The position of subjects*

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Grammatical theories all use in one form or another the concept of canonical position of a phrase. If this notion is used in the syntax, when comparing the two sentences:

(1a) John will see Bill.
(1b) Bill John will see.

we say that Bill occupies its canonical position in (1a) but not in (1b). Adopting the terminology of the Extended Standard Theory, we can think of the canonical position of a phrase as its D-structure position.

Since the concept of canonical position is available, it becomes legitimate to ask of each syntactic unit in a given sentence what its canonical position is, relative to the other units of the sentence.

The central question we address in this article is: what is the canonical position of subjects? Starting with English, we propose that the structure of an English clause is as in (2):

* The first section of this article has circulated as part of Koopman and Sportiche (1988) and is a written version of talks given in various places. It was given in March 1985 at the GLOW conference in Brussels as Koopman and Sportiche (1985), at the June 1985 CLA meeting in Montreal, at MIT and Umass Amherst in the winter of 1986, and presented at UCLA and USC since. The input of these audiences is gratefully acknowledged. The second section is almost completely new.

1 For related ideas on what we call the canonical position of subjects, see Contreras (1987), Kitagawa (1986), Kuroda (1988), Speas (1986), Zagona (1982).
(2)

\[ \text{IP} \]

\[ \text{NP}^* (= [\text{spec}, \text{IP}]) \]

\[ \text{I'} \]

\[ V_{\text{max}} \]

\[ \text{NP}^* \quad \text{VP} \]

where \( \text{NP}^* \) is the canonical or D-structure position of the subject, \( \text{NP}^\sim = (\text{spec}, \text{I}) \) is its S-structure position in simple declarative clauses, and \( V_{\text{max}} \) is a small clause whose predicate is \( \text{VP} \).

More generally, we propose that the constituent structure in (2) (linear order aside) can be generalized to hold of many (and perhaps all) languages, and that these languages fall in two classes. In Class 1 languages, such as English, French, Vata ... , a subject generated in position \( \text{NP}^* \) must move to position \( \text{NP}^\sim \). In a Class 2 language, such as possibly Italian, Welsh, Japanese, ..., a subject generated in the \( \text{NP}^* \) position does not have to raise to the position \( \text{NP}^\sim \). We will suggest that raising may also be obligatory in such a language, although not necessarily to \( \text{NP}^\sim \).

1. **INFL as a raising category**

   Consider our proposal for English. It is equivalent to saying that INFL is a raising category. In this section, we argue that departure from this analysis of INFL needs arguments, arguments that are presently lacking.

1.1. **Raising verbs**

   Start with a prototypical raising verb like *seem*. Why is it taken to be a raising verb?

1.1.1. **Syntactic arguments**

   Here is a list of the classical arguments for analyzing the verb *seem* as a raising verb:

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2 Throughout the paper, we will use \( \text{NP}^\sim \) and \( \text{NP}^* \) to refer either to these particular positions or to the content of these positions. The context will make it clear what is meant in each particular case. We also need to distinguish between the various projections of \( V \). We call \( \text{VP} \) the phrasal projection of \( V \), while \( V_{\text{max}} \) is its maximal projection.
(1) *seem* imposes no selectional restrictions on its subject;
(2) *seem* can take expletive *it* as subject (*it seems that John sleeps all the time*)
or non-expletive subjects (*John seems to sleep all the time*);
(3) *seem* allows as subject an NP licensed by the predicate of the clause embedded under it:
weather *it* (*it seems to rain*)
idiom chunks (*the cat seems to be out of the bag*)
existential *there* (*there seems to be a griffin on the 22nd level*)

In contemporary terms, we see that all these properties have as necessary (but not sufficient) precondition the fact that *seem* does not assign an external theta role.

Why are all these observations considered arguments for treating *seem* as a raising verb? The answer is that the expression of certain lexical or grammatical relations requires a configurational or syntactic closeness: lexical relations such as selection, subcategorization or theta assignment can hold only of items that are structurally close. To put it differently, lexical relations are projected from the lexicon into the syntax subject to strict locality requirements.

Let us look at each case in turn:

In *John seems to sleep all the time*, *John* is licensed by *sleep*, by virtue of the theta relation between the two. Theta relations are considered to be local in such a way as to exclude skipping over the verb *seem*.

In the weather verb case, the idiom chunk case or the existential sentence case, the reasoning is the same, even though it does not have to do with theta relations. In each case, the subject of the main clause is licensed by the bottom predicate by syntactically projecting a property of the bottom verb according to rules that disallow skipping over the main verb.

1.1.2. *Semantic representation of raising verbs*

There is another, less straightforward reason why *seem* is treated like a raising verb. Consider a pair of sentences as:

(3a) It seems that John sleeps all day.
(3b) John seems to sleep all day.

Informally speaking, we want to say that their common semantic representation is SEEM(SLEEP(John)). It is quite straightforward to get this representation from the first sentence: *John* appears as a syntactic argument of the verb *sleep* as well as an argument of the corresponding semantic predicate.
This parallelism breaks down in the second case. How then is the structure of its semantic representation computed?

If *seem* is a raising verb, the relevant syntactic representation of (3), when looked at appropriately, is in fact *seems John to sleep all day* (due to the presence of the trace of *John*), i.e. essentially identical to the first sentence. The identity of semantic representations follows.

If *seem* is not a raising verb, two options arise for treating the second sentence. The first option consists in lowering the subject when computing the semantic representation of the sentence. This option is not really an alternative to the raising analysis. It is its mirror image. It is a notational variant that can be implemented consistently (e.g. locality conditions on projection of lexical properties will apply after lowering rather than before raising, etc.). The second option consists in denying identity of semantic representation for the two sentences and in arguing that the representation for the second sentence is *(SEEM(SLEEP))(John)*. This comes down to treating *seem* as a function mapping a predicate P into a predicate P' such that P' inherits all the properties of P relating to its external argument if any. This option, although not impossible, requires strong empirical motivation, for it claims that there are two verbs *seem*. Ignoring the experiencer, the verb *seem* appearing in the second sentence would be a function mapping a predicate onto a predicate and taking one or no individual as argument, depending on whether or not the embedded verb has an external argument. The verb *seem* that appears in the first sentence would be a one-place predicate taking a proposition as argument. This empirical motivation is, to our knowledge, lacking.

1.1.3. Further remarks on semantic properties of raising verbs

Not all the predicates usually analyzed as raising allow an expletive subject and a tensed clause complement (e.g. *tend, believable*). Nevertheless, they display all the other relevant properties of the verb *seem*, and we therefore want to treat them as raising predicates. Of course, appeal to locality of the syntactic expression of theta and other relevant relations will have the desired effect. Does the 'semantic' argument apply here too?

A very strong claim which we could base on the discussion above is the following: there is no category C taking predicates as complements that is analyzed as a function mapping predicates onto predicates (except for the trivial case where the predicate in question has no external argument). This property would follow from the more general:
(4) No category takes as complement a syntactic category corresponding to a non-saturated predicate.

If this is correct, the argument above will extend to the raising predicates not taking the expletive subject/tensed clause complement combination.

In his *Case for Case*, Fillmore (1968) proposed informally that clauses are made up of two constituents corresponding to a modality and a proposition. The intuition (also found in much generative semantics work) behind this proposal is rather clear. Consider modals, which, by assumption, appear in INFL. Semantically, it appears natural to suppose that they take saturated predicates or propositions as arguments. So a sentence like *Mary might sleep all day* can be paraphrased by *it is possible that Mary sleeps all day*, in which the semantic import of the modal in the first sentence is carried by the main clause in the second one. More specifically, it is carried by the adjective *possible*, which takes as argument a clause corresponding to the non-INFL material of the first sentence and in particular, containing the saturated predicate of the first sentence. To an extent that is theory particular but always substantial, syntactic theories all assume that there is a correspondence between semantics and syntax. The core of the intuition behind proposals such as Fillmore’s seems to be that the null assumption is that there is as transparent a correspondence as possible between ‘semantic constituent structure’ and syntactic structure: the strongest (and very possibly too strong) position would postulate the existence of a well-defined function from (the right class of) semantic types onto syntactic constituents and reciprocally. The principle in (4) is a particular case of this general transparency requirement. Applied to this case, if INFL takes a saturated predicate as argument, it is a priori reasonable to postulate that this semantic fact is reflected syntactically. Hence the naturalness of Fillmore’s proposal. Proposing that the structure in (2) underlies clausal structure can now be seen as a contemporary way of embodying this intuition in syntactic theory: to Fillmore’s modality constituent corresponds INFL. To Fillmore’s proposition corresponds the constituent [NP VP].

Finally, if the semantic property of auxiliaries as taking a propositional complement is mirrored syntactically, it provides reasons for assuming that in (2) above NP and VP do form a constituent.

1.2. **Raising INFL**

1.2.1. **The raising properties of INFL**

We now turn to the case of INFL. We want to show that the minimal
analysis of tensed INFL is that it is a raising category.\textsuperscript{3} In order to make the point, let us consider some prototypical material in INFL, the modal \textit{will}. Everything that follows applies equally well to anything else that might appear in tensed INFL. We have the following observations:

(i) \textit{will} does not assign an external theta role;

(ii) \textit{will} allows as subject an NP licensed by the predicate embedded under it:

- external argument of a predicate (John will sleep)
- weather it (it will rain)
- idiom chunks (the cat will be out of the bag)
- existential there (there will be a giffin on the 22nd level)

These are diagnostic properties of raising items. We therefore conclude that \textit{will} is a raising verb. By the same arguments all the modals are raising categories, \textit{do} is a raising verb, and more generally tensed INFL is a raising category. By the same argument, if negation heads a NEGP complement of INFL as recently suggested, negation is a raising category. By the same argument, if INFL is split between Tense heading a TP and AGR heading an AGRP (Pollock 1989), both T and AGR are raising categories. By the same argument, aspectual verbs (perfective \textit{have} and \textit{avoir}, passive \textit{be} and \textit{être}, progressive \textit{be}), which are analyzed as heading their own VP and taking VP complements are raising verbs.

This is a strong consequence. Suppose, as we claim, that aspect is determined outside the maximal projection of the verb, and that the maximal projection of the verb contains all its arguments. This would suggest that the thematic properties of a predicate are independent of the aspectual properties of the clause it appears in, although aspect could be dependent on some thematic properties. There are superficial examples of such dependencies: if a verb takes an agent, it can be put in the progressive.\textsuperscript{4} We expect no dependencies going the other way (although Campbell 1989 argues otherwise).

1.2.2. Locality, theta theory and selectional restrictions

As we mentioned earlier, locality of theta assignment and selectional

\textsuperscript{3} The claim appears to be different from the case of raising verbs because raising is a property of individual verbs not of a grammatical category. We want to claim that I never has a deep subject and that when it does have a surface subject, it is by raising.

\textsuperscript{4} The implication could plausibly be attributed to something else than thematic properties. Suppose the correct generalization is that all verbs involving a change of state can be put in the progressive. Since agentive verbs are always verbs of change of state, they can be put in the progressive: reference to thematic structure is only indirect.
restrictions is the crucial assumption underlying our conclusion that INFL and other categories are raising categories. We discuss this now.

The standard analysis does not assume that INFL is a raising category. How is the distinction between raising verbs and INFL made? Consider the relation between thematic structure and constituent structure. Chomsky (1986) and many others have argued that a theta assignment relation between X and Y requires sisterhood between X and Y. This proposal takes the realization of the theta relation between a verb and its direct object (sisterhood) to be the canonical way to realize theta relations. However, Chomsky (1986) notices that a complication arises in the case of assignment of theta role to subjects by VP’s (on this see Chomsky 1981, Marantz 1984). Indeed, given the standard clause analysis in which INFL is not a raising category:

\[
(5) \quad [_{IP} [\text{spec, } I] [I [_{VP} [V, NP]]]]
\]

sisterhood must be so defined as to ignore intermediate projections of INFL (we ignore here the technical problems that this proposal raises). Sisterhood has to be amended accordingly. Surely, this amendment is no simplification. No such complication arises under (2), i.e. if I is a raising category. We can take the syntactic requirement as being simple sisterhood throughout.

This argument is a simplicity argument: we show that a formally simpler notion of sisterhood is all we need. Such arguments however tend to be weak. We need the right notion of locality, whatever it is. But, given that INFL displays the diagnostic properties of raising, it takes an argument to go to the extra complication. We know of none. A couple of remarks might further strengthen this argument.

First, remember that we concluded that aspectual verbs are raising verbs too. They head their own verbal projections, taking VP complements. Since theta assignment is able to skip over them, we must conclude that sisterhood cannot be simply amended so that non-lexical projections are ignored. This is yet an extra complication, although not insurmountable. Second, it is quite clear that the same reasoning extends to selectional restrictions. If selectional restrictions also require sisterhood, the argument for simplicity is the same. However, if selectional restrictions do not require sisterhood but a more permissive locality condition such as government, then again we will need to amend the usual notion of government just to take care of selectional restrictions imposed on external arguments if tensed INFL is not a raising category.
1.2.3. The existence argument

So far, we have shown that there is some motivation for taking tensed INFL (and aspecual verbs ...) to be a raising verb, and furthermore, that not assuming this leads to some complications. We now show that the grammar of English (or French) as it stands generates raising structures with INFL already.

This argument is an elaboration of remarks found in Stowell (1983). Stowell shows that small clauses of the type $Y = [NP X]$ exist for $X = A, P, N$ and $V$. The interesting point is that he establishes directly (i.e. by exhibiting) and indirectly (i.e. by generalizing the structures of the type $Y$ with all the lexical $X$'s) the existence of small clauses with verbal heads. In other words, the kind of constituent we postulate as complement of INFL has been argued to exist independently of our proposal.

In such small clause structures, the external argument of the predicate of the small clause is syntactically projected as sister of a projection of this predicate. This establishes that a subject (or, more precisely an external argument) can be projected as sister to its predicate.

Let us apply this to VP's. If a VP with an external argument can realize this argument as its sister in small clauses, nothing prevents this projection rule from applying in clauses as well. How can we avoid projecting the subject of a VP as sister to this VP in a clausal structure? In other words, the very existence of small clauses triggers the generation of structures like (2). The real question becomes whether the standard clause structure in (5) is ever justified. In the absence of arguments in favour of it, it has become superfluous. Note finally that the discussions in the previous subsections all point toward the same conclusion: the hypothesis that theta roles are assigned under sisterhood indicate that NP* and VP in (2) are indeed sister nodes and that I and NP* are not; the fact that small clauses exist independently indicates that the sequence NP VP in (2) forms a constituent excluding I, assuming the standard approach to small clauses according to which the predicate and its subject form a constituent excluding the rest (an assumption presumably having to do with the general relationship between semantic types and syntactic constituents). This is what we will continue to assume.

1.3. Additional arguments

1.3.1. The X-bar theoretic argument: VSO languages

First, we suppose that the null assumption concerning language variation is
that it does not exist. In the absence of (learnable) evidence to the contrary, language structure does not vary. This puts an upper bound on how complex or remote from the primary linguistic data parameters can be. To be sure, detailed claims about the nature of this upper bound are intimately tied to the theory of how language acquisition actually proceeds. However, it appears plausible to suppose that covert structural differences such as that between the standard clause structure and the one we propose (or more generally differences of hierarchical organization of constituents) will be beyond this upper bound. Consequently, if some language can be shown to have a clausal structure of the type illustrated in (2), English will be assumed to have it too and reciprocally.

Consider a VSO language like Welsh or Irish. Assume the correctness of the standard clausal structure repeated below:

\[(5) \text{[IP [spec, IP] [I: L [VP [v, V NP]]]]}\]

Then, S(subject) is generated as the specifier of I; V and O are generated as part of a constituent in the VP excluding S, and the VP is the complement of I. This means that a VSO language cannot be base generated as VSO, since V and O must form a constituent excluding S. In other words, a VSO structure involves movement. This conclusion, which extrapolates constituent organization from the way it is in English or French to languages that look superficially different is supported empirically in various ways. As noted by many (Emonds 1981, Jones and Thomas 1977, Harlow 1981), one supporting fact is that Welsh and Irish are also AuxSVO languages if there is an auxiliary. This suggests that the VSO structure involves movement of the V to the position that an overt Aux otherwise occupies. What is this position? Verb movement is by now fairly well documented. This documentation suggests that two landing positions for this verb movement are a priori plausible: it could be INFL, or it could be COMP. In the well-documented cases (the Germanic languages, Den Besten, 1983 and others), movement of V to COMP takes place only in the absence of an overt complementizer. If a C-position is filled, it cannot be a landing site for V movement. If the C-position is not filled, it is available as landing site: this is why, in general, V to COMP (i.e. V-second) is only observed in root contexts. In Irish or Welsh, the VSO

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6 Further supporting arguments can be constructed on the basis of the head complement relations found in categories other than V, for example.

7 We follow Chomsky (1986) in assuming that the C projection conforms to all others, with CP = S-bar. We will use Comp informally to refer to C or specifier of CP.
order is observed both in root clauses, and in non root clauses. This in itself is not significant. However, it occurs in clauses containing overt complementizers, e.g. embedded clauses. This indicates that the simplest assumption is that the VSO order is derived by V-movement to INFL. This kind of V-movement, clearly found in French (cf. Emonds 1978) or in Vata (cf. Koopman 1984) is unaffected by the presence of complementizers. From this, we may conclude that the AuxSVO order is simply the base generated order, with V and O being part of a VP excluding S. So the structure of Irish/Welsh is: INFL SVO. The problem with this is apparent. If structural variation is preferably avoided, S should be specifier of INFL as in (5) above, and the VP containing VO the complement of I. If the AUX SVO is base generated as such, S, the specifier of I, intervenes between INFL and its complement VP. But this contradicts X-bar theory which claims that a head and its complement form a constituent excluding the specifier. It also contradicts the facts of Irish/Welsh, which do not allow a specifier to so intervene. Keeping to minimal assumptions, there are several possibilities: (i) S is specifier of I, but the INFL S VO structure itself involves movement; or (ii) VP is not a complement of INFL; or (iii) S is not specifier of I. The problem with (i) is that it is unclear what kind of movement it could be. For example, there is no plausible landing site between INFL and VP that would c-command the launching site given the right branching character of the language.8 (ii) also raises questions. INFL is not a lexical category. A priori, then, we do not expect radical language variation in its complement structure. If INFL takes a VP complement in English or French, it should do so here too. Koopman (1987) provides independent evidence based on Bambara that INFL subcategorizes for an XP complement, and VP in particular.

Suppose then that S is not specifier of I. We are led to a structure of the sort:

(6) \[ \text{INFL NP VP} \]

It turns out that there is substantial evidence internal to Irish and Welsh supporting this conclusion as Chung and McCloskey (1987) have shown for Irish, and Harlow (1981) for Welsh (cf. also Sproat 1985, Koopman 1984). Assume that, more precisely, the structure is: INFL [NP VP], with NP and

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8 If it is INFL that preposes around S, then it cannot be to C, as already discussed. (We do not consider the possibility that I adjoins to an overt C.) If there is some intermediate head to which INFL moves, it means that S is not highest specifier of the complement of C. But this would mean that the situation is unlike that of English, assuming the standard clause structure.
VP forming a constituent, as Chung and McCloskey propose. Given this conclusion, we now face the reverse problem: if S is not specifier of INFL in these languages, it should not be so in English either. If we cannot make Irish like English, we should, at the appropriate level of linguistic representation, try to make English like Irish: the simplest assumption seems to be that S is not generated as specifier of INFL in English either. Rather, it is generated as a sister to VP. By the same reasoning as above, if we observe the surface word order S INFL VO, it must be because S moved from its base-generated position to pre-INFL position. Basically this leads to the adoption of the structure given in (2). S is base generated in the position NP*, and is moved to specifier of INFL position NP.

1.3.2. Agreement in Arabic

Standard Arabic is a language in which the orders VSO and SVO are both observed in simple clauses. The interesting feature here is the agreement pattern. In the order VSO, the verb only exhibits a default number agreement (3rd person singular). With the SVO order, the verb fully agrees with S. How does agreement in clauses function? Let us assume the following standard version. Agreement is the morphological reflex of a relation between INFL and its specifier, or more generally, between a head and its specifier. This property of INFL is realized on the verb because the verb moves into INFL. As Mohammad (1989) observes, the Standard Arabic agreement pattern can be analyzed quite simply under the above treatment of VSO order coupled with assumption (2). VSO in Arabic, Mohammad argues, results from the obligatory movement of the verb to INFL, i.e. from an underlying INFL S VO. If nothing further takes place, INFL has a silent expletive specifier as Mohammad argues (or no specifier position at all) and agreement gets the default value, namely 3rd person singular.

In the case of the SVO order, however, the derivation from an underlying INFL S VO comprises one more step. First, the V obligatorily moves to INFL position. In order to reestablish the SVO surface order, it must be assumed, just like in English, that S moves to specifier of I. Consequently, V in INFL has a specifier and fully agrees with it: we get subject/verb agreement (see Mohammad, 1989, for a detailed analysis).

1.3.3. Q-float

The argument for structure (2) based on the distribution of Q's rightward

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*We disregard here gender agreement, cf Mohammad (1989) for more discussion.
‘floated’ from their NP is extensively developed in Sportiche (1988a). We limit ourselves here to a short outline of the logic of the argument.

In the first instance, such Q's appear between INFL and VP. It behaves with respect to the NP it is related to just like an anaphor does with respect to its antecedent. Yet, it can be shown that it is not an anaphor. These central observations can be explained by the following scenario.

(i) The clausal structure (2) is correct.
(ii) Movement takes place from NP* to NP, leaving a trace.\(^\text{10}\)
(iii) This movement optionally pied pipes Q. If not, we have a floated Q next to the trace NP*.

This explains why Q appears between INFL and VP: simply because NP* does (subjects of small clauses may precede their predicate). This also explains the anaphoric relation. This relation really holds between NP and its trace NP*. Q, being adjacent to this trace, gives the illusion of being anaphorically dependent on NP. More generally, any time a structure contains an empty category e dependent upon another NP**, if e is modified by Q, the illusion that the Q has floated off NP** will be created. Reciprocally, if a Q is stranded, we may suspect the existence of a covert NP adjacent to it.

### 1.3.4. Q-lowering

Consider the following sentence:

(7) A griffin seems to be lurking on the 25th level.

In such an example, the indefinite subject can be understood either outside the scope of the verb seem (i.e. There is a griffin such that it seems to be lurking on the 25th level) or inside it (i.e. It seems that a griffin is lurking on the 25th level). As May (1977, 1985) has discussed, this is due to the fact that the main verb is a raising verb, so that the second interpretation can be reconstructed by ‘lowering’ the main subject into its base position. Aoun and Li (1988) propose a different treatment of this ambiguity. However, their approach shares with May’s approach the idea that the crucial factor is the presence of a trace of the main subject in the embedded clause.

\(^\text{10}\) We differ here from Sportiche's (1988a) exact formulation of this process, and follow Koopman's (in prep.) (for English and French) and Shlonsky (1991) (for Hebrew), who argue that the Q actually is the head of the constituent [ all [ the people], taking an NP complement. NP moves through [SPEC, QP] leaving Q stranded.
The same 'lowering' effect is observed with the following structures:

(8) A griffin might be lurking on the 25th level.

The two interpretations here are one with main subject outside the scope of the modal: there is a griffin and it might be lurking on the 25th level, and one with the main subject inside the scope of the modal: It might be that a griffin is lurking on the 25th level.

According to (2), might in INFL is a raising category, i.e. followed by a trace of the subject: the facts follow.

1.3.5. Possible idioms

We can elaborate on the argument for raising based on the distribution of idiom chunks. Idiomatic expressions are extremely common in English. What possible shape can they take? The semantics of idioms must be stated in some component of the grammar. The natural place is the lexicon, the repository of idiosyncratic information. It would appear rather natural at first that idioms are simply fully specified constituents with an idiomatic reading. It is quite easy to exhibit counterexamples to this generalization. Many idioms contain open positions: e.g. lose one's cool.

Surely however, there are constraints as to the open or variable positions that an idiom can contain. Otherwise, nothing would prevent an idiom only containing the italicized elements as part of it:

(9) A pale man slowly put flowers next to John.

Since such idioms do not exist, it is not obvious what this one could mean. Assume the following: only if pale modifies a subject and slowly co-occurs in the same proposition does the following idiomatic interpretation arise: pale means unknown to the speaker and the action was done in a roundabout way. In other words, when uttering (9), the speaker means that the man unknown to me put flowers next to John in a roundabout way. More generally, pale X slowly verbed .... stands for X unknown to speaker verbed in a roundabout way.

In order to exclude impossible idioms, we may propose that idioms must at least meet a condition stronger than (10) below: \( l_1 \) seems necessary (and sufficient for our present purpose), but it is not the strongest possible condition that idioms must meet: a plausible strengthening would extend it to all the intermediate constituents: if XP contains idiomatic material, \( X^0 \) is fixed. Thanks to Richard Carter for useful discussion on this topic.
(10) If \( X \) is the minimal constituent containing all the idiomatic material, 
the head of \( X \) is part of the idiom.

Applied to (9), this would mean that the head of \( S \) should be part of the 
idiom, which it is not. So this idiom is excluded. Similarly, the specifier of a 
noun and the complement of a noun cannot form an idiom together, with the 
head noun an open position. A verb taking an NP and a PP as complements 
cannot be an open position of the idiom made up of the NP and the PP.

Consider such idioms as \textit{the shit will hit the fan}. For such idioms, (10) 
predicts that the minimal constituent containing the idiomatic material \( S = \text{IP} \) 
should have its head fixed. But there is no constraint whatever on the content 
of \textsc{infl} in such sentences. If the structure of \( S \) is \textsc{subject} \( [\text{s, I Vp}] \), these 
idioms constitute a systematic class of counterexamples to (10). Note that it is 
not the case that non-lexical categories cannot be part of idioms. For many 
French speakers examples such as \textit{les carottes sont cuites}/(the carrots are 
cooked) ‘all is lost’ in which \textsc{infl} is fixed, or \textit{Que le diable l'emporte}/(let the 
devil take him away) ‘let him be damned’, in which the complementizer is 
obligatory, are idioms. Of course, because of movement processes, a condition 
like (10) must be understood to hold at D-structure. Now, it is clear that 
adopting our proposal on clause structure in (2) removes this class of idioms 
as exceptions. At D-Structure, the minimal constituent containing all the 
idiomatic material is \( V^{\max} \), excluding I.

1.4. Conclusion: What is a subject?

Consider the superficial properties of the subject of a clause in English (or 
French). A (non-derived) subject:

(i) occupies the position specifier of I, i.e. \([\text{NP, S}] \) in usual terms;
(ii) is the external argument;
(iii) triggers agreement with the verb.

These three properties are usually all analysed as a property of the specifier of 
\textsc{infl}. Adopting (2), we see that the three properties do not correlate. 
Property (ii) is a property of \([\text{NP, V}^{\max}] \). Properties (i) and (iii) do correlate 
due to the fact that we get specifier-head agreement, and we get a merger of 
\( V \) and I (by \( V \) to I or by Affix-hopping).

The distinction between (i) and (ii) sheds a different light on the question of 
what the head of \( S = \text{IP} \) is. Should the subject be contained in the maximal
projection of $V$, or is the standard clause structure (as in (4)) correct? (See Marantz 1979, who suggests that $V$ is the head of $S$, and Hornstein, 1977, who suggests that $\text{Aux}$ is the head of $S$.) The answer according to (2) is positive, if we take subject as meaning external argument,\textsuperscript{12} negative, if we take subject as meaning the NP triggering agreement. In a sense, then, both positions are correct: the maximal projection of $V$ contains the subject understood as external argument but does not contain the subject understood as the NP triggering agreement.

2. Some implications

2.1. Summary and questions

Summing up our conclusions: in a language like English or French, the internal structure of clauses is as in (2) repeated below.

\[ (2) \]

\[
\text{IP} \quad \text{NP^∗ (spec, IP)} \quad \text{I} \quad V^\text{max} \quad \text{NP^∗} \quad \text{VP}
\]

The canonical position of the external argument of $V$, if any, is NP^∗, in which position it is initially generated. At S-structure in the simple cases we have discussed, i.e. basically tensed clauses, an overt external argument is realized in NP^∗: movement from NP^∗ to NP^∗ must take place. English and French tensed INFL are raising categories.

Note that we have not shown that I is a raising category in general. Rather, we have shown that since (spec, I) = NP^∗ is always a θ-position, no selected or theta-marked NP can be base generated there. If a selected NP appears in NP^∗ position, it means it has moved there. In particular, we have established that when the external argument appears as specifier of INFL, raising must have taken place. Since this is always the case for French or English tensed clauses, tensed I is a raising category. This leaves open the possibility that movement from NP^∗ to NP^∗ does not take place in certain cases.

\textsuperscript{12} The term external might need to be slightly redefined. The distinction external/internal is still necessary, of course.
A number of questions now arise:

(1) What exactly is the nature of the difference between constructions in which raising from NP* to NP^ is obligatory and constructions in which it is not? We will suggest that the parameter has to do with Case theory, and more specifically with the way in which nominative case is assigned by INFL. We discuss this in section 2.2.

(2) Generally, we can ask whether a particular choice of INFL material in a particular language allows, requires or prohibits raising. In particular, we have argued that raising of NP* to NP^ in Irish, Welsh or Arabic tensed clauses is not obligatory (and perhaps impossible). Does this actually mean that external arguments in these languages surface in their D-structure position or does it mean that they do not raise to NP^?

We will argue that the proper consequence of the parametric variation in the properties of INFL is whether or not raising to NP^ is obligatory or not. We will suggest that there may be intermediate projections between the highest INFL projection (i.e. IP = S) and the highest VP projection. The relevant difference between constructions or languages will be whether or not raising to the specifier position of the highest INFL is required or not. We discuss this in section 2.2.3.

(3) More specifically, we can ask how English or French non-finite clauses behave with respect to raising. Is there raising in gerundival clauses, infinitival clauses with covert subjects or Exceptional Case Marking structures?

We discuss this in section 2.3.

(4) Next, we consider the position NP*. In a number of articles that have adopted the so-called VP-Internal Subject Hypothesis (ISH), two views are found: the position of Koopman and Sportiche (1985, 1988), and repeated at the beginning of this article is that NP* is in the subject position of small clause with VP predicate. Others (Kuroda 1988, Speas 1986) have suggested that NP* is in the specifier position of the VP headed by the main verb. In section 2.4 we will discuss these two alternatives and argue in favor of our position and show that it is compatible with the idea that NP* is the specifier of a VP.

(5) Given that [SPEC, IP] never receives a theta-role, Chomsky's (1981) definitions would characterize it as an A-position. However, it is usually considered an A-position. Is it an A-position or an A-position? What kind of movement is movement to NP^, is it an instance of NP-movement or akin to wh-movement? These questions are addressed in section 2.5.
(6) Then, there are questions relating to subjects in general. The extended projection principle requires the existence of the subject position of clauses. How is this to be interpreted within this new context? Looking at (2), does this mean that $NP^\ast$ is an obligatory position, or does it mean that $NP^\ast$ is an obligatory position? These questions which also relate to the distribution of expletives are not discussed in this article.

(7) Finally, we can ask how the ISH relates to other properties of subjects. If some difference in parameter value is involved, how does it relate to other parametric variations involving subjects such as the possibility of having null subjects and subject/object asymmetries? We do not discuss these questions here. Some discussion can be found in Koopman and Sportiche (1988).

2.2. The nature of the parameter

2.2.1. Case assignment and Case assignment to subjects

Sometimes INFL forces raising (depending on the language and, possibly, in a given language, depending on the content of INFL), sometimes it does not. Suppose that in a given construction, INFL forces raising. This means that in the structure (2), movement of $NP^\ast$ to $NP^\ast$ is obligatory. This is reminiscent of the obligatory character of $NP$-movement in passive constructions in English or in raising constructions, suggesting a characterization of this effect in terms of Case theory. Overt (and some covert) NPs need Case. If an NP needs Case, but is not in a Case-marked position, it can acquire Case if it moves to a Case-marked position. Adopting this idea means that when $NP^\ast$ is a Caseless position, an NP in it which needs Case must move. If on the other hand $NP^\ast$ is a Case position, movement is not necessary.

Let us again look at (2):

\[
\begin{array}{c}
\text{IP} \\
\text{NP}^\ast (= [\text{spec, IP}]) \\
\text{I'} \\
\text{I} \\
\text{VP} \\
\text{V}^{\text{max}} \\
\text{NP}^\ast \\
\end{array}
\]

In English, we want to say that if INFL is tensed, $NP^\ast$ is not a Case-marked position, but $NP^\ast$ is. How can we implement this idea? Clearly, $NP^\ast$ receives
Case by virtue of some property of INFL (presumably agreement). So let us say that tensed INFL is a Case assigner and assigns nominative case. Case is usually assumed to be assigned under government. However, if Case is assigned under government, we need to say that I governs NP but not NP*. This is in fact inconsistent with the notion of government that we would like to adopt. There is a good deal of evidence (see Chomsky 1986, Sportiche 1988b, 1990) suggesting that if some X₀ governs YP, it governs the specifier of YP. Since clearly I governs Vₘₐₓ (sisterhood surely entails government), it should, by this definition govern its specifier, namely NP*. Furthermore, consider the case of Irish/Welsh or Arabic. There, we do want to say that NP* receives nominative case from I. Presumably, then, I governs NP*. Under current assumptions about Case assignment, we face a problem: if INFL can assign nominative case to its specifier NP, it should always be able to assign nominative case to NP*. We would therefore expect no language to be like English in requiring raising to NP*.

We adopt the following alternative suggested in Sportiche (1988b). The basic idea is to tie certain kinds of Case assignment (like nominative) with agreement or rather with agreement configurations.

Current theories distinguish between two kinds of Case assignment: structural Case and inherent Case. Structural Case is a configurational property: a tensed I assigns Case to its specifier in English regardless of the semantic or thematic relation of this specifier to the rest of the sentence. Nominative case is typically a structural Case. Inherent Case on the other hand is lexically dependent or thematically dependent. Its assignment depends both on the lexical choice of the Case assigner and on the thematic relation between the Case assigner and the category receiving Case.

There is another difference, however. The structural configuration in which nominative case assignment occurs is different from the configuration in which an object is inherently Case-marked. Nominative case assignment is a relation between a head, namely INFL, and its specifier. Inherent Case assignment is a relation between a head and a complement. This distinction would solve the problem just mentioned: if INFL can Case mark NP*, why can it not Case mark NP* as well? Distinguishing between Case assignment...
to a complement or the specifier of a complement and Case assignment to a specifier would draw the required line.

We propose to implement this idea by distinguishing between Case assignment to an NP under government by a Case assigner and Case assignment under agreement of the NP with a Case assigning head.

Putting all this together, we distinguish between structural Case assignment and inherent Case assignment. Furthermore, we distinguish between Case by agreement and governed Case. Nominative is both structural Case and Case by agreement, while inherent Case is always governed Case. Where does objective Case fit in this picture? Objective Case is a structural Case as shown by the fact that it occurs in Exceptional Case Marking structures or on subjects of small clauses, when it bears no thematic relation with its Case assigner. Is objective Case a governed Case or is it a Case by agreement? We would expect objective Case to behave just like nominative Case. Since INFL can assign Case by agreement or governed Case, depending on the language, we expect the verb to either assign objective Case by agreement or governed Case as well, depending on the particular language. In English objective Case is apparently a governed Case. This is what we will assume here. (See Sportiche 1990 for a discussion of this issue.) We refer the reader to section 2.5.2. for more discussion on languages that assign Case by agreement.

Case assignment by agreement is defined as follows: Let H be a Case assigning head. Then, if it is a Case assigner by agreement, it may assign Case to an NP in its specifier position, as a reflex of the general process of specifier head agreement.

Governed Case is assigned under government where government is provisionally defined in terms of X-command and in terms of barrier in the spirit of Chomsky (1986). The precise definition of barrierhood that we adopt is the one developed in Sportiche (1988b, 1990) and will not be of central concern here. It suffices to say that complement boundaries do not act as barriers:

(11a) Government
     A governs B if A X-commands B and no barrier for B intervenes between A and B.

(11b) X-Command
     A X-commands B if the minimal constituent meeting property X containing A contains B.
How should we define X-command? Look again at the structure in (2). If we take X-command to be max-command in the sense of Aoun and Sportiche (1983), this means that INFL governs its specifier. INFL, then, could in principle assign a governed Case to an NP in its specifier position. In particular, if INFL can assign governed Case, then it should be able to assign it either to the position NP* or to the position NP^\text{\textsuperscript{\textcircled{c}}}.

Is this desirable? The Arabic data discussed earlier bear on this question. In Arabic, the subject can surface either in the postverbal position NP* or in the position NP^\text{\textsuperscript{\textcircled{c}}} and this correlates with the presence of number agreement. In terms of Case, we would say that NP* gets governed Case. In particular, given that there is no agreement of the verb with a postverbal subject, it shows, as expected, that governed Case does not correlate with agreement. If governed Case could be assigned to NP^\text{\textsuperscript{\textcircled{c}}}, we would expect agreement with NP^\text{\textsuperscript{\textcircled{c}}} to be optional. It is not. This suggests that governed Case cannot be assigned to NP^\text{\textsuperscript{\textcircled{c}}} in Arabic; only Case by agreement can.\textsuperscript{15} Consequently, we want to define government in such a way that a head does not govern its specifier. Again, we will adopt Sportiche's (1988b, 1990) proposal according to which the correct notion of X-command is I-command defined as follows:

(12) \textit{I-Command}

A i-commands (immediate command) B if the first constituent (distinct from A) containing A contains B.

A constituent will thus have a chance to be governed by a head only if it is included in a constituent sister to this head. In particular, a head does not govern its specifier.

Which of these two Case assigning options is realized depends on the particular category HP, the lexical content of the head H it contains, and the language L. A priori, we want to minimize possible inter and intra language variations. Given that there is cross-linguistic variation, the strongest position would be one asserting that languages choose once and for all one and/or the other option, regardless of the head and its content. This seems too strong,

\textsuperscript{15} Note that we do not mean that lack of agreement between a head H and an NP getting Case from it is always an indication that governed case rather than Case by agreement is involved. We want to restrict this conclusion to situations in which the head H can show agreement. Therefore, this conclusion would not follow for heads never exhibiting agreement: we take lack of agreement with an agreeing head to be an indication that this head has not assigned Case by agreement. However, we agree with Borer (1986) that the converse is not true. The Kilega facts discussed in section 2.5 show this as well. Presence of agreement does not indicate that Case by agreement has been assigned.
however. Koopman (in prep.) shows that in Dutch, P(repositions) are governed Case assigners, while P(postpositions) are agreement Case assigners. In English, INFL only assigns Case by agreement, while it seems that V only assigns governed Case.

2.2.2. Formulating the parameter

In English or French, the subject cannot surface as NP*. We construe this as meaning that NP* receives no Case. Rather, the subject surfaces in the specifier position of INFL exhibiting agreement with it (in a fairly impoverished way in English). We now construe this as meaning that when INFL is a Case assigner, it is a Case assigner by agreement only.\(^{16}\)

In Arabic, the external argument can surface in either position. Furthermore, only subjects may move to [SPEC, IP] suggesting that movement to NP\(^*\) is A-movement (cf. section 2.5 for discussion). Given the agreement facts, we now analyze this as arising from INFL being able to assign either governed Case or agreement Case.

In Irish, only the order VSO is allowed and the Subject never agrees with the verb or the auxiliary in INFL. The only apparent case of agreement is found with (covert) pronominal subjects but McCloskey and Hale (1984) have argued that these cases are best analysed as involving incorporation of a postverbal pronoun into INFL. We are then led to analyze a Case marking INFL in Irish as being only a governed Case assigner and never an agreement Case assigner.

In Welsh, only the order VSO is allowed, and non-pronominal NPs never agree with the verb or the auxiliary either. Pronominal NPs, however, must fully agree with the verb. Again, we analyze a Case-marking INFL in Welsh as being only a governed Case assigner, never an agreement Case assigner. This will account for the impossibility of non-pronominal NPs raising to NP\(^*\).\(^{17}\)

---

\(^{16}\) Recently, various proposals have suggested that Tense and Agreement should each have their own projections: Pollock (1989). If Agreement is what is responsible for nominative Case assignment the text must be amended accordingly throughout. Given the text, we would have to assume, in agreement with Chomsky and unlike Pollock, that the AGRP projection corresponding to subject agreement must be higher than the projection of Tense, rather than the opposite, so as to force raising to its Case assigning position (specifier of AGR) at the beginning of the clause. Note that this assumption is supported by the respective placement of tense and agreement affixes: it seems that agreement morphology on verbs is external to tense morphology, as expected.

\(^{17}\) More needs to be said about the distribution of pronominals in Welsh, cf. Koopman (in prep.).
If it is a Case assigner, INFL is a structural Case assigner. The Case of INFL (and, in fact, of other categories) varies as follows:

(13i) INFL is specified as a governed Case assigner or not.
(13ii) INFL is specified as an agreement Case assigner or not.

The various possibilities are illustrated in the following table:

<table>
<thead>
<tr>
<th>+ Agr Case</th>
<th>- Agr Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Governed Case</td>
<td>Arabic Finite Clause</td>
</tr>
<tr>
<td></td>
<td>French Finite Clause</td>
</tr>
<tr>
<td></td>
<td>English Finite Clause</td>
</tr>
<tr>
<td></td>
<td>Portuguese Inflected Infinitive</td>
</tr>
</tbody>
</table>

2.2.3. *The case of Welsh*

Consider again a tensed clause. Given the way the parametric variation is formulated, we see that the effect of the parametric variation is not necessarily that in certain languages raising to NP* is obligatory, and in other languages, the subject NP may surface in the position NP*. Rather, the subject NP will have to surface either in the specifier position of the head assigning nominative case or in a position that is governed by the head assigning nominative case, so that governed Case can be assigned. If some intermediate projection intervenes between the Case assigning head and V_{max}, the subject NP will have to raise from NP* to the specifier of this intermediate projection in order to get nominative case. To illustrate this point, consider the underlying structure of the English sentence *John will have visited Paris*, where ASPP is the projection of the aspectual auxiliary *have*:
English requires *John* to raise to NP*. (From now on, NP* will denote the highest specifier position of a clause. NP* will continue to denote the NP position daughter of V\text{max}). Suppose counterfactually that English INFL is a governed Case assigner instead of an agreement Case assigner. Then, raising of *John* would be required to the specifier position of ASPP. This seems to happen in certain languages in which INFL assigns governed Case. We can illustrate this with a real example, from Welsh. As discussed above, non-pronominal subjects do not raise to NP*, since they do not trigger agreement with the verb. Thus, according to our proposal, INFL is a governed Case assigner, not an agreement Case assigner. Let us consider evidence as to the position of the thematic subject at S-structure based on structures like (14), in which INFL is separated from NP* by intervening projections. We will discuss two cases: first, INFL is separated from NP* by aspectuals, and, secondly, INFL is separated from NP* by Negation.

Consider the following example which contains a modal and some periphrastic aspects:

(15) Dylai y plant fod wedi bod yn edrych ar y teledu.

'Should-3S the children be perf be at watch at the television'

In this example, the modal in INFL does not agree with the plural subject which immediately follows it. If we assume that the periphrastic aspects
project to ASPP,\textsuperscript{18} and that the modal is base generated in INFL, then the example in (15) has the following D-structure:

(16) \begin{equation}
\begin{tikzpicture}
  \node (ip) {IP}
  \node (np) [below of=ip] {NP}$^*$
  \node (i) [below of=ip] {I}
  \node (aspp1) [below of=i] {ASPP$_1$}
  \node (asp) [below of=aspp1] {ASP}
  \node (aspp2) [below of=asp] {ASPP$_2$}
  \node (vmax) [below of=aspp2] {$V_{max}$}
  \node (np*) [below of=vmax] {NP*}
  \node (vp) [below of=vmax] {VP}

  \draw[->] (ip) -- (np);
  \draw[->] (ip) -- (i);
  \draw[->] (i) -- (aspp1);
  \draw[->] (aspp1) -- (asp);
  \draw[->] (asp) -- (aspp2);
  \draw[->] (aspp2) -- (vmax);
  \draw[->] (vmax) -- (np*)
  \draw[->] (vmax) -- (vp);

  \path (np*) edge node[sloped, above] {bod wedi} (aspp2);
  \path (vp) edge node[sloped, above] {edrych ar y teledu} (aspp2);

  \path (i) edge node[sloped, below] {bod yn} (asp);
\end{tikzpicture}
\end{equation}

The thematic subject surfaces in a position governed by INFL, preceding all aspects, not in NP$^*$, sister to VP, following all aspects. It must therefore have undergone raising from NP$^*$ via the intermediate [SPEC, ASPP$_2$] into [SPEC, ASPP$_1$] which is governed by INFL. The second type of evidence that shows that the thematic subject undergoes raising to be governed by INFL, can be found in sentences with sentence medial negation:

(17) Agorodd y dynion ddim y drws.

opened-3S the men not the door

'The men didn't open the door.'

\textsuperscript{18} Both the copula and the aspectual markers might actually project to maximal projections; this will not affect the argument here. Crucial for our argument is the assumption that the aspectual categories are raising categories.
Assuming that sentence medial negation is a modifier of negation – it does not block head movement of the main verb – and assuming negation is lower than INFL, but higher than ASP, will yield the following structure for such examples:

\[
(18) \quad \text{IP} \rightarrow \text{NP}^- \rightarrow I \rightarrow \text{NEGP} \rightarrow [\text{spec, NEGP}] \rightarrow \text{NEG'} \rightarrow \text{NEG} \rightarrow V_{\text{max}} \rightarrow \text{NP}^* \rightarrow \text{VP}
\]

The verb has undergone head-to-head movement, and since the subject precedes negation, it must have raised to [SPEC, NEGP] where it can be assigned governed Case by INFL. In sum, then, NP* cannot remain in its underlying position, but must move in order to be governed by INFL, that is, INFL is a governed Case assigner.

2.3. Infinitives and the distribution of PRO

2.3.1. Infinitives

We now briefly examine the properties of subjects in non-finite clauses. Infinitival INFL is not a Case assigner. Since there is no Case available clause internally, no overt subject or covert subject requiring Case can surface there. If no Case is available from outside the non-finite clause, then the non-finite clause can have no overt subject or covert subject requiring Case (wh-trace or pro).

The case of ECM clauses is straightforward.

(19) John believes [NP to \([t_1 \text{ have } [t_2 \text{ left}]]\)]

If NP is overt, it needs Case. It must therefore raise out of \(t_2\) (to \(t_3\)) to a position where it gets Case from believe. In this respect, ECM clauses behave like tensed clauses. If NP in (19) is PRO, there should be no well-formed
output (*John believes to have left). If it has raised to a position governed by believe, it will be in violation of the requirement that PRO be ungoverned. If it has not raised at all, PRO will be governed by have and will therefore be excluded. If it has partially raised to t₁, yielding (20), exclusion is not straightforward:

(20) John believes [NP to [PRO have [t left]]]

Given that infinitival INFL is usually considered not to be a governor and given that a head does not govern its specifier, PRO is ungoverned. The fact that the string of John believes it₂ to have VP is well formed, but not with the reading John believes it₂ to PRO have VP suggests that there is nothing wrong when NP in (20) is an expletive. If the position NP necessarily exists (possibly as a consequence of the Extended Projection Principle), we could invoke expletive replacement: at LF, PRO has to move to NP, a governed position and is therefore excluded.

We will pursue a different suggestion. Specifying infinitival INFL as a non-governor is a stipulation. Why should tensed INFL be a governor and not tenseless INFL? If we assume that tenseless INFL is a governor, then (20) is excluded because PRO is governed. Quite generally, if the subject of an infinitive clause is PRO, it will not be able to occur as NP*.

\[
\begin{array}{c}
(2') \quad \text{IP} \\
\quad \text{NP*} \\
\quad \text{t'} \\
\quad \text{I} \\
\quad \text{to} \\
\quad \text{NP*} \\
\quad \text{VP} \\
\quad \text{leave} \\
\text{PRO}
\end{array}
\]

Given that tenseless INFL is now assumed to be a governor, PRO will be governed. There might be further reasons that support the governor status of tenseless INFL. Consider a raising structure:

(21a) John seems to sleep all day.
(21b) John seems [t to [t sleep all day]]
There will be a trace following the tenseless INFL to in NP* of the embedded clause. If the conjunctive ECP requires that traces be both antecedent-governed and head-governed, NP-traces must be governed by a head. Tenseless INFL will therefore have to count as a governor to avoid an ECP violation.

We will assume now that tenseless INFL is a governor. It is not an agreement category however. Then PRO must raise out of NP* to NP^\*\#19. One of the effects of defining government in terms of I-command, as we did earlier, is that NP^\*\# is no longer governed.

This conclusion generalizes to structures in which one or several intermediate projections intervene between I and V_{max} as in (14) earlier. PRO will always have to raise to the highest specifier of its clause whether this clause is finite or not. If it remains in some intermediate specifier position, it will be governed by the next head up. In particular, in control structures such as John tried to sleep, the only allowable structure will be John tried [PRO to [t sleeper]].

2.3.2. The distribution of PRO

This formulation of government in terms of I-command allows a simple account of the possibility of having PRO as NP^\*\# of tenseless clause despite the governing character of INFL. It shifts the problem to tensed clauses. Given that NP^\*\# is not a governed position, we now expect PRO to be able to appear in the NP^\*\# position of any clause.

As we just saw, this raises no problem in infinitivals. It shifts the problem to tensed clauses, however, since we now expect sentences like PRO is asleep to be grammatical. Following a suggestion of Sportiche (1990), where this is discussed in more detail, we would like to propose that this kind of sentence in English is ruled out in the following way.

Current theories distinguish two silent pronominal NPs: pro and PRO. PRO must be ungoverned while pro must be identified. PRO and pro are distinguished in terms of the features + / - pronominal, + / - anaphoric.

Suppose instead that we distinguish between featured and non-featured silent pronouns. An NP is featured if it is in an agreement relation with a head. Otherwise it is non-featured. Let us now call pro the silent featured NP and PRO the silent non-featured NP. Because it has features, pro will have to be interpreted as an overt pronoun. Because it is featureless, PRO will be able

\footnote{Note that C is never a governor. In Chomsky's (1986) terminology, it does not L-mark its complement IP so that IP is always a barrier to government. This is further discussed in Sportiche (1988b, 1990).}
The position of subjects to be controlled or receive an arbitrary interpretation (i.e. be assigned default features or features under control).

The distribution of pro and PRO is then handled by the following conditions:

\begin{align}
(22a) & \text{pro must be identified} \\
(22b) & \text{PRO must be ungoverned}
\end{align}

In fact, this proposal differs minimally from the standard view. The major difference is that PRO cannot appear in an agreement position whether or not this position is governed. Summarizing, the standard view excludes PRO from NP\(^\ominus\) in tensed clauses because it is governed by tensed INFL, and permits PRO as NP\(^\ominus\) of infinitives because tenseless INFL does not count as a governor. According to our view, NP\(^\ominus\) is never governed from within its clause. PRO is permitted in NP\(^\ominus\) of an infinitive despite the fact that tenseless INFL is a governor. It is excluded from NP\(^\ominus\) of a tensed clause because this is an agreement position. Two consequences follow.

First, in languages in which there is no agreement between NP\(^\ominus\) and tensed INFL, NP\(^\ominus\) should be able to be PRO from the point of view of the theory of government. However, PRO might be excluded for other reasons. Indeed, take a language in which INFL is a governed Case assigner and [SPEC, IP] is an A-position (see the discussion of this in 2.5). Then PRO in [SPEC, IP] would be heading an A-chain with the Case position lower down, which is excluded (cf. Sportiche 1983). In other words, not only do we need a language in which tensed INFL is not in an agreement relation with its SPEC; we also need tensed INFL to not be a governed Case assigner. Otherwise we might end up with an ill-formed chain. Stenson (1989) proposes that the subject of Irish sentences with impersonal inflection actually is PRO. This is possible under our theory, if we assume that impersonal INFL in some sense absorbs the Case feature of INFL. INFL in Irish is not an agreement Case assigner, as discussed earlier. PRO, then, can seek refuge in NP\(^\ominus\). In main clauses, PRO can only be interpreted as arbitrary PRO, since there is no possible controller around.\(^{20}\)

A second consequence of our proposal is that lexical NPs and PRO are not necessarily in complementary distribution. If a certain position is not governed, does not get Case under government and is not an agreement position,

\(^{20}\) In embedded clauses, one would expect this PRO to receive a control reading, contrary to the facts. Stenson (1989) attributes this to the fact that only non-finite complements are c-selected by control verbs.
both lexical NPs and PRO should be allowed. Gerunds in English might illustrate this possibility, as witnessed by the grammaticality of both John's reading this book and of PRO reading this book.

2.4. Properties of NP*

Since [SPEC, IP] is a position to which no theta-role is ever assigned, let us now discuss where the thematic position of the external argument is. We will contrast two proposals: NP* is generated in [SPEC, VP] as sister to V' (as suggested by Kitagawa 1986, Kuroda 1988, Speas 1986, and adopted by Guilfoyle et al. 1990), or it is generated external to VP, as proposed by Koopman and Sportiche (1985, 1988) or Manzini (1983). We will argue that NP* is not in [SPEC, VP], but is external to VP. We will do so by showing that for some languages [SPEC, VP] is a position in which objects occur. If it can be shown that [SPEC, VP] is a position reserved for objects in some languages – the thematic subject must therefore be generated elsewhere – it is reasonable to conclude that it cannot be the position for the external argument in any language.

2.4.1. Three cases of object in spec VP

We will discuss three different cases, Bambara and Dutch, relying on work by Koopman (1987, and in prep.), and French, as analyzed by Sportiche (1990).

Bambara

Bambara is a Mande language with extremely rigid word order. The basic word order in tensed sentences is presented in (23):

(23) (Adv/CP) NP₁ INFL (NP) V (PP) (ADV) CP

NP₁ is the canonical subject position. It must be lexical. Consequently, INFL will be assumed to assign Case to its SPEC.

Direct objects, or more precisely, NPs that depend on the verb for structural accusative Case, occur in an interesting position: they must precede the verb, and only they may do so; all other complements must follow. Moreover, only one NP may precede the verb. The assumption that the verb assigns its theta-role to the right, i.e. the VP is basically head initial (cf.

In embedded clauses, one would expect this PRO to receive a control reading, contrary to the facts. Stenson (1989) attributes this to the fact that only non-finite complements are c-selected by control verbs.
Koopman 1984), yields an account for the position of all non-NP complements. If we assume that verbs in Bambara assign Case in the same way as INFL does, i.e. the verb assigns structural Case to its SPEC, we get an immediate account for the position in which they occur: given the X-bar schema, we would expect [SPEC, VP] to be to the left of V, just as [SPEC, IP] is to the left of I. An NP that needs structural Case moves from its thematic position to [SPEC, VP] because it has to satisfy the Case filter; only one NP may move there, because X-bar theory only makes one SPEC position available. Thus, structural Case assignment of subjects and ‘objects’ is parallel in Bambara: both nominative and accusative are assigned to SPEC positions. In sum, then, [SPEC, VP] is the structural accusative position, the position in which objects occur, and cannot be the position of the underlying subject.

Dutch

We have so far seen that objects in Bambara occur in [SPEC, VP]; it is also a standard assumption that objects in English are assigned governed Case (and occur under V'). Since UG allows for two possible Case-marked positions at S-structure, the question arises for any language where objects are Case-marked, [SPEC, VP] or [NP, V']. Let us now discuss Dutch objects. The situation in Dutch is much less transparent than that in Bambara, for various reasons: first, the Dutch VP is verb final, and thus both [SPEC, VP] and [NP, V'] precede the verb. Second, there is extensive leftward scrambling in Dutch, which further obscures underlying order. And third, objects have a different distribution depending on whether they are pronominal or not, and whether they are specific or not. Pronominals are clitics, and occur on the highest functional projection in IP (Koopman, in prep.). Specific NPs must scramble out of the VP, and in fact must occur in a (A-)position governed by the highest functional category in IP. Thus, neither pronominal objects nor specific objects tell us anything about the situation internal to VP. Non-specific objects, however, must remain rather close to the verb, and in fact must be assumed to occur in VP, since they must pied-pipe under VP preposing:

(24a) [Boekjes lezen] doet hij nooit
books read does he never
‘He never reads books.’

(24b) *Lezen doet hij nooit boekjes
read does he never books
The question thus arises where non-specific objects occur, i.e. where the structural accusative position is. We will now present an argument that the Case position is [SPEC, VP]. We will do so by showing that the object is separated from the verb by all theta-marked elements, including optional arguments like instrumentals, i.e. it occurs exactly in the position where one expects to find [SPEC, VP].

Given the possibility of scrambling, we need a test to determine where the theta-positions in the VP are. Extraction out of PP, i.e. P-stranding provides such a test. P-stranding in Dutch is possible under two conditions (cf. Van Riemsdijk 1978): (i) R-movement to the [SPEC, PP] is possible and, importantly, (ii) the PP occurs in a theta-marked position. In particular, the P of a scrambled PP can never be stranded. A stranded P therefore shows where the theta-position of the PP is.

Let us take an example that contains a verb c-selecting for an NP and PP, as well as an optional argument of the verb, an instrumental PP. Instrumental PPs behave as being theta-marked by the verb, as shown by the possibility of stranding the instrumental P. What D- and S-structure orders would we expect? Assuming that all theta-marked elements occur under V', that direct objects are projected as sister and adjacent to their verbs, and that optional arguments are projected higher than obligatory internal arguments, we would either expect (25a) (if the NP PP forms a small clause as proposed in Kayne 1984), or (25b). In both cases the theta position of the NP follows the instrumental;

(25a) [SPEC[v [PP_instr [ NP PP_loc] V]]]
(25b) [SPEC[v PP_instr PP_loc NP] V]]
(25c) [NP_i [v ... t_i ... V]]

If Case is assigned to the [NP, V'], we would furthermore expect (25a) or (25b) as surface order. If Case is assigned to [SPEC, VP], we would expect the object to precede the instrumental PP.

As mentioned before, we will have to rule out the possibility that the instrumental PP has scrambled to the left of the VP. We therefore have to look at an example where the instrumental P has been stranded:

(26) dit is een ladder waar je (*mee) boekjes mee in de kast kunt zetten.
    this is a ladder where you books with in the library can put
    ‘This is a ladder you can put books in the library with.’
As this example illustrates, the order must be [NP P t PP V], i.e. the non-specific object must precede the stranded P. It thus occurs exactly in the position where we would expect [SPEC, VP] to appear. We will take this as evidence for:

(27) Dutch objects occur in [SPEC, VP] at S-structure.\footnote{We have not really established that objects are theta-marked under V'; it could be that objects are theta-marked in [SPEC, VP]. For arguments against this view, see Koopman (in prep.).}

This is related to (28)

(28) V assigns accusative case to [SPEC, VP].

In sum, then, objects in Dutch are in [SPEC, VP], which cannot be the position of subjects.

**French**

The third case we discuss is French participle agreement. We will adopt Kayne's (1985) central insight, as extensively discussed and modified in Sportiche (1990). The basic point here is that when participles in French agree, they always agree with a direct object, never with a subject. If agreement is a reflex of a spec/head relation (in this case, the V in participial form and the direct object), the [SPEC, VP] position cannot be the position of subjects.

Agreement is illustrated by the following sentences:

(29a) Cette écharpe, Jean l'\_ a offert\_ E t à Pierre.

\textit{this scarf(FEM) John it has offered(FEM) to Pierre}

\textit{‘As for this scarf, John offered it to Pierre.’}

(29b) L'\_ écharpe que tu as offert\_ E t à Pierre.

\textit{the scarf COMP you have offered(FEM) to Pierre}

\textit{‘The scarf that you offered to Pierre.’}

Its most relevant property is that \textit{a participle agrees with a direct object only if the direct object precedes the participle}. Objects in French normally follow the verb. In the two examples in (29) above, the direct object has been preposed by wh-movement or clitic placement and triggered agreement. Why should precedence play any role? Sportiche (1988b, 1990) argues that the following derivation takes place:
In the process of being preposed, the direct object moves through \([\text{SPEC, VP}]\) position. Its trace, now in a spec/head relation with an agreeing head, triggers agreement.

2.4.2. A note on \(\text{AGR}_o\)

Kayne's (1985) analysis of participle agreement differs from that presented above in that he postulates an AGR projection to mediate agreement between the preposed object and the participle. Roughly there is an AGRP projection. The participle and the agreement affix merge and the object determines the shape of the agreement affix by transiting through \([\text{SPEC, AGRP}]\) or by adjoining to AGRP. Similarly, Chomsky (1988) proposes, partially based on the Bambara facts, that objects actually move to the SPEC of a functional projection, \(\text{AGR}_o\), triggering object agreement. According to this view, we would be dealing with a structure like that in (31).

(31)

\[
\begin{array}{c}
\text{AGR}_o \text{P} \\
\text{SPEC} & \text{AGR}_o' \\
\text{AGR}_o & \text{VP}
\end{array}
\]

It might thus be argued that what we have called \([\text{SPEC, VP}]\), is really \([\text{SPEC, AGR}_o \text{P}]\), and the question arises again where the subject is generated.

Note first that object movement is not coextensive with object agreement. Bambara and Dutch objects, we argue, appear in \([\text{SPEC, VP}]\) without triggering agreement. It is unclear what it means for an object to move to \([\text{SPEC, AGRP}]\) without triggering agreement. Why then would there be an agreement projection at all?

Suppose nevertheless that for the French case (and possibly others), we
follow Kayne and Chomsky. There could be two possible structures: (i) NP* could be lower than AGR as in (32a), in [SPEC, VP] or (ii) it could be external to AGR as in (32b):

(32a) [AGR \_VP NP*\_[v, V ..]  
(32b) [NP* ... [AGR \_VP

For (32a), it must be ensured that the object moves to [SPEC, AGR\_P], over the thematic subject, and the subject to [SPEC, AGR\_P] (i.e. [SPEC, IP]). If these movements count as A-movement, we would basically have to assume a theory of NP-movement where an intervening subject does not block NP-movement since the object would move to [SPEC, AGR\_P] over NP*: this is inconsistent with what is known of NP-movement. If these movements count as \^A-movements, it is unclear how to force the required derivation at all.

Even if we assume object movement (of whatever kind) over NP* to be possible, we still must prevent movement of the object to [SPEC, AGR\_] and of the subject to [SPEC, AGR\_P]. Note that linking the position [SPEC, AGR\_P] with accusative Case and [SPEC, AGR\_P] with nominative Case (possibly a desirable move) is not sufficient. Both nominative and accusative Case are structural Cases, blind to thematic properties. How would we prevent a sentence like *John believes Bill to have left* with two subjects to be interpreted with *John* the external argument of the embedded clause having raised to [SPEC, AGR\_P] and *Bill* the external argument of the main clause having moved to [SPEC, AGR\_P]?22

These difficulties argue against (32a) as a possible structure. (32b) will yield the desired derivations: simply assuming movement to be NP-movement, the external argument raises to [SPEC, AGR\_P], and the object to [SPEC, AGR\_P]. Both movements are legitimate cases of NP-movement. This conclusion is consistent with our proposal that NP* is not [SPEC, VP].

Naturally, if there is an AGR\_ projection as in (32b) above, it seems that we must modify the view that NP* is sister to VP for theta-theoretic reasons. Without further discussion here (but see Sportiche 1990) we will suppose that there is no AGR\_ projection at all in languages like Dutch and Bambara. In French, we identify AGR\_ with participial (i.e. adjective like) morphology: AGR\_ = INF\_participial. Since participial morphology (unlike say Tense) does affect the syntactic expression of an external thematic role (e.g. passive

22 Note that we cannot link AGR\_ with external argumenthood, as shown by the case of subjects derived from underlying objects.
The position of subjects

participial morphology), it is consistent for us to assume that NP* is external to INFL_{participial}P.

In order to simplify further discussion, we will ignore this kind of projection in the remainder of this article. We will simply note NP* as external to VP rather than using the more precise 'external to certain morphological projections taking VP as complement'.

2.4.3. Further remarks on NP*

We have established that NP* is external to VP. Exactly in what relationship does it stand with respect to VP?

We would like to continue to hold that the structural relationship between the external argument of a predicate and this predicate is identical across categories. Thus all the following phrases should basically have the same underlying internal structure:

\[
\begin{align*}
(33a) \text{ (consider)} [w \text{ John } [z \text{ very sick}]] \\
(33b) \text{ (saw)} [w \text{ John } [z \text{ quickly leave}]] \\
(33c) \text{ (John will)} [w \text{ NP* } [z \text{ quickly destroy his toys}]] \\
(33d) \text{ (witness)} [w \text{ John's } [z \text{ quick destruction of his toys}]]
\end{align*}
\]

Extrapolating on the adjectival case (33a), it is clear the the constituent Z must be an XP, since it is subject to movement as exemplified by *How sick do you consider John* (this incidentally is a further argument that NP* is external to VP). What then is W?

There are three alternatives:

\[
\begin{align*}
(34) & \quad \text{(i) } W = \text{XP as suggested by Manzini (1983). In this case NP* is not configurationally distinguishable from an adjunct to XP, except for the fact that it gets an external theta role from X. Presumably, it does not qualify as an adjunct.} \\
& \quad \text{(ii) } W = X^{\text{max}} \text{ as suggested in Koopman and Sportiche (1985, 1988). In this case, every X projects to XP and possibly to one further level.} \\
& \quad \text{(iii) } W = \text{XP as suggested by Larson (1988) for VP and adopted and extended to other categories in Sportiche (1990).}
\end{align*}
\]

\[23\text{ Note that in the case of NPs, the parallelism is not with NP small clauses of the type } I \text{ consider this a good picture for the NP this does not and cannot correspond to the external argument of the noun as noted in Campbell (1989). This is shown by the grammaticality of } I \text{ consider this picture John's picture and by the impossibility of } *I \text{ consider the engineer (’s) survey of the valley. Rather, the subject of an NP small clause is an additional argument.}\]
In the last case, the projection rules from the lexicon to syntax are radically altered so that the underlying structure of W in (33c) for example would be:

\[(35)\]

In derived structure, the verb presumably raises to $V_1$. In this structure, NP* is in [SPEC, VP], but not of the minimal VP containing the verb in underlying structure. Deciding between these alternatives is not straightforward. One interesting argument against alternative (ii) due to James Huang is not really conclusive. Because it provides independent support for the ISH, we will briefly present it and discuss it. This argument is based on a difference in behaviour between the W constituent in (33a) and (33c).

An AP small clause as in (33a) cannot be preposed by movement:

\[(36a)\] You consider [John very sick]
\[(36b)\] How sick do you consider John?
\[(36c)\] *[John how sick] do you consider

If it can be shown that the W constituent in (33c) can be preposed by movement, it would suggest that it is not a small clause.

The argument is based on the constrast between wh-movement and VP-preposing with respect to reconstruction illustrated below:

\[(37a)\] Which paintings of each other do the girls say the boys like
\[(37b)\] Listen to each other, the girls say the boys do

In (37a), the antecedent of the reciprocal can either be the main subject or the embedded subject. In other words, the binding theory can be satisfied either by the S-structure or by the reconstructed structure (i.e. as if the preposed phrase was still in its base position). In (37b), only one reading is possible, namely with the reciprocal taking the embedded subject as antecedent. Why is there a contrast? If VP preposing carries NP* along, we can derive this observation. Then the preposed VP is really [NP* listen to each other]. NP*
counting as a subject for the binding theory, the reciprocal can only take it as antecedent explaining the lack of ambiguity of (36b). The subject of an AP small clause cannot be preposed but the subject of a VP must be: the conclusion then is that NP* and VP do not form a small clause in the same way the subject of an AP small clause and the small clause do.

The first thing to notice is that the contrast in (37) and its analysis provides an argument for the ISII. The conclusion that NP* is internal to VP rather than a daughter to V_{max} holds only if the difference can only be accounted for by a difference in constituent structure. However, extending the range of data suggests that this argument is not conclusive. Consider reciprocal binding under wh-movement of AP's:

(38a) John considers [them proud of each other]
(38b) How proud of each other does John consider them
(38c) *They consider [John proud of each other]
(38d) *How proud of each other do they consider John
(38e) *They say I am considered proud of each other
(38f) *How proud of each other do they say I am considered

In order to account for the ungrammaticality of (38d,f), we are led to assume that the AP preposed by wh-movement also contains the subject of the AP small clause. By analogy with the VP case, we are led to the assumption that John, the subject of the AP small clause, has raised out of the small clause (possibly for Case reasons):

(39a) *They consider John, [w ti [proud of each other]]
(39b) *[w ti [How proud of each other]] do they consider John,

This option is discussed in Sportiche (1990). Two consequences would follow. First, it would show that small clauses, that is the constituent W, can be preposed by movement. Second, it undermines the argument presented above against the V_{max} hypothesis. Since the two authors of this article do not agree with each other on the underlying position of NP*, we will not try to argue one way or the other here. All three options of (34) are consistent with our discussions and basic thesis and we will continue using the notation V_{max} as before.

2.5. Properties of NP^ and of movement to NP^*

We now consider the status of the position NP^.
Chomsky (1981) defines an A-position as a position to which a theta-role can be assigned. Given that [SPEC, IP] never receives a theta-role, this definition would characterize it as an Ā-position. However, it is usually considered an A-position. Is it an A-position or an Ā-position?

The distinction between A- and Ā-positions is mostly relevant to movement theory. Movement to an A-position has the properties of NP-movement, movement to an Ā-position of wh movement. Some of the relevant differences are listed below as (40i-vi). Furthermore, the distinction is also relevant to the binding of lexical anaphors as indicated in (40vii):

(40) (i) Movement to an A-position obeys the SSC (cannot skip over a subject), movement to an Ā position does not.
(ii) Movement to an A-position must be from an A-position, movement from an Ā-position does not have to be.
(iii) Movement to an A-position must be from a Caseless position. Movement to an Ā-position can be from a Case position (and must be if it is from an A-position).
(iv) An A-position can be a Case position. An Ā-position cannot be. 24
(v) Movement to an A-position does not license parasitic gaps, movement to an Ā-position does.
(vi) Movement to an A-position does not create Weak Crossover Effects (viz. *Everyone seemed to his father t to be sick). Movement to an Ā-position may.
(vii) A-positions may qualify as binders for lexical anaphors, Ā-positions may not (viz. *These boys, friends of each other like). 25

Since the ISH first appeared, various authors have addressed the question of the status of NP^c. For example, Diesing (1990) argues that NP^c in Yiddish can be either an Ā-position or an A-position. Pesetsky (1990) has argued that NP^c in English can be an Ā-position. Similarly, Guilfoyle et al. (1990) argue that objects can move to NP^c over a subject, which entails that NP^c may be an Ā-position. Koopman and Sportiche (1985, 1988) took the position that NP^c in English and French is always an A-position.

24 There might be exceptional counterexamples to (iii) and (iv), e.g. the French constructions discussed in Kayne (1984: ch. 5).
25 Note that this is much worse than a Weak Crossover Violation and that WCO effects are absent here anyway: *These boys, their friends like.
2.5.1. $\text{NP}^\land$ can be an A-position

In English, French or Arabic (with SVO order), we want to argue that $\text{NP}^\land$ can be an A-position. Let us discuss whether or not it can be an A-position as well. Suppose $\text{NP}^\land$ is an A-position. Then, by (40iv) it cannot be a Case position. This means, contrary to what we have been arguing, that there is a way for $\text{NP}^*$ to get Case in another way than by moving to $\text{NP}^\land$. This is similar to Pesetsky's (1990) position. He argues that $\text{NP}^\land$ in main clauses can be an A-position, but that $\text{NP}^\land$ is an A-position in embedded clauses. According to him, sentence (41a) has the wh-phrase in $\text{NP}^\land$ and the modal in INFL:

(41a) Who will John see
(41b) John will see Bill
(41c) *Bill will John see

He argues that John in (41a) gets Case directly from INFL – what we call governed nominative case – and so does not have to move to $\text{NP}^\land$. (41b) illustrates that $\text{NP}^\land$ does not have to be a wh-phrase. Where does John in (41b) get Case from? If it got governed Case from INFL, this would imply that $\text{NP}^\land$ is an A-position here too, and that movement of the subject to $\text{NP}^\land$ is A-movement. The question then arises what would exclude (41c)? In (41c), the subject has remained in its Case position, and the object has moved to $\text{NP}^\land$. Since this would be an instance of A-movement, the intervening subject is irrelevant. (41b) also shows that $\text{NP}^\land$ (unlike [SPEC, CP]) tolerates non-wh NPs, albeit only subjects.

This situation is in fact reminiscent of the Arabic situation described earlier in section 1.3.2. In Arabic, both orders INFL SOV and S INFL OV are allowed. In the derived VSO order (with V in INFL), there is no number agreement between V and S. In the SVO order (with V in INFL and S in $\text{NP}^\land$), S and V agree in number. Furthermore, nothing other than the subject can move to immediate preverbal position and trigger verbal agreement. If the subject can get Case postverbally, why is movement to preverbal position not A-movement, and why can’t anything other than the subject move to preverbal position?

The ungrammaticality of (41c) (and of parallel Arabic examples) suggests that $\text{NP}^\land$ is an A-position in (41c) and (41b). (41c) would then be excluded as an SSC violation.

Let us suppose for a moment that Pesetsky’s analysis for (41a) is correct.
This would mean that $NP^-$ is an $\tilde{A}$-position in (41a), but an $A$-position in (41b, c). How can we reconcile the two?

We could postulate that matrix INFL in English and INFL in Arabic assigns Case either by agreement or under government. If it assigns Case under government to a following NP, $NP^-$ is an $\tilde{A}$-position. If it assigns Case by agreement to $NP^-$, $NP^-$ is an $A$-position. In (41a), Case has been assigned under government. This is not quite sufficient. In (41c), we need to prevent Case from being assigned to $John$ under government. Otherwise, we face the same problem: $NP^-$ would be an $\tilde{A}$-position and the object could move there. We need an Auxiliary Hypothesis (AH) stipulating that when $NP^-$ is an $\tilde{A}$-position, only wh-phrases can occur there (much like [SPEC, CP]). (41c) would violate either this last property if $NP^-$ is an $\tilde{A}$-position, or the SSC, if $NP^-$ is an $A$-position. Movement to $NP^-$ in (41b) would then have to be interpreted as an instance of NP-movement.

Pesetsky’s main argument is based on the distribution of auxiliary $do$. Unlike, say, the auxiliary $have$, $do$ does not invert in counterfactuals:

(42a) If John had eaten $\rightarrow$ Had John eaten
(42b) If John did eat $\rightarrow$ *Did John eat

Pesetsky suggests that the ungrammaticality of (42b) is due to the unexpected inability of $do$ to raise to C. He is then led to assume that $do$ in who did John see has failed to raise to C, remaining in INFL. This in turn leads to the analysis discussed above for (41a), according to which INFL in main clauses does not raise to C (in fact main clauses are never CPs, but always IPs). This hypothesis does not apply to embedded clauses. If it did, we would expect Subject-Aux Inversion to apply in embedded clauses as well: $NP^-$ would be an $\tilde{A}$-position, the subject would get governed Case from INFL and should therefore be able to appear in post-INFL position, contrary to fact: *I wonder wo will John see.

Pesetsky’s analysis leaves some questions unanswered however. One minor question concerns the status of AH: AH seems to reduplicate a stipulation that has to be made for [SPEC, CP]. A second question concerns the difference between Arabic and English. Arabic shows that assigning governed Case is not a characteristic property of main clause INFL. In Arabic, all

\footnote{Note however that although main verbs in Dutch clearly occur in C, past tensed main verbs (which would correspond to (42)) cannot raise to C in counterfactuals. This suggests a different analysis. It is not the case that $do$ does not occur in C: rather simple past tense cannot substitute for the particular C if.}
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It seems then that we need to stipulate the difference between main clause INFL and embedded clause INFL in English. A third and more serious question concerns agreement. As Arabic shows, the failure of the subject to raise to NP does not correlate with a lack of number agreement on INFL. However, this is not true of English:

(43a) Which children does John like?
(43b) *Which children do John like?

Arabic, or Irish or Welsh show that assignment of (governed) nominative case does not correlate with agreement. How then is the subject verb agreement in (43a) established? The well-supported view that agreement results from a SPEC/head relation is consistent with the standard analysis of (43a). John is in [SPEC, IP] receiving nominative case from it and agreeing with it. INFL moves to C and the wh-phrase is in [SPEC, CP]. In Pesetsky's analysis, there never is a Spec/head relation between INFL and the subject. Summarizing: there is no question English NP can function as an A-position. Whether it can also be an A-position is less clear, and depends on how one accounts for the distribution of do, and the landing site of wh-movement in main clauses.

Both alternatives are compatible with our basic views. We have argued that under each alternative, movement to NP must be NP-movement-like in certain cases, for example when a non wh-phrase moves to NP (as is required by e.g. our analysis of Q-float in section 1.3.3).

We can distinguish two questions. The first question, which we addressed above, asks specifically whether NP is sometimes an A-position in English. The second, more general, question asks what can count as an A-position. Can NP ever be an A-position?

Given the definitions of A and A-positions given in Chomsky (1981), A-positions are NP-positions which are either adjoined positions or [SPEC, CP]. We present in the next section some reasons to believe that this inventory is too restricted and that [SPEC, ASPP] can count as an A-position in Kilega, and as an A-position in English. This conclusion suggests that the set of A-positions is larger than suggested by Chomsky's (1981) definitions, and that certain positions can in principle have either status. This lends further

27 The questions of why the agreement relation is retained despite the movement of INFL to C, and why C (containing INFL) does not agree with its own specifier need to be answered, of course (cf. Sportiche 1990).
plausibility to Pesetsky's proposal for English, Diesing's for Yiddish or Guilfoyle, Hung and Travis's for Malayo-polynesian languages.

2.5.2. $[\text{SPEC, ASPP}]$ as an $\tilde{A}$-position or an $A$-position

Carstens and Kinyalolo's (1989), Kinyalolo's (1991) and Kinyalolo and Carstens's (1988) work on Kilega, a Bantu language spoken in Zaire, provides very strong support for the idea that $[\text{SPEC, ASPP}]$ can be an $\tilde{A}$-position. Here, we will outline the logic of the argument, referring to the original work for details.

Kilega displays a very extensive agreement system. If agreement reflects spec/head relations, it can be used as a very reliable diagnostic of the path taken by moved phrases. Kilega is a head initial language. In main clauses, the verb is basically in second position: in a simple tense, the word order is $XP \ V \ldots$ with $V$ carrying Tense (and other) morphological affixes. Nouns are partitioned into classes. $V$ agrees with $XP$. The agreement affix depends both on the the Class membership of $XP$ and, for Class 1, on the kind of $XP$ (e.g. wh-phrase or not). $XP$ can be the subject, but it can also be an object from the same clause (a possibility dependent on the choice of the verb that we will ignore here), or a wh-phrase either from the same clause or from some embedded clause (we omit tone markings here):\(^{28}\)

\begin{align*}
(44a) & \text{Kasanganjo a-ku-bak-il-a Kabisuba nyumba} \\
& \text{Kasanganjo 1AGR-PROG-build-APPL-FV Kabisuba house} \\
& \text{‘Kasanganjo is building a house for Kabisuba’}
\end{align*}

\begin{align*}
(44b) & \text{biki bi-a-kas-il-e bako bikulu} \\
& \text{8-what 8AGR-A-give-APPL-FV 2-that 2-woman} \\
& \text{mwami mu-mwilo} \\
& \text{1-chief 18-3-village} \\
& \text{‘What did those women give the chief in the village?’}
\end{align*}

If $XP$ is not the subject as in (44b), the subject immediately follows the verbal complex thereby preceding all other dependents of the verb as well as adjuncts.

A similar pattern occurs in complex tenses in which a string of verbal elements is found (much like a string of English aspectual auxiliaries). In this case, we find the order $XP \ V_1 \ V_2 \ldots$ with all the verbs in the sequence but the main verb agreeing with $XP$.

\(^{28}\) nAGR is agreement with class n; PROG is the progressive affix; APPL is the applicative suffix; PERF is the perfective affix; ASP is an aspectual verb; fv is the ‘final’ vowel.
As Kinyalolo (1991) and Carstens and Kinyalolo (1989) show, the sequence of verbs is a sequence INFL V V V ..., with INFL carrying the tense morpheme, the last verb being the main verb, and all the intermediate verbs being aspectual auxiliaries projecting to ASPP:
In particular, they very convincingly show that no clausal boundary (CP) intervenes between I and ASPP or between the two ASPP.

Note incidentally that the distribution of the subject in (45c) provides one further argument for the ISH since we find the order XP INFL ASP ASP VSO ... The argument is similar to that based on the Celtic languages in section 1.3.1. The argument here is in fact stronger since there is no possibility, as in the Celtic case, of arguing that the initial V is actually in C. Even if it is in Kilega, the other verbs are not. Note also a further difference with the Welsh: the subject actually seems to occur in NP*, not in a position governed by the highest INFL.

The crucial example is (45c). It shows that a wh-phrase coming from an embedded clause triggers agreement on all the aspectual verbs of the main clause. In order to escape its own clause, this wh-phrase must transit through some intermediate A-position, namely the embedded [SPEC, CP]. This is what allows wh-movement out of C-headed clauses and prevents NP-movement out of C-headed clauses. In order to trigger agreement on the intermediate aspectual verb ASP*, the wh-phrase must transit through [SPEC, ASPP*]. Consequently, this position cannot be an A-position. Otherwise, we would have a case of improper movement. Of course, the validity of this argument rests on the assumption that agreement on ASP* cannot be triggered in any other way, and in particular, that it cannot be triggered by the adjunction of the wh-phrase to ASPP*. Participle agreement in French shows that agreement cannot be triggered by adjunction, as Sportiche (1990) shows. As mentioned above in section 2.4, participles can agree with objects preposed under wh-movement:

(47a) L'écharpe que tu as offertE t
    The scarf(fem) that you have given(fem) t
    'The scarf that you have given.'

(47b) L'écharpe que tu as dit (*E) que tu as offertE
    The scarf(fem) that have said that you have given(fem) t
    'The scarf that you said you gave.'

(47c) La femme que tu as ditE t belle
    The woman(fem) that you have said(fem) pretty
    'The woman that you said was pretty.'

(47b,c) shows that agreement is not possible if the object triggering agreement comes from an embedded tensed clause but is possible with the subject of an embedded small clause. If agreement could be triggered by adjunction, we would expect adjunction of the moved object in (47b) to the phrasal
projection of the participle (which we take to be [SPEC, VP], or of the associated AGRP) to licitly trigger agreement. Sportiche (1990) shows that the pattern in (47) follows from the fact that the position triggering participle agreement is an A-position.

The same kind of questions arise in Kilega as in English. Is the clause initial constituent XP in [SPEC, CP] or is it in [SPEC, IP] with possibly no CP at all? Because of this problem, agreement of the first verb with a wh-phrase does not straightforwardly lead to a similar conclusion concerning NP*. This issue is discussed in Carstens and Kinyalolo (1989) and Kinyalolo (1991).

[SPEC, ASPP] can also be an A-position. This is the case in English (or French). Consider the structure of the English sentence They will have visited Paris, where ASPP is the projection of the aspectual auxiliary have:

(48)

Suppose the derivation is as indicated, with a trace in [SPEC, ASPP]. Then, [SPEC, ASPP] must be an A-position, since movement to NP* of they must count as A-movement, as discussed above. There are two reasons to support the existence of the intermediate trace. The first one is based on Sportiche's (1988b, 1990) theory of NP-movement which explains all the constraints on NP-movement by requiring that it be SPEC to SPEC movement with no possibility of skipping any intermediate specifier position. The second is based on the possibility of having floated Q's between will and have as in They will all have visited Paris. This possibility follows from the possibility of moving stepwise to NP*.
2.5.3. *A*-positions and $\overline{A}$-bar positions

The above discussion leads to the following conclusions concerning the way in which NP's in SPEC distribute as $A$ and $\overline{A}$-positions:

Adjoined positions and [SPEC, CP] are $\overline{A}$-positions.

[SPEC, VP] and/or [SPEC, $V^{\text{max}}$] are A-positions.

[SPEC, IP] can be an A-position (English, French, Arabic) and, possibly an $\overline{A}$-position (English, Yiddish, Malay-polyneisan).

[SPEC, ASPP] can be an A-position (English, French) or an $\overline{A}$-position (Kilega).

From this, we can conclude that Chomsky’s (1981) definitions need to be revised. How to do this is unclear at this moment.

References