg'
                 | 3
                [+neg] Neg^0 TP $_i$
                        [+neg]   T'
                                   3
                                T^0 AspP $_i$
                                | Asp'
                                | 3
                                t$_a$ Asp^0 VP
                                               | !
                                               t$_a$ V'
                                                          3
                                                    V^0 DP
                                                    | nothing
                                                    heard   [+neg]

Conclusions

1. Neg QPs may have sentence scope, so that sentences containing them pass al the tests for sentence negation.

2. When they have sentence scope, negative QPs are licensed by vebal negation, therefore by the NegP.

3. Negative Quantifiers are licensed by the Neg Criterion.

6.2. *Emphatic negative sentences*

The last type of negative sentences considered are emphatic negative sentences. Consider the following sentences:

(100)   a. Not often did he digress from the topic.
          b. Not until yesterday did he change his mind.
          c. Seldom do I see him nowadays.
          d. Never before had he seen such a crowd.
(101)   a. Not long ago, it rained.
          b. Not unreasonably, one may expect results from him.
          c. In no small measure, it is his attitude that is blocking progress.
          d. Not far away, it was raining very hard.

It is easy to prove that sentences in (100) exhibit sentence negation, while those in (101) exhibit constituent negation, using the familiar tests. Instances of sentence negation admit *neither* tags, but instances of constituent negation do not.

(102)   Not often does Jack attend parties and neither does Jill.
          *Not long ago, Jack attended a party and neither did Jill.

Secondly, instances of sentence negation most naturally take affirmative tags, while instances of constituent negation take negative tags.

(103)   Not often does Jack attend parties, does he?
          Not long ago Jack attended a party, didn't he?

When there is sentence negation, negative polarity items (*any, ever*, etc.) are licensed, while otherwise they are not :

(104)   Not often does Jack attend any party.
          *Not long ago, Jack attended any parties.

According to Rudanko (1980), phrases which trigger inversion all "seem to be principally composed of adverbials with an overt or inherent quantifier and motivational adverbs"(1980:356): *not often*, *not always*, *not until*, *not even then*, *not because*, *not for any reason*, *not under any circumstances*, etc. The attempt to give a sharp semantic characterization of the inversion-triggering phrases is undermined by the fact that the same element may or may not cause inversion:

(105)   With no job, John would be happy.
          With no job would John be happy.
(106)   In no clothes, Mary looks attractive
          In no clothes does Mary look attractive.

This shows that it is the syntax of the sentence rather than the semantics of the phrase which is essential in the description of the contrast between examples (100) and (101).
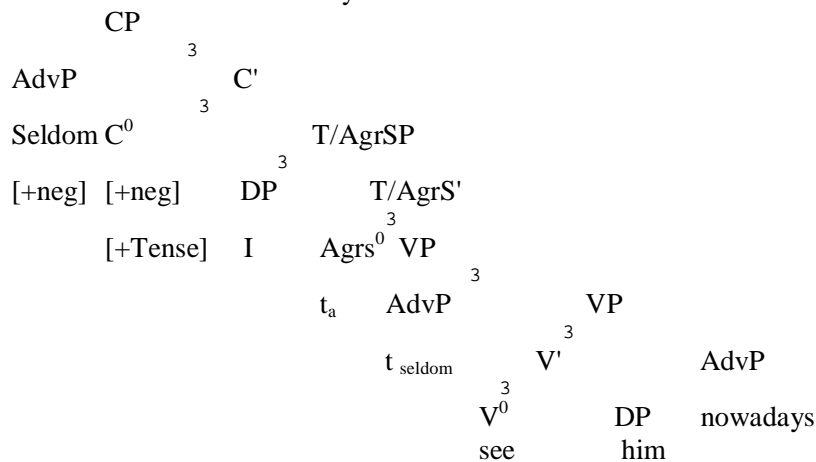
One way to account for the contrast (100), (101) is to propose that negative constituents which trigger inversion are operators, i.e., sentence negators which have moved to a scope position satisfying the Negative Criterion. Accordingly, they will be licensed in a configuration of specifier-head agreement with a negative head.

When a negative operator is preposed it causes inversion because it must find itself in a spec-head relation with a negative head. When an ordinary negated constituent is preposed, which

does not qualify as an operator, it does not trigger inversion since it will not require to be in a Spec-head relation with a negative head. Inversion signals the presence of the abstract negative head.

As to the derivation of the sentence negation cases, the question to raise is what it is that forces the negative quantifier to move to front position in the sentence. One possibility is that they are attracted to check a strong negative feature in C^0, a feature which is made visible by raising the auxiliary verb. One might conjecture, that the[+ neg] feature is parasitic on an (uninterpretable) Tense feature, which attracts the tensed auxiliary verb, just as with questions: The preposed negative constituent is thus licensed in a configuration of agreement with the negative complementizer. Here is an example:

(107)   Seldom do I see him nowadays

```
                CP
              3
AdvP                C'
              3
Seldom C⁰               T/AgrSP
                      3
[+neg]  [+neg]   DP         T/AgrS'
                          3
        [+Tense]   I    Agrs⁰  VP
                              3
                  tₐ    AdvP         VP
                                  3
                    t seldom     V'         AdvP
                              3
                          V⁰      DP    nowadays
                          see     him
```

Conclusion

In the following description of English complementation, the finite clause will be assumed to have (at least) the following structure:

$$CP > AgrSP > NegP > TP > AspP_1 > AspP_2 > VP$$