

THE NOMINATIVE + INFINITIVE CONSTRUCTION AND THE ACCUSATIVE + INFINITIVE CONSTRUCTION

This chapter is devoted to the analysis of the Nom(inative) + Inf(itive) and Acc(usative) + Inf(itive) constructions, from a GB, as well as from a minimalist perspective.

1. Preliminaries

The traditionally called Nom + Inf construction is illustrated in examples of type (1a, b, c):

- (1) a. Melvin seems to speak Japanese fluently.
a' It seems that Melvin speaks Japanese fluently.
b. Nobody turns out to have experienced that dilemma.
b'. It turns out that nobody has experienced that dilemma.
c. The Prime Minister happened to be in Greece at the time.
c'. It happened that the Prime Minister was in Greece at the time.

The Nom + Inf is a *lexically governed* construction, i.e., its possibility depends not only on a certain syntactic configuration, but also on the presence of certain lexical items, called *triggers* of the construction. The most characteristic triggers of the Nom + Inf construction are the so-called *A(appear)* verbs: *appear, seem, happen, turn out, prove*, as well as the adjectives, *likely, unlikely, sure, certain*. These are propositional epistemic predicates, weak intensional operators whose complement proposition is evaluated in weakly realistic settings. The semantic type of the complement clause is, without doubt, that of *proposition*. The temporal interpretation of the complement observes the general principles of subordinate clause interpretation: the RT of the complement is established by the main clause and is identical with the Ass-T/Ev-T of the main clause. As shown by the possibility of anchoring time phrases, the infinitive complement may establish a time different from the main clause.

- (2) a. He *now* seems to be leaving *tomorrow*, instead of the day after tomorrow.
b. He *now* appears to have arrived *last night*, not the night before.

1.1 There is a well-known synonymy (illustrated in (1)) between the Nom + Inf and the *that*-complement constructions of the same verb. The subject of the *that* complement shows up as main clause subject. Therefore, it has always appeared plausible to assume that the two structures differ in that, in the infinitive construction, the subject of the infinitive moves, becoming the subject of the main clause. The Nom + Inf construction is derived by Subject to Subject Raising (SSR), a typical A-Movement rule. Thus, all generative analyses proposed so far have somehow related the subject of the infinitive clause with that of the main clause.

In fact, identity of the subjects is not enough for SSR. In subject control constructions too, the main clause subject is identical with the embedded clause subject.

- (3) He started to [PRO to visit her more and more often now].
He appeared [t to be more and more interested in her now].

It is essential to grasp the intuitive difference between raising verbs and subject control verbs. Namely, for raising verbs there is no s-selection between the main verb and its (derived) subject; with the Nom + Inf, the surface main clause subject is s-selected only by the downstairs infinitive. It is the infinitive verb, not the main verb, which θ -marks the main clause subject. This indicates that the main clause subject is originally projected as the subject of the infinitive.

Several types of empirical data prove this point.

a) There are subjects which are s-selected or even l-selected by particular verbs. All these may appear, not only with the respective verbs, but also across the verbs *seem*, *appear*, etc. Such is the case of *it*, *there*, of idiomatic subjects, listed in the lexicon only as parts of the respective idioms. Here are examples of this type.

Weather *it* is selected by verbs like *rain*, *drizzle*, *hail*, *sleet*, *snow*, and a few more. It can also figure in Nom + Inf constructions, suggesting that it has raised from the infinitive clause:

- (4) a. It rained / drizzled / snowed for a long time.
- b. It seemed to have been raining / drizzling / snowing for a long time.

The expletive *there*, which appears with ergative verbs (*be*, *go*, *come*, etc.) may also figure as subject of a Nom + Inf construction. Observe that control verbs (cf. (5c)) do not allow *there* subjects, as expected:

- (5) a. There is / *groans a man in your bed.
- b. There seems to be / *to be groaning a man in your bed.
- c. *There tried to be a man in your bed.

c. Idiomatic subjects (examples (6)), which are l-selected if the idiomatic reading is not to be destroyed, are also possible as subjects in the Nom + Inf construction (7a, b, c), (7b)), again suggesting a movement analysis. Predictably, idiom chunks do not appear across control verbs (7a', c'))

- (6) a. The jig is up.
- b. All hell is likely to break out.
- c. The shoe is on the other foot.
- (7) a. The jig seemed [t to be up.]
- a' *The jig tried to be up.
- b. All hell is certain [t to break out.]
- c. The shoe is likely [t to be on the other foot.]
- c' *The shoe is trying to be on the other foot.

In other cases the surface subject is a subcategorised idiomatic direct object of the infinitive in phrases like, *keep tabs on*, *pay heed to*, *make headway*. The representations assigned to such examples in (8b, d) are plausible in as much as they express the basic function of the idiomatic noun, that of being an l-selected object of the infinitive verb. As the traces in the chain show, the object is first passivized and then raised.

- (8) a. They kept tabs on all of them.
- b. Tabs appear [t_{tabs} to have been kept t_{tabs} on all of them].
- c. They have paid little heed to my suggestions
- d. Little heed seems [t to have been paid t to my suggestions.]

Remark. Apparently the list of Raisers should also include *look* (= 'seem') in examples like the following from the Survey of English corpus (cf. Mair (1992))

- (i) and England very far from forcing their way towards winning # as their supporters had hoped # *look to be having the worst of the game at the moment.*
- (ii) their performance this year is no more flash in the pan # *they look to be a very good side.*

It is this intuitive difference between the subjects of control verbs and that of raising verbs that sets aside the Nom + Inf from the superficially similar structures involving subject control.

1.2. The movement analysis is not only empirically supported, but also theoretically feasible. An important constraint on movement bans movement into a θ -marked position.

However, as already discussed for *that* clauses, there is clear evidence that *appear*-verbs are ergative. The unique clausal argument, whether it is a *that* complement or an infinitive complement, merges as an *internal* argument. A- verbs, and other Nom + Inf triggers are propositional ergative (unaccusative) verbs. They have a non-thematic subject position, a position that can be moved into. The following data go to prove this points:

- (9) a. It seems that he is an honest man.
- b. It seems so.
- c. *It seems this.

Example (9a) shows that the Nom position of these verbs can be occupied by an expletive, the introductory-anticipatory *it*, which is not assigned a θ -role, by definition. This confirms that the subject position is a non- θ position, open to movement. Since the verb is unaccusative, the immediately post-verbal position can be occupied by the adverbial clausal substitute *so* or by a CP i.e., by categories that lacks case, but not by a pronoun, as seen in examples (9b, c).

It is a fact of English (though not of other languages) that raising verbs do not take control complements. In the infinitive examples in (10), *it* can be interpreted neither as a referential pronoun, nor as an expletive. Thus in examples like (10a) and (10b), PRO ought to be given an arbitrary reading, as suggested by paraphrases (10a') and (10b'), but this is not possible. On the other hand, the contrast between (10c) and (10d) shows that with *appear* verbs, PRO cannot be licensed even in the presence of a pronominal antecedent, like *him*, either.

- (10) a. *It happens [PRO to have read those novels over the past few years].
- a' It happens that people have read those novels over the past few years].
- b. *It happens [PRO to walk daily along these lanes].
- b'. It happens that people walk daily along these lanes.
- c. *It appeared to him [PRO to have read the book].
- c'. It appeared to him that [he had read the book].
- d. It mattered to him [PRO to have read the book]
- d'. It mattered to him that he had read the book.

English thus shows a complementarity between trace and PRO, in pairs like the following:

- (11) a. He seems [t speak fluent Japanese].
- b. He tried [PRO to speak Japanese].

In the present analysis, this complementarity between trace and PRO is the effect of the different properties of the infinitive inflection. In control complements, the infinitive inflection has anaphoric agreement features, essential in the analysis of control. It is likely that, with the complements of raising triggers, the infinitive inflection lacks anaphoric agreement features, so that PRO cannot be licensed. (cf. also Boskovič (1997), Landau (1999)). This hypothesis is confirmed by the different ellipsis properties of raising and control complements. As mentioned above, Lobeck (1990) notes that functional heads license ellipsis of their complements only when they undergo Spec-Head agreement, as a result of having agreement features. For examples, tensed Inflection, the Genitive 's, may license ellipsis, whereas the non-agreeing functional categories D^0 *the*, and C^0 *that* do not:

- (12) a. John liked Mary and Peter [_T did e] too.
 b. John's talk about the economy was interesting but Bill [_Ds e] was boring.
 d. *John thinks that Peter met someone but I don't believe [_C that e].
 e. *A single student came to the class because [_D the e] thought that it was important.

Note now the contrasting behaviour of raising and control infinitives with respect to ellipsis: Control complements do not block ellipsis, raising complements do.

- (13) a. John was not sure he could leave, but he tried PRO [_T to e]
 b. *John seemed to Mary to know French, and Peter seemed to Jane [_T to e]

This difference is expected if control infinitives have Agr features while raising complements lack them. That there is agreement in Control constructions, but not in raising ones (i.e. Acc + Inf and Nom + Inf) is shown by the fact that only the former license VP ellipsis.

1.4. *The categorial status of the infinitive.* While there are empirical and theory-internal reasons to treat (most) control constructions as CPs, such is not the case for raising complements.

In the GB literature, there is some tension between the desire to give a uniform representation to all infinitives (the Uniformity of Selection Hypothesis) and the fact that there is no empirical evidence that there is any CP projection in raising constructions. Thus analysts like Pesetsky (1992), Lighfoot (1991), Rooryck (1995) go for the Uniformity of Selection hypothesis, arguing from language acquisition, that the learner is never presented with sufficient *positive* evidence enabling him to distinguish between pairs like (14), so that both should be treated identically, as CPs.

- (14) a. He seemed to be polite.
 b. He tried to be polite.

It is claimed that since some infinitives, for instance *for-to* and control infinitives are CPs, all infinitives should be CPs. Of course the argument could go the other way round. If it were possible to claim that control PRO-TO structures are IPs, not CPs, then it would be feasible to claim that both raising and PRO-TO complements are IPs. Boskovič (1997) actually claims that PRO-TO complements may be analysed as IPs in the minimalist framework, and we have found that in exhaustive control situations the tenseless PRO-TO complement is indeed best viewed as an IP.

A second, equally plausible position is to espouse some version of the principle of Minimal Structure, in line with the principle of Economy of Representation, which actually derives from the principle of Full Interpretation (legibility at interface).

Every element in a representation should be interpretable and licensed by some module of the grammar. Principles of economy requiring the absence of uninterpretable, i.e., contentless items, have been proposed by a majority of the linguists working in the GB/ Minimalist paradigm. Here are some of the more perspicuous proposed formulations:

- (15) a. **Principle of economy of representation:** (Boskovič, 1997)
 Project XP only if XP has content. A node X had content iff X dominates a distinct phonological matrix or a distinct semantic matrix.
 b. **Structural economy principle** (Safir, 1993: 63)
 At any point in a derivation, a structural description for a natural language string employs as few nodes as grammatical principles and lexical selection require.
 c. **Chomsky** (1995)
 α enters the numeration only if it has an effect on the output.

In that case a null complementizer projection, whose head and specifier remains unfilled is undesirable, so there is little justification for projecting it. Moreover, all analyses of the construction stress that movement into the main clause, or even case-marking across the subordinate clause boundary (for the Acc + Inf construction) is possible precisely because the infinitive clause does not have a CP, but an IP boundary (see Chomsky ((1981) (1986))). We will assume that raising structure are IPs/TPs, rather than CPs, and that this weaker type of boundary explains the partial osmosis between the main clause and the subordinate clause.

Beyond these theory-internal considerations, there are also facts which seem to indicate a difference of categorial status between raising TP and CP complements.

For instance, raising infinitive complements cannot be interrogative, for lack of a SpecC position, in all likelihood, contrasting with control complements in this respect:

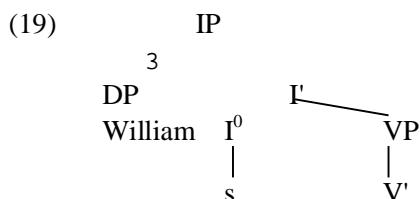
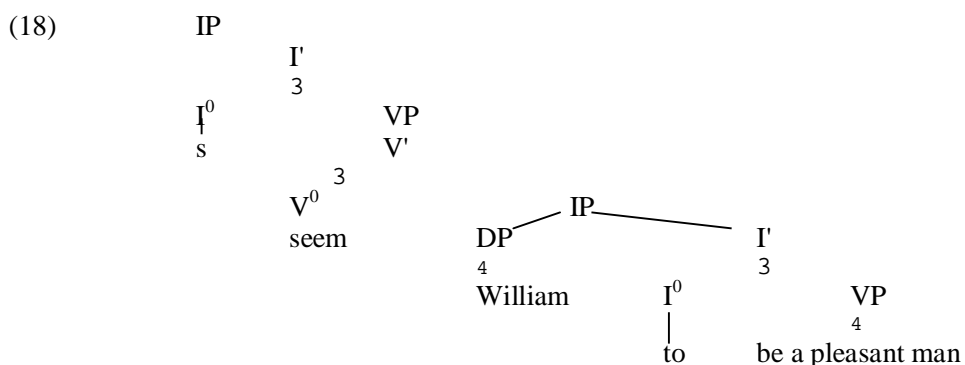
- (16) a. I don't know [whom [PRO to send t]].
 b. I know him to have been sent to London.
 c. *I don't know whom to have been sent to London.

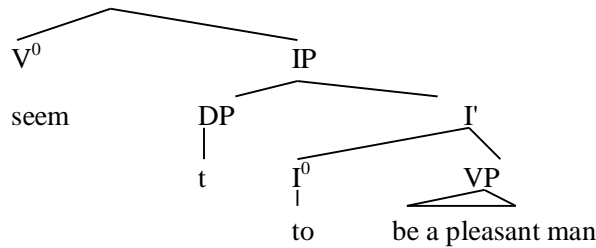
2. A classical GB account

Chomsky (1986a) offers a standard analysis of the SSR construction.

- (17) a. William seems [t to be a pleasant fellow].
 b. Who seems [t to be a pleasant fellow]?

Sentence (17a) above would have the following (D/S structure representations):





The infinitive subject needs case. There is no IP internal case-assigner. This forces the infinitive subject to raise into the main clause, in the position SpecI/SpecT [+Agr], where it is assigned Nom. Subject to Subject Raising is a typical instance of case-driven A-movement. The trace and the raised subject make up an A-chain. The trace should be properly governed, i.e., it should satisfy the Empty Category Principle (ECP). In the Barriers version, the ECP requires the following:

- a. the trace should be head governed (governed in the first projection of the head) and
- b. the trace should be antecedent governed.

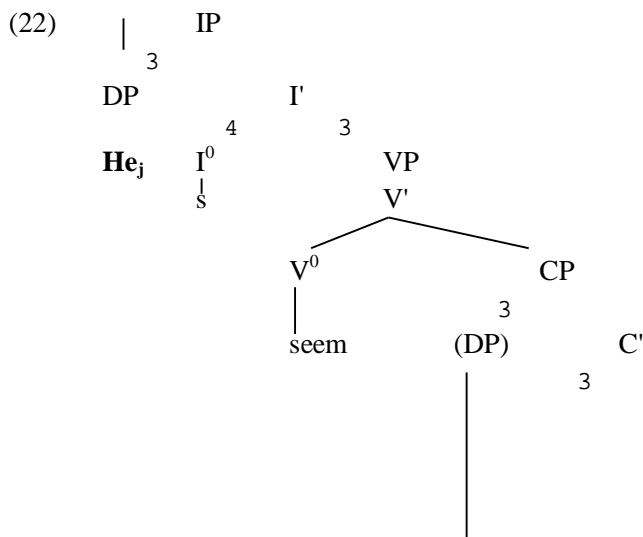
Both requirements are satisfied in representation (19) above. Consider head government first. Since it governs its IP complement, the main verb governs both the head of the IP, which is *to* and its Spec position, which is precisely that occupied by the trace. So the trace satisfies head government.

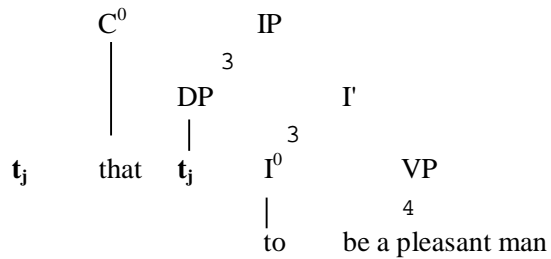
Consider antecedent government now. According to Rizzi (1990)'s relativized minimality, β is a typical potential antecedent governor for γ in an A-chain, if and only if,

- (i) β is an A - specifier (= subject) c-commanding γ and,
- (ii) there is no closer potential antecedent (minimality is observed).

The raised subject qualifies as the antecedent governor of the trace since it is a c-commanding A-specifier (= subject) and there is no closer A-specifier. The trace t_i is thus both head-governed and antecedent-governed. The A-chain is correctly formed, both positions are A positions. The foot is in a θ -position, the head is in a case position. Notice also that the raised subject can be questioned, as illustrated in sentence (17b). This also goes to show that the trace is properly governed. This analysis correctly excludes sentences (20) and (21), represented in (22), (23).

- (20) *He seems (that) t_i is honest.
- (21) *John seems (that) it is likely [t to win]. (Super-raising)

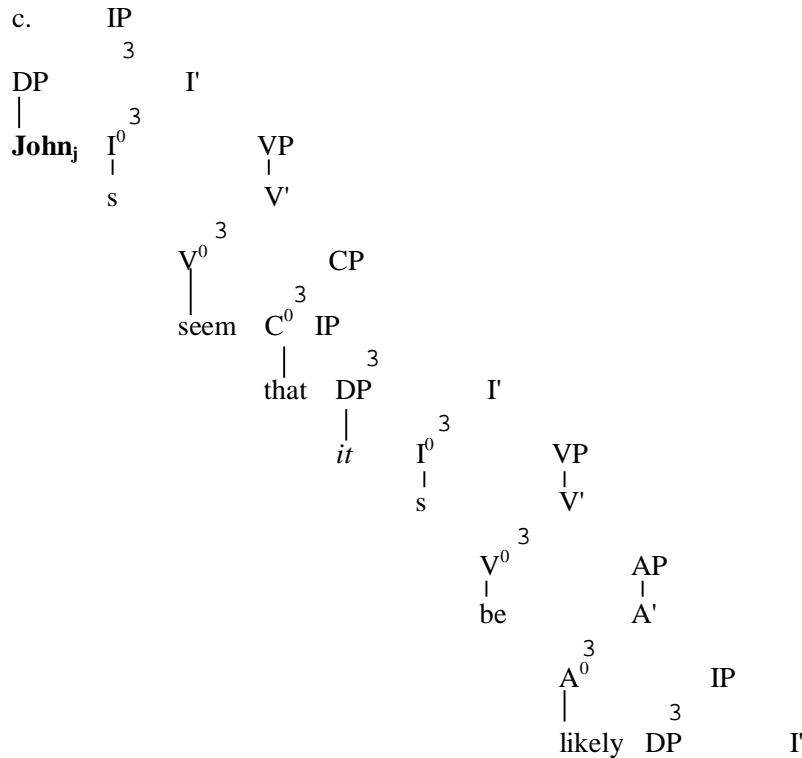


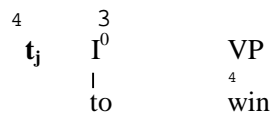


Consider sentence (20) represented in (22). The verb *seem* fails to govern the subject position, because of the intervening CP projection. Suppose the DP moved through SpecCP to the matrix subject position. This derivation would fail for several reasons. A-derivation involving the chain $\{he_j, t'_j, t_j\}$ is excluded since it would involve improper movement, from an A'-position (SpecCP) to an A-position (SpecI, in the main clause). Moreover, the initial trace would not be head-governed, since C^0 *that* is known to be inert for government. The only correctly formed chain is $\{he_i, t_i\}$ but, as shown, t_i is not head governed). Sentence (20) is thus excluded.

Consider (23), which is a representation of (21). Sentence (21) is an instance of Super-raising. Instead of moving to the first non-thematic subject position, the subject has raised to a higher position. The intermediate subject position is filled by an expletive *it*. In (23), the antecedent government requirement fails to be met. Under Relativized Minimality, the intervening A-specifier *it* blocks the antecedent-government relation between *John_i* and its trace t_i , in violation of the ECP. The sentence is ruled out as ungrammatical.

- (23) a. *John seems that it is likely t to win.
 b. It seems that John is likely [t to win]





3. A minimalist account

The GB account relies on the licensing of traces by the ECP, therefore there is crucial resort to the concept of government.

The minimalist account is only slightly different, still involving A-movement of the infinitive subject into the subject position of the main clause. The motivation for movement is different. It is assumed that DPs are specified for Case when they enter the derivation, and must simply check their case feature during the derivation. This means that the DP must reach a position where its case is checked, whether by Move or Agree.

The infinitive subject Merges in SpecVP where it is θ -marked, then moves to Spec *to*. Being in the highest position of the subordinate clause, the DP could, in principle, check its case by Agree and remain in Spec *to*. However, this is not possible first because the main verb *seem* is unaccusative and cannot check any case feature. Secondly, the finite Tense of the main clause must check its strong EPP feature. This may be viewed as a strong [+D] feature of T⁰, or more generally as a strong D⁰/C⁰ feature, requiring either a DP or a CP to occupy the position SpecT. Remember also Pesetsky's suggestions that Nom may be viewed as a nominal uninterpretable counterpart of Tense, ι T on a DP, so the T⁰ head of the main clause attracts the infinitive subject. Movement of the infinitive subject to the position SpecT of the main clause is driven by the strong EPP and Nom features of the main clause. The raised subject moves primarily to satisfy the strong features of finite Tense (Enlightened Self-Interest), thus also satisfying its own need, that of being case-checked.

The ungrammatical examples in (23) are ruled out, just as easily. Consider the representation in (22). It is ruled out straightforwardly. The DP is originally in a finite clause and has reached the position of the trace, the position Spec T⁰/I⁰. But this is a case-checking position. The DP has checked its case and has no reason for further movement. Movement of a DP that has checked its case is not necessary and therefore it is forbidden by Greed. The derivation crashes.

Consider now representation (23). In minimalist terms (23) violates the Minimal Link Condition (shortest move), the most important locality condition on movement. This essential constraint can be interpreted as requiring that at a given stage of a derivation, a longer link from α to K cannot be formed if there is a shorter legitimate link from β to K.

- (24) *The Minimal Link Condition* (Chomsky, 1995: 297)
 α can raise to target K only if there is no legitimate operation Move β targeting K, where β is closer than α to K.

It is easy to notice that, the MLC represents the Minimalist equivalent of Rizzi's relativized minimality. The link from the trace to *John* in (23) is thus illegitimate, as long as there is a shorter link connecting the trace with *it*. The Minimal Link Condition, a condition on Move and Form Chain, can easily deal with the data previously falling under strict cyclicity and relativized minimality.

3.1. **Preverbs in raising constructions.** Further evidence for movement is offered by the distribution of floating quantifiers. Subjects of raising structure also license preverbs.

- (25) a. They seem all to be friendly to us.
 b. Did he seem ever to want to talk about it?
 c. They were likely all to leave at once.
 d. They were certain all to leave at once.

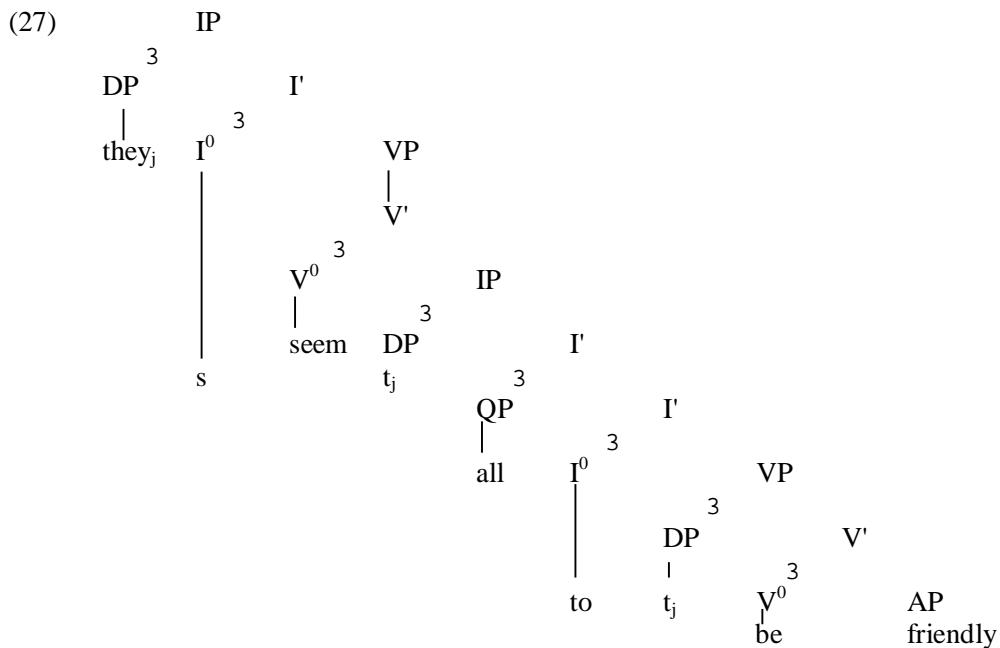
This distribution contrasts with that of subject control verbs, which do not license preverbs in the position before *to*:

- (26) ?*They tried *all* to be friendly to us.
 ?*Did he try *ever* to confide in people?
 *They were eager *all* to leave at once.

Floating quantifiers like *all*, adverbs like *ever* are included in a class of preverbs, a class of constituents which must be adjoined to syntactic predicates. Baltin (1995) formulates the following generalization:

- (26) A predicate specifier, or preverb, can occur in the X' projection of *to*, if the subject of the infinitive has undergone DP-movement out of the infinitive VP.

Although the subject is generated in Spec VP, it must raise to Spec *to*, prior to raising to the main clause SpecI' just because, if it didn't, a minimality violation would be induced, namely it would skip the closest subject position. Therefore, the raising subject must go through Spec *to*, even if we did not assume that non-finite Tense (= *to*) had a strong EPP. Below we indicate the position of the preverbal *all* in the SSR sentence:



In the next section we examine a related infinitive constructions the Accusative + Infinitive.

THE ACCUSATIVE + INFINITIVE CONSTRUCTION

1. The empirical problem. The intuition

A classical English grammar problem is the distinction between pairs of the type below, where each sentence overtly shows an Acc DP followed by an Inf VP. Despite the surface identity, sentences **a)** exhibit markedly different properties from sentences **b)** in each pair. Sentences **a)** represent Acc + Inf constructions, and they were felt to be different from the other sequences of Acc DPs followed by infinitive VPs. Historically too, the *force/persuade* type of structure has always been widespread, while the Acc + Inf construction has gained ground only since the Modern English period (cf. Fischer (1998)):

- (1) a. We expected *the prisoner to be examined by the doctor*.
b. We persuaded the prisoner to be examined by the doctor.
- (2) a. We believed *him to be willing to help*.
b. We asked him to be willing to help.
- (3) a. They considered *the prisoner to be a traitor*
b. They forced the prisoner to become a traitor.

The most typical group of Acc + Inf triggers are some verbs of propositional attitude, like *believe, expect, consider, find, prove, judge, etc.*

Before presenting the complexity of this construction, mostly deriving from the lexical properties of the verbs that allow it, one should grasp the intuition that prompted English grammarians to separate an Acc + Inf construction from superficially similar cases of complex transitive predications where an Acc/Dat object is followed by an Infinitive. In each pair above, the second sentence contains a *control verb*; the first contains what we will from now on call a *raising verb*.

In all of the examples above the Acc DP is interpreted as the subject of the Inf VP, so a description of the Acc + Inf construction simply as one where the Acc functions as the subject of the infinitive cannot distinguish between raising and control verbs. For examples in both (1a) and (1b), we understand that the one who will be examined by *the doctor* is *the prisoner*.

Intuitively, the main difference is that, with control verbs, the Acc is semantically related to the main verb whose argument it is, while with raising verbs the Acc is unrelated to the main verb. In other words, the main verb s-selects and θ -marks the infinitive clause, not the Acc DP. With raising verbs the Acc is s-selected ONLY by the infinitive, and in no way depends on the matrix verb for its interpretation. Indeed, the Acc constituent need not be in the selectional range of the main verb:

- (4) a. I consider the man to be crazy.
b. *I consider the man.
c. I assumed him to have left.
d. *I assumed him.

In contrast, the main verb does s-select the DO with control verbs; the object DP must be in the selectional range of the verb:

- (5) a. I couldn't persuade him to go.
b. I couldn't persuade him.

Rephrasing this contrast in more technical terms, it follows that control verbs θ -mark the Acc DP, while raising verbs do not do so.

An empirical consequence of this selectional difference is that raising verbs accept as DOs any DP which may function as subject of the infinitive. Thus, formal subjects, like “weather” *it* in (6)

or the expletive *it* of extraposition in (7) surface as DOs in the Acc + Inf, but not in object control constructions. The occurrence of *there* in DO position in (8) also provides striking evidence that the Acc DP is justifiable and interpretable only in relation to the infinitive verb. *There* DPs do not appear in control constructions.

- (6) a. I didn't expect it to rain so hard in April.
b. *They forced it to rain in March.
- (7) a. I expect it to be possible for him to obtain the promotion.
b. I forced it to be possible for him to obtain the promotion.
- (8) a. I expected / believed *there* to be a man behind the counter.
b. *I forced /ordered / promised / vowed *there* to be a man behind the counter.

In the same way, idiom chunks freely occur as main clause objects in the Acc + Inf, but not in control constructions, even if they are undoubtedly s- selected or even l-selected by the lower verb, with which they are listed in the lexicon (e.g., *keep tabs on*, *pay heed to*, *make headway*, etc.):

- (9) a. I expected heed to be paid to that proposal by all of the legislators.
b. *I found / ordered / promised heed to be paid to that proposal by all of the legislators.

In addition to s-selection and θ -marking, transitive control verbs differ from raising verbs regarding their θ - structure. Control verbs are three-place predicates, raising verbs are binary predicates. This contrast is immediately apparent when infinitive constructions are paraphrased by finite complements:

- (10) force [Agent, Patient [Affected Agent] Proposition].
believe [Experiencer, Proposition].
- (11) a. They persuaded Mary to help William.
b. They persuaded Mary that she should help William
c. They expected Mary to help William
d. They expected that Mary would help William

Summing up, there are clear semantic intuitions that differentiate the Acc followed by an Inf structure of control verbs, where the Acc is s-selected and θ -marked by the control verb, in addition to being (coreferential with) the subject of the infinitive, and the Acc + Infinitive of raising verbs, where the Acc is merely the subject of the infinitive, from which it acquires its θ -role, and entertains no semantic relation with the raising verb.

1.1 On the source of the Accusative. In the Acc + Inf construction, the main verb plays a formal part, providing case for the infinitive subject. Several facts support this view. First, the construction is possible only with transitive verbs, since only (active) transitive verbs are Acc assigners.

When the main verb is passivized, the Acc is no longer possible. The only case available in the main clause for the infinitive subject is the Nom, checked by the main clause Inflection. Thus passive-raising verbs must appear in the Nom + Inf construction.

If the Acc had been assigned in the downstairs clause, as is the case in the *for-to* construction, passivization of the main verb would not have affected the Acc in the embedded clause. Compare:

- (12) a. We never expected them to return soon.
 b. They were never expected [t to return so soon].
- (13) a. We never expected for them to return soon.
 b. It was never expected for them to return soon.

Adjacency effects also prove that the Acc is assigned by the main verb; ill-formedness results if there is any constituent between the main verb and the Acc. Notice in contrast, the position of the *for* phrase in the *for-to* construction:

- (14) a. *I never expected at all them to arrive so soon.
 b. *I want very much him to succeed.
- (15) a. I want very much for him to succeed.
 b. *I want for him very much to succeed.

In conclusion, the source of the Acc on the embedded clause subject is the main verb.

1.2. ***The properties of the Inf Inflection in raising complements.*** Raising triggers are propositional verbs. Raising triggers are propositional verbs, with limited exceptions (discussed in the next sections). The Acc + Inf complements are interpreted as *propositions*. From a modal semantic perspective, most raising triggers (*believe, know, etc*) are *weak intensional predicates*, extensionally anchored and associated with weakly realistic settings. This explains why, when genuine raising constructions allow a paraphrase, the paraphrase is *indicative*:

- (16) They are *now* reporting the enemy to have been defeated *yesterday*.
 They are now reporting that the enemy was defeated yesterday.
- (17) They knew him to be arriving the next day.
 They knew that he would arrive the next day.

Moreover, as already discussed, the raising infinitive *may* have Tense. (Cf. Landau (1999), Gueron & Hoekstra (1995), and contra (Stowell (1981), Martin (1992), Boskovic (1997)). Typically, the Inf inflection is devoid of anaphoric agreement features, and is [+realis, +Tense]. The infinitive Tense is oriented towards the main clause Ev-T/ Ass-T, but can establish an independent time sphere as shown by the presence of frame adverbials different from those of the matrix. (See examples (16), (17) above). Exceptions are represented by the complements of causative verbs, which allow no finite paraphrase and by those of perception verbs, which are untensed, so that finite paraphrases are rarely equivalent with the infinitive construction. Thus, (18a, b) have different meanings, since it is quite possible for me to see that he entered, even though I didn't see him enter.

- (18) a. I saw him enter the room.
 b. I saw that he entered the room.

In English (though not in other languages), control and raising constructions are in complementary distribution (with limited exceptions). In other words, raising verbs do not allow the PRO-TO construction:

- (19) a. *I believe [PRO to be honest].
 b. I believe that I am honest.
 c. I believe myself to be honest.

This paradigm shows that the infinitive Inflection in the Acc + Inf construction cannot license PRO. Since in the analysis adopted here, PRO was licensed by anaphoric agreement features on the Inflection *to*, it follows that the Inflection in raising structures lacks agreement features. This is confirmed by the different ellipsis pattern.

- (20) a. John was not sure he could leave, but he tried PRO [_I to e].
b. *John believed Mary to know French but Peter believed Jane [_Ito e].

The absence of anaphoric agreement features, not the absence of Tense is the characteristic property of raising infinitives. Since PRO cannot be licensed, the subject of the raising infinitive is always lexical and checks Case in the main clause.

It is important to note that there are several groups of verbs that allow both raising and control complements, which share their temporal and partly their modal properties. Exercitive verbs of permission and command are cases in point.

- (21) He ordered his bed to be made at once (Acc + Inf, Raising)
He ordered the servant [PRO to make his bed at once]. (control)

The existence of such doublets indicates that the difference between raising and control cannot be expressed in terms of different temporal properties, but lies in the presence / absence of anaphoric *agreement feature*, which entail a different handling of the subject of the infinitive clause.

1.3. *The categorial status of the infinitive clause.* Reasoning as in the preceding section, we will tentatively adopt the view that Infinitive complements are IPs. (For a different view, see Lightfoot (1990), Pesetsky (1992), and Rooryck (1995)).

Conclusions

1. The Acc in the Acc + Inf construction is not θ -marked or s-selected by the main verb, but by the infinitive.

2. The infinitive subject gets Acc from the main verb, if the latter is active. (the Accusative + Infinitive structure). It gets Nom if the main verb is passive, raising to the subject position of the main clause. (the Nominative + Infinitive structure).

3. The Inf Inflection of the Acc + Inf lacks anaphoric agreement features, so PRO cannot be licensed. This explains why in most cases the PRO-*to* and the Acc + Inf constructions are in complementary distribution.

4. Given that R-triggers are extensionally anchored weak intensional verbs, the infinitive complement is interpreted in a weakly realistic setting. This explains why the Acc + Inf accepts an indicative, rather than a subjunctive paraphrase.

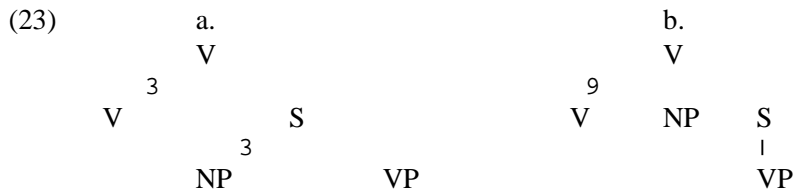
5. The Acc + Inf is categorially an IP.

2. Important previous analyses

2.1. *Postal's analysis: movement to the matrix DO (θ)-position.* The classical study of the Acc + Inf construction is Postal's 1974 *On Raising*. He assumes that the Nom + Inf and the Acc + Inf are parallel structures. In one case the verb is intransitive, so the infinitive subject, which is contained in a subject clause, moves to the main clause Subject position.

- (22) a. It happens that *he* is rich.
 b. *He* happens to be rich.

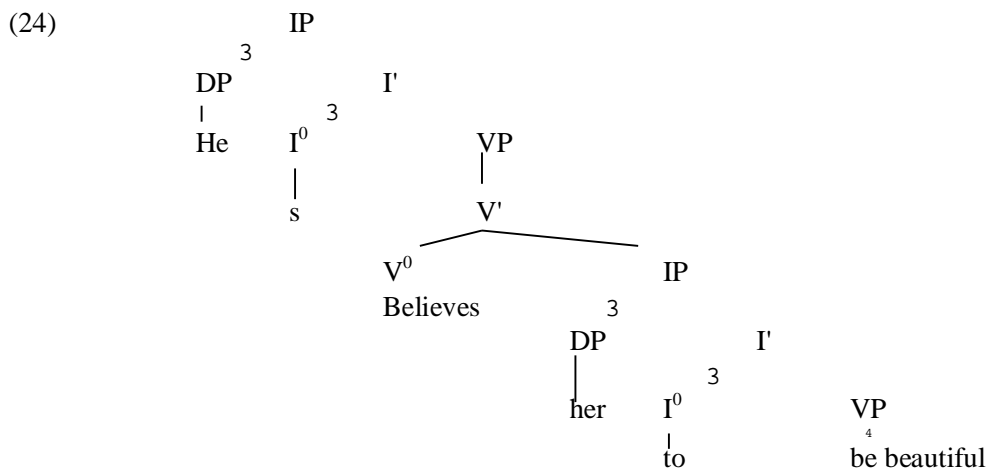
In the other case, the main verb is transitive. The infinitive complement is a direct object. The infinitive subject raises into the DO position of the main clause, roughly as sketched below:



Postal's analysis could be carried over for SSR cases, because SSR-triggers are ergative and allow movement of another constituent into the empty non-thematic subject position.

His analysis of the Acc + Inf is unacceptable for important theory-internal reasons in the GB/MP models, which impose a severe ban on moving a constituent into a θ -position. The main verb has only one internal θ -role, assigned to the clause in the initial configuration (23a). After movement, the derived object and the remnant of the clause compete for the same θ -role. Other things being equal, structure (23b) ought to be uninterpretable with verbs like *believe*, *expect*, etc. Postal's analysis was therefore abandoned in the early eighties.

2.1. The classical GB Analysis: Case assigned under government, no movement involved. Within a classic GB framework, once it is decided that the raising complement is an IP (as in Chomsky (1986)), the analysis of the construction raises no difficulties. Consider the representation below:



The embedded subject is governed by the main verb. Remember that if a verb, governs a projection, the IP in this case, it governs both its head and its specifier, i.e., the subject position of the infinitive clause is governed and can be case-assigned by the main verb.

This "traditional" account holds that, unlike the Nom + Inf, the Acc + Inf construction does not involve movement of the Inf subject into the main clause. This contrast has strong theoretical motivation: Subject-to - Subject raisers, like *seem*, *appear*, etc are all ergative verbs. Their subject position is non-thematic and is thus open to A-Movement. Transitive raisers do not have any non-thematic A-position. Indeed, in contrast with the subject position of *appear* verbs, the object position of *believe* verbs is thematic. And, as known, movement is not allowed into non- θ positions.

The Acc + Inf construction was analysed as merely an instance of *structural case-assignment* under government by the main verb. This account is very straightforward and it can handle important properties of the Acc + Inf construction:

a) First, the analysis explains the subject properties of the Acc, mentioned above, such as, the fact that it can be expressed by expletives like *it*, *there*, which are always subjects in English, or the fact that there is no -s-selection or θ -marking between the main verb and its apparent DO.

b) Secondly, the analysis easily accounts for the distribution of reflexive and reciprocal anaphors and of personal pronouns appearing as subjects of the Inf clause. Consider the contrast between finite and non-finite clauses regarding syntactic anaphors first:

- (25) a. He_i believes [himself_i to be honest].
b. *He_i believes that himself_i is honest
c. They believe each other to be honest.
d. *They believe that each other are honest are honest.

The anaphors, *himself* and *each other* cannot be subjects in the finite complement clause (25b, d), because the latter defines a local domain (governing category) for binding. They are allowed as subjects in the Acc + Inf clause, since in this case the local binding domain (governing category) for the anaphors is the *main* clause, not the subordinate clause. This is because the main clause is the smallest projection that contains the anaphor, its governor, which is the main verb, and an accessible SUBJECT, which is the main clause Inflection. Consider pronouns next.

- (26) a. He_i believes him_{i*/j} to be honest.
b. He_i believes that he_i /_j is honest.

The pattern of obligatory disjoint reference which distinguishes the non-finite clause (26a) from the finite one (26b) can be explained in the same way. In the case of the infinitive complement, (26a), the binding domain of the pronoun is the main clause, as explained above. Therefore, the subject of the main clause cannot possibly be an antecedent for the pronominal infinitive subject. In contrast, in the case of the finite complement, the binding domain for the pronominal subject is the subordinate clause itself. The subordinate clause contains the pronoun, an (im)proper governor, finite Inflection with Agr features, and an accessible SUBJECT, which is also finite Inflection. The pronoun is unbound inside the GC, i.e., inside the subordinate clause, but it can have an antecedent somewhere else, for instance, in the main clause.

Remark. These facts follow from classical Binding Theory:

Condition A. An anaphor is bound in its governing category.

Condition B. A pronoun is free in its governing category.

Governing Category = the smallest maximal projection that contains α , a governor of α and a

SUBJECT accessible to α . - This is the most prominent nominal in some domain: specifically, finite inflection in a finite clause, the grammatical subject in a non-finite clause and the Genitive in a DP domain.

c) Passivization. The analysis can also explain the behaviour of the infinitive complement when the main verb is passive, in pairs like the following:

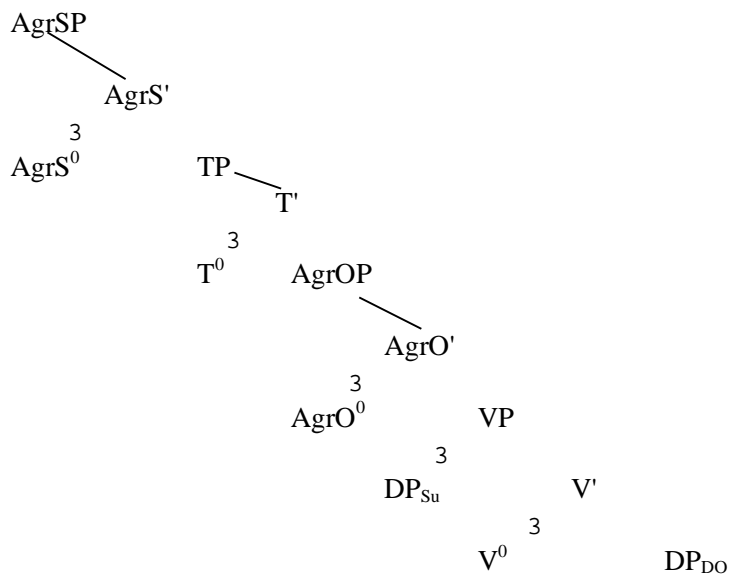
- (27) a. Everyone believes him to be an addict.
b. He_i is believed t_i to be an addict.

Since the main verb, now in the passive participle form, can no longer assign Case to the embedded subject, the latter would remain caseless if it didn't raise into the non-thematic subject position of the passive verb, where it receives Nom from finite Inflection: The infinitive subject thus undergoes SSR. The trace left behind is properly governed by the verb.

This analysis thus accounts for the most important properties of the Acc + Inf clause: the subject properties of the Acc, the passivization of the Acc on the main clause cycle, the distribution of the anaphors in the subject position of the infinitive clause.

2.2. Chomsky's Minimalist Analysis. Covert movement of the infinitive subject to the Acc case position of the main clause. Chomsky's minimalist analyses (1993, 1995) are minimally different from the one presented above, the change being due to his different approach to clause structure and Acc checking. In his (1993) paper, he adopts the split inflection clause structure below, and unifies the analysis of the Nom and the Acc, by claiming that both cases are assigned in agreement projections. This theory has come to be known as the Agr-based theory of case. The Nom is checked in Spec AgrS, while the Acc is checked in SpecAgrO. There is however a disparity between them, since the Nom feature is *strong*, and must be checked by overt movement of the subject to SpecAgrS, while the Acc feature is *weak*, and is thus checked covertly, by movement at LF.

(28)



What must be retained from the particular version of Chomsky's Agr-based theory is the existence of a special non- θ positions (Spec AgrO) where Acc case is checked, by (overt or) covert movement. It will be seen that there are other ways of implementing the same idea.

Chomsky's 1993 account of Acc Case-checking opened the possibility to analyse SOR constructions as involving covert movement to SpecAgrOP. Rephrasing his earlier analysis, Chomsky claims that the subject in the Acc + Inf construction remains in the embedded clause overtly. It will raise to SpecAgrOP of the main verb covertly, at LF. This view of the Acc + Inf construction is proposed in a series of papers by Lasnik (1999) and adopted by Chomsky (1995), (1998).

Empirical consequences

In its minimalist form, Chomsky's account has better empirical coverage. Thus while in overt syntax the subject is still in the infinitive clause, at LF, the level which captures the structural aspects of meaning, the former subject is in the main clause. This accounts for the different properties that the subject of the Acc + Inf shows, in contrast with the subjects of other types of subordinates. Thus, if the subject is in SpecAgrOP at LF then it c-commands the constituents of the VP, in particular it c-commands main clause VP adjuncts at that level.

Lasnik and Saito (1991) mention certain binding theoretic facts which make sense in the light of the new analysis. Unlike the subject of a finite complement, the subject of an Acc + Inf can license anaphors, for instance reciprocal pronouns, contained in a matrix adjunct. Since the Acc subject can bind the reciprocal contained in an adverbial VP adjoined to the main verb, it follows that that the Acc c-commands the adjunct, i.e., is in the main clause, in a position higher than the adjunct, at LF.

- (29) a. ?*The DA proved [that *the defendants* were guilty] during *each other's* trials.
b. ?The DA accused *the defendants* during *each other's* trials.
c. ?The DA proved [*the defendants* to be guilty] during *each other's* trials.

In this set of examples, the first sentence shows that the subject of an embedded tensed clause does not c-command matrix adjuncts, whereas the second sentence demonstrates that the object of a clause can c-command certain type of adjuncts of that clause. The third sentence of the set shows that the subject of an embedded infinitive clause behaves on a par with the matrix object rather than with the subject of an embedded tensed clause. Such facts cannot be analysed under the earlier view, which claimed that the Acc is in the lower clause at all levels of representation.

In the following it will be suggested that movement of the Acc into the main clause at LF is insufficient, since there is conclusive evidence that this movement takes place in overt syntax at least sometimes.

3. Evidence for a movement analysis

In this section we review the empirical evidence in favour of an A-Movement analysis of the Acc + Inf. Many of these facts had been discovered by Postal in his important work, and had remained unexplained in the GB frame. New arguments in favour of overt raising have recently been brought to light in studies due to Bowers (1993), Koizumi (1995), Boskovic (1997), Lasnik (1999).

The A-movement analysis simply claims that the Inf subject *overtly* raises to SpecAgrOP or some other functional projection of the main verb to check Acc case. The movement is legitimate, since it represents movement to a *non- θ -position*. Thus this analysis depends on the general idea of separating the θ -domain of a lexical head from its checking domain. Among others, this entails separating θ -position, from case positions.

Technically, the change from covert to overt movement of the object presupposes changes in the general assumptions about the syntax of the English clause. In particular, since the order O + V is not attested in English, if it is assumed that the DO raises past the θ -domain of the main verb, to some position like SpecAgrOP, the verb will have to move further to the left:

- (30) John T [_{XP} believe_i [_{AgrOP} him_j t_i [_{IP} t_j to be crazy]]]

The XP projection in (30) is likely to be some AspP, a position available in the English clause. The technical details will be discussed in the next section. In this section we simply run through the evidence for the overt movement analysis, underlining those facts which cannot be explained under the hypothesis of covert LF movement of the AccDP.

We move from facts, which are not decisive, given the state of the MP, to facts, which are decisive, arguing for overt raising in any variant of the generative program.

3.1. *Constituency tests.* Postal (1974) extensively argues that *for-to* and *that* complements are constituents, while the Acc + Inf is a sequence of two constituents, because the Acc has overtly raised into the main clause

Consequently, Move, which operates only on constituents, does not operate on the Acc + Inf, even when it can operate on *for-to* and *that* complements. Reduction rules affecting co-ordination, such as Right Node Raising and Gapping, provide relevant data. Right Node Raising used to be described as a rule which shifts to the right, one identical rightmost constituent, for example the DO in (31a), in several conjuncts. Operating on (31a), Right Node Raising produces (31b). What matters is that the string which is copied and raised must be one constituent.

- (31) a. John likes Mary and Bill hates Mary.
b. John likes t_i and Bill hates t_i , Mary.

That and *for-to* complements expectedly undergo RNR, since they are constituents. However, RNR does not apply to the Acc + Inf sequence, presumably because it is not one, but two, constituents.

- (32) a. Henry claimed *that this grammar is recursive*, but nobody has so far proved that this grammar is recursive.
b. Harry claimed t_i , but nobody has so far proved t_i *that this grammar is recursive*.
c. I think it would be unwise *for John to marry Laura*, but Tom feels it would be clever *for John to marry Laura*.
d. I think it would be unwise t_i , but Tom feels it would be clever t_i *for John to marry Laura*.
- (33) a. I find it easy to believe *Tom to be dishonest*, but John finds it hard to believe *Tom to be dishonest*.
b. *I find it easy to believe t_i , but John finds it hard to believe t_i *Tom to be dishonest*.

Gapping is another rule which affects co-ordinate structures and which is sensitive to constituent structure. Gapping eliminates an *identical string* in one of the conjuncts and must leave behind *no more than two* constituents flanking the gap (examples (34)). Again, *that* and *for-to* complements can be left behind by Gapping, since they are constituents (examples (35b)) but the Acc + Inf cannot be left behind by Gapping (35d), since this rule cannot leave three constituents behind:

- (34) a. Betsy said that Alan *went* to the ballgame and Peter [*went*] to the movie.
b. *Betsy said that Alan went to the ballgame and that Peter [] to the movie.
c. Frank found Tom to shave himself and Sam [] Peter [].
d. *Frank found Tom to shave himself and Sam [] Peter to wash himself.
- (35) a. I believe that Tom is weird and John believes that Sally is paranoid.

- b. I believe that Tom is weird and John [] [*that Sally is paranoid*].
- c. I believe Tom to be weird and John believes Sally to be a paranoid.
- d. *I believe Tom to be weird and John [] *Sally* [*to be paranoid*].

Finally (pseudo)-cleft constructions also treat the Acc + Inf differently from *that* and *for-to* complements. As known, the string which is focused and appears after *be* must be one constituent. As a result, the Acc + Inf cannot be focused, whence the ungrammaticality of (36b), (37b), while *that* and *for-to* complements can be focused (36a), (37a).

- (36) a. What I expect is that they will succeed.
- b. *What I expect is them to succeed.
- (37) a. What I would like is for them to win the competition.
- b. *What I would like is him to come to the party.

The contrasts are quite sharp. Unfortunately, the value of the constituency tests is undermined by the fact that there is another reason, in addition to constituency, which might explain the ungrammaticality of the starred sentences: Namely, in all of the examples, the Acc DP shows up at a distance from the main verb, in a configuration where covert Acc case checking would be impossible. (cf. Boscovich (1997: 114)). The ungrammaticality of the starred sentences is not, therefore, a decisive argument for the overt movement analysis.

3.2. *Interpretative phenomena.* This class of arguments is based on the fact that operators which interact should be in a configuration of c-command and that the AccDP, by overtly raising, may come to c-command logical operators in the main clause interacting with them.

a) One argument of this sort involves ability to license negative polarity items (NPI). As known, NPIs must be c-commanded by negation. Moreover, NPIs are licensed on the basis of S-structure configurations, as suggested by the following argument. A sentence like (38a) is ambiguous, depending on the LF position of *someone*, which can have wide or narrow scope with respect to the main verb. The narrow scope reading is obtained by LF lowering (reconstruction) of *someone* in its initial position in the lower sentence. The narrow scope reading is equivalent with (38b).

- (38) a. Some politician_i is likely [_i to address John's constituency].
- a' [] is likely [someone to address John's constituency].
- b. It is likely that some politician will address John's constituency.

Now notice in contrast the behaviour of the NPI *anyone*. A negative c-commanding predicate like *unlikely* in (39a) can license *anyone* in the subject position of the embedded finite clause. However, *unlikely* cannot license an NPI in subject position in the Nom + Inf construction in (39b), because it does not overtly c-command it.

- (39) a. It is unlikely that anyone will address the rally.
- b. *Anyone is unlikely to address the rally.

Sentence (39b) is expectedly odd on its surface structure configuration since the NPI *anyone* fails to be c-commanded by the negative predicate, but it should be grammatical, if *anyone* could reconstruct by quantifier lowering at LF, as proposed by May (1985). If this were true, the NPI *anyone* would be c-commanded by *unlikely* at LF, as in (40), and it would be duly licensed.

- (40) *[] is unlikely[anyone to address the rally].

This is a strong argument that NPIs are licensed *before* Spell-Out. Consider now the examples below, involving Acc + Inf structures:

- (41) a. ?*The DA proved [that *none of the defendants* were guilty] during *any* of the trials.
b. The DA accused *none of the defendants* during *any* of the trials.
c. ?The DA proved [*none of the defendants* to be guilty] during *any* of the trials.

The first sentence proves that the subject of a finite *that* clause does not c-command matrix adjuncts, whereas the second sentence demonstrates that the DO of a clause can c-command certain type of adjuncts in the same clause, and consequently may license NPIs in the adjunct which it c-commands. Like before, the third sentence in the set shows that the Acc subject of the infinitive clause is able to license NPIs, behaving like the matrix object rather than like the subject of a finite *that* clause. This indicates that the Acc subject has overtly raised to a matrix position, from which it c-commands the matrix adjuncts.

b) As a second argument, consider the following examples, in light of Condition C of BT (a referential expression may have no antecedent at any level):

- (42) a. Joan believes that he_i is a genius even more fervently than Bob's_i own mother does.
b. ?*Joan believes him_i even more fervently than Bob's_i mother does.
c. ?*Joan believes him_i to be a genius even more fervently than Bob's_i mother does.
(43) a. ?*The king declared him to be an outlaw even more eagerly than Marcel's own squire had.
b. The king declared that he was an outlaw even more eagerly than Marcel's squire had.

Under the assumption that the infinitive subject *him* raises into the main clause Acc position, examples (42c) and (43a) will be ruled out by Condition C, on a par with (42b), since the proper names (*Bob*, *Marcel*) will have a c-commanding antecedent, namely the former infinitive subject, which c-commands the adjunct clauses after raising. On the other hand, if the Acc subject stayed in the embedded clause throughout the derivation, sentences (42c) and (43a) should be perfectly grammatical, just as (42a) and (43b) above.

If the level of representation relevant to Condition C is S-structure, the examples above suffice to show that SOR takes place prior to Spell-Out. On the other hand, if Condition C applies at LF, as suggested in Chomsky (1993 and later), or if it applies at the earliest possible point in the derivation (Ordonez (1998)), the examples discussed only show that the Acc subject occupies the Spec of the matrix case projection at LF. To prove that SOR really takes place before Spell-Out, we need to turn to other types of evidence, which is fortunately possible.

3.3. **DO properties.** The former subject acquires syntactic DO properties. This provides a very strong and persuasive class of arguments for overt movement.

3.3.1 *There are, for instance, negation facts*, first commented upon by Postal (1974), which unambiguously prove that the Acc in the Acc + Inf clause acquires or, at least, may acquire matrix DO status in *overt* syntax. One such fact is Negative Attraction. Negative Attraction is felicitous in subject position where it applies freely, but not in other positions, such as the DO one. Consider sentences (44), contrasting *that* and *for-to* complements with Acc + Inf complements:

- (44) a. Harry believes that not many pilots are familiar with Racine.

- b. John prayed for not many of them to be fired.
- c. *Harry believes not many of the pilots to be familiar with Racine.

Sentences (44a, b), where the Neg was attracted to the subject position are flawless. Sentence (44c) is infelicitous since negation has been attracted to a constituent that has turned into a DO.

3.3.2. *Another useful property of negative sentences* is that there cannot be more than one sentence negation per simple sentence. Bearing this in mind consider the set of sentences below:

- (45) a. I couldn't believe that none of these sailors kissed Sally.
- b. I didn't arrange for none of them to survive, it just happened that way.
- c. *I couldn't believe none of the sailors to have kissed Sally.

The *that* and *for-to* examples are flawless, since each of the two clauses contains one clausal negation, the Neg clitic in the main clause, and the negative subject quantifier DP in the embedded clause. The Acc + Inf example is ill-formed since the main clause contains both a negative verb and a negative DO quantifier. This shows that the AccDP is in the main clause before Spell-Out.

3.3.3. *The object status of the AccDP is also confirmed by Heavy NP Shift.* As known, Heavy NP Shift applies *only* to objects, never to subjects. It is expected then that it will apply to the subject of an Acc + Inf, which is a DO, as a consequence of overt movement, but not to the subject of a *for-to* or *that* clause which are subjects throughout the derivation:

- (46) a. *Jim proved that t were innocent all of the gang members who had been caught.
- b. Jim proved t to be innocent all of the gang members who had been caught.

This is again very strong evidence in favour of overt SOR.

3.4. ***Intervening matrix constituents:*** This is the clearest and least theory-dependent type of data.

3.4.1. As originally noted in Postal (1974), the Acc DP may occur to the left of certain matrix elements. Bowers (1993) quotes examples of type (47a), where the Inf subject (= derived DO) is separated from the Inf by an Indirect Object licensed by the main verb. Similarly, time adjuncts (47b, c), as well as manner adverbials (47d, e) of the main verb may intervene between the Acc and the Inf.

- (47) a. We proved Smith_i to the authorities [t_i to be the thief]. (Bowers (1993))
- b. I've believed John_i for a long time now [t_i to be a liar].
- c. I have found Bob_i recently [t_i to be morose].
- d. ?I proved him_i conclusively [t_i to be a liar].
- e. I suspect him_i strongly [to be a liar].

Although the data are not as clear cut as one might wish, such examples, clearly tilt the balance in favour of the overt movement analysis. Here is one attested literary example due to Poutsma (1929); the time phrase *in a moment* clearly modifies the main verb.

- (48) His features and beauty betrayed him, in a moment, to be a Frenchman

At the same time, the strong ungrammaticality of the examples below indicates that the overt raising is to the canonical DO position, since the DP shows characteristic adjacency effects:

- (49) a. *We proved to the authorities Smith to be the thief.
 b. *I've believed for a long time now John to be a liar.
 b. *I have found recently Bob to be morose.
 d. *I proved conclusively him to be a liar.
 e. *I suspect strongly him to be a liar.

These examples also give a hint as to what the derived position of the Acc DP is. Remember that the infinitive clause is inside the VP, in complement position with respect to the main verb. Since these matrix adverbials precede, rather than follow the infinitive clause, these adverbials can only be *left* adjoined to the VP where the infinitive clause merges. This means that the DO moves to a case projection (= FP) out of the VP to which the adverb is adjoined, roughly as suggested below:

- (50) [FP DP_{DO} F⁰ [VP AdvP [VP DP Su V [IP t_{acc} to VP]]]

3.4.2. A similar quite convincing argument has to do with the position of the particle in complex verb constructions. Normally, the particle of a complex verb cannot occur in an embedded clause; this is illustrated in (51b) below, where the particle wrongly appears after the complementizer *that*. However, in sentence (51d) below the Acc subject of the subordinate clause precedes the particle. This proves that the Acc DP is in the matrix domain at Spell-Out. The grammaticality of sentence (51d), and the fact that this is the only possible word order lends support to the overt raising analysis.

- (51) a. They are trying to make out that John is a liar.
 b. *They are trying to make that John *out* is a liar.
 c. ??They are trying to make out him to be a liar.
 d. They are trying to make him out to be a liar.

Conclusions

Two current analyses of the Acc + Inf construction have been compared: One of them essentially claims that the Acc is a subject, either all along the derivation (if Case is assigned under government), or up to LF, where it covertly raises to some functional projection in the main clause to check its Acc feature. The analysis can successfully account for the subject properties of the Acc, for certain interpretative (scope) phenomena, as well as for the fact that the infinitive subject may undergo passive on the main clause cycle and may be an anaphor bound in the main clause.

It was basically supposed that the Acc + Inf did not involve movement, because on classical GB assumptions, the DO position is always thematic, and cannot be moved into.

The second analysis involves overt movement into a non-thematic position of the matrix verb the specifier of some functional projection where the Acc feature may be checked. Since the Acc DP is projected as a subject in the infinitive clause this analysis can explain all the subject properties of the Accusative, i.e., its empirical coverage is at least as good as that of that previous analysis.

The two analyses make different predictions regarding the properties of the Acc + Inf construction:

First, under the overt raising analysis, the raised subject, which has become a DO, should show object properties alongside of its subject properties. It has a higher c-commanding position with respect to other matrix constituents with which it can interact, regarding binding theoretic facts, negation facts, quantifier scope and other interpretative phenomena which are configurational. Rules sensitive to object status, such as HNPS may apply to the AccDP.

Secondly, regarding constituency, under the Raising analysis, the Acc + Inf is viewed as two constituents, while under the classic GB analysis, the Acc + Inf is one constituent and should behave like *for-to* or *that* regarding constituency tests. We have seen, however that *that* clauses and *for-to* infinitives behave very differently from Acc + Inf under movement. The evidence thus proves that the Acc + Inf is a sequence of two constituents, therefore, that the Accusative has overtly moved in the main clause. Similarly, because the Acc + Inf is a sequence of two constituents with the Acc in the main clause, constituents of the main clause (other objects, particles, adjuncts) may intervene between the Acc and the infinitive.

We conclude that the overt raising analysis is to be preferred on grounds of descriptive adequacy. The particular formalization depends on our acceptance of a particular view of the functional structure of the English clause. Several proposals are examined in the next section, in relation to the more general problem of Acc-Case checking in English.

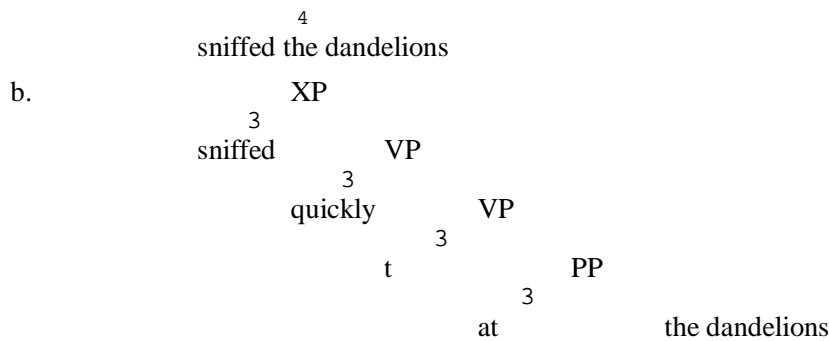
4. The adjacency constraint and the assignment of the Accusative case in English

4.1. It is well-known that in English the Direct Object (= DO), unlike other subcategorised constituents, must immediately follow the verb, being *adjacent* to it. Stowell (1981) proposes an *adjacency constraint*, which prohibits the DO from being separated from the verb by any intervening constituent. The DO differs in this respect from the Indirect and Prepositional objects which allow the insertion of an adverb or of another object. (cf. the contrast between (52a, b), (52c, d) and (53a, b)).

- (52) a. He bought the ring secretly.
 b. *He bought secretly the ring.
 c. John wrote about himself secretly.
 d. John wrote secretly about himself.
- (53) a. *Opus sniffed quickly the dandelions.
 b. Opus sniffed quickly at the dandelions.
 c. Opus gave the book quickly to Rosebud.

Given the principles of projection for complements, the verb is always a sister to its object, in the order (Adv) +V+DO/PO+ (Adv). On the basis of the contrast between the DO and the PO, in order to explain why the adverb may intervene between the Verb and its PO, though not between the verb and its DO, Pesetsky (1989) argues that the verb may raise to the left when its object is prepositional, but not when it has a DO. Pesetsky thus contradicts the traditionally accepted position that lexical verbs never raise to any functional projection in English (cf. Pollock (1989)). This contrast between the DO and the PO follows from differences of case-checking. With POs, the DP's case is checked by the preposition. With DOs, it is checked by the verb, in a configuration presupposing adjacency. (See (54a, b) corresponding to (53a, b)).

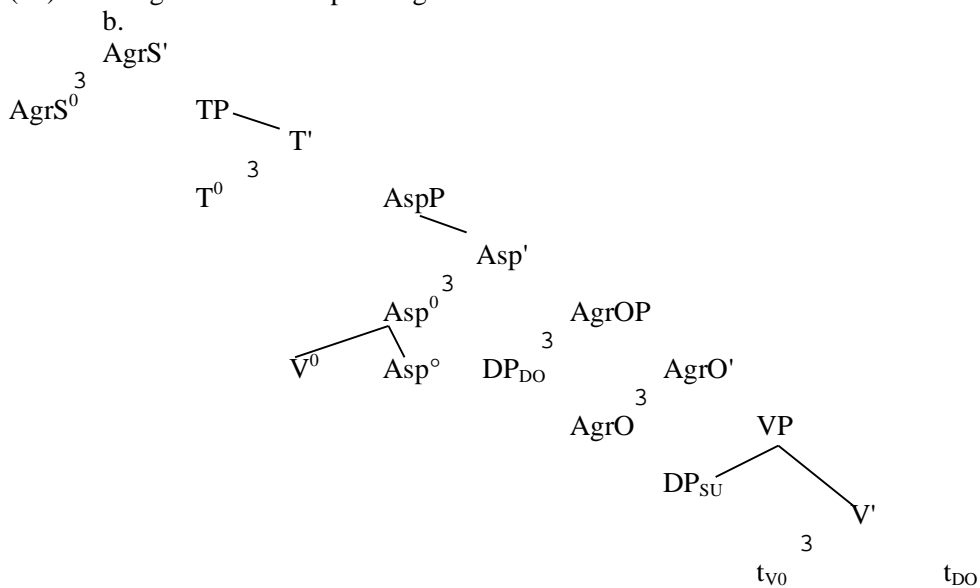
- (54) a.
$$\begin{array}{l} \text{XP} \diagdown \\ \quad \quad \quad \text{VP} \\ \quad \quad \quad 3 \\ \text{quickly} \quad \quad \quad \text{VP} \end{array}$$



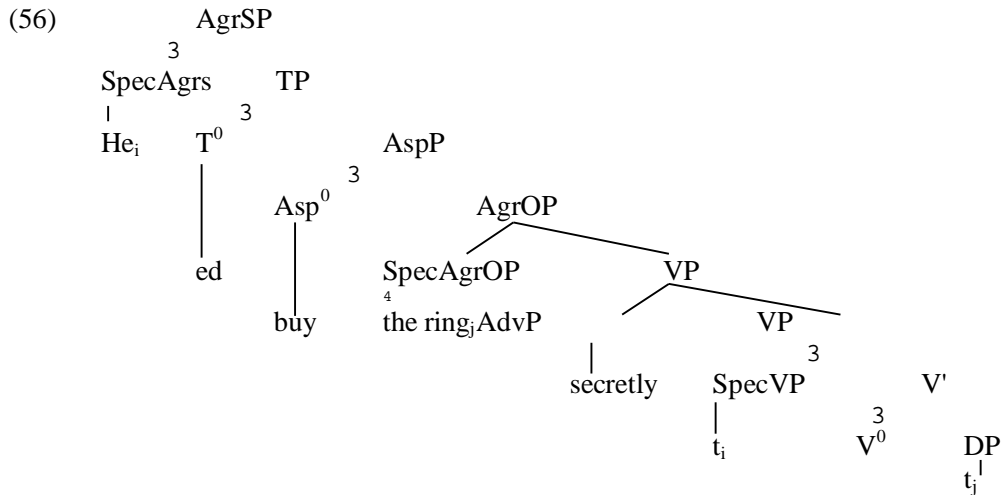
This analysis had difficulties when confronted with examples like (53c), which contains both an adjacent DO, and an adverb felicitously intervening between the DO and the prepositional IO. It is not clear how the adverb gets into that position. Johnson (1991) is among the first to propose that the V and DO *both* move out of their initial position for Acc-checking, leaving behind the adverbs left adjoined to the VP. Incorporating Chomsky's (1993) Agr-based theory of case, it was concluded that the verb and the DO *overtly* raised to the head and respectively to the specifier of the AgrOP in the description of Chomsky (1993) mentioned above. The verb overtly raises to AgrO, while the DO overtly raises to Spec AgrO. The verb in English does not reach T, as has been known since Emonds (1978) and Pollock (1989). Since the order O + V is impossible in English, the only reasonable assumption is that the verb further raises from the AgrO head to some other projection, say an AspP, as in (55a, b), a projection below Tense and above AgrOP, where V checks its aspectual feature.

Importantly, in moving to SpecAgrO, the DO crosses one Spec (SpecVP), against minimality. Chomsky (1993) argues that it is the raising of the verb out of the VP that makes possible the movement of the object past the subject or the subject trace. Movement of the verb "extends" the domain of the verb, in such a way that when the verb is in Spec AgrO⁰, the two spec positions SpecVP and Spec AgrOP become *equidistant* to the object DP. As a result, movement of the object to Spec AgrOP past the DP in subject position is allowed. Equidistance is crucial, if the clause structure in (55) is adopted.

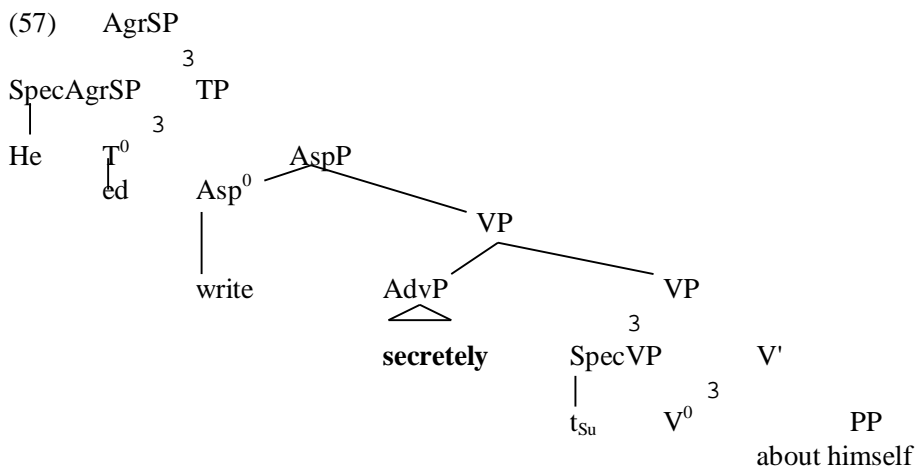
(55) a. AgrSP > TP > AspP > AgrOP > VP



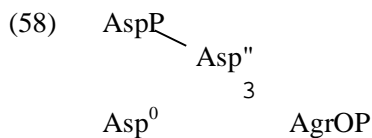
4.2 *Adjacency explained.* To explain adjacency effects, one might propose that AgrPs check only *nominal* features (cf. Koizumi (1995)). On the other hand, by definition, adverbs must adjoin to verbal (not nominal) projections, so they will not adjoin to Agr Ps. It follows that if the DO has overtly reached Spec AgrOP, no adverb could, even in principle, intervene between the verb, which must raise one projection up from AgrOP and the DO in SpecAgrOP. In this analysis, the Acc feature, like the Nom feature of Tense/AgrS, is strong and checked overtly. Manner adverbs like *secretly* in (56), which stay adjoined to the VP, are left behind by the raising V and DO. The resulting word order is always V + DO + Adverb +XP, as desired.

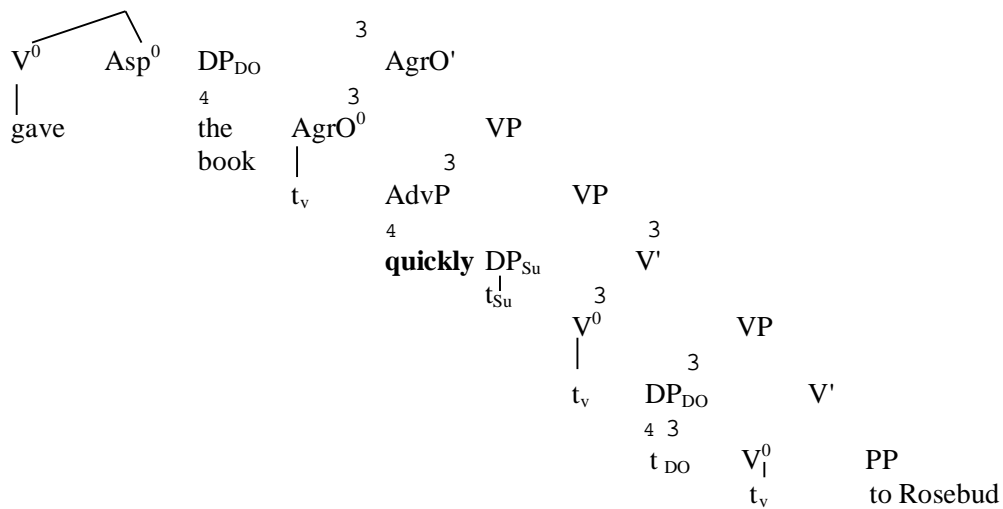


In contrast, prepositional objects do not move for Case checking, so they may be preceded by an adverb left-adjoined to the VP if the verb moves out of the VP, as in (52d) (see Pesetsky (1989), Johnson (1991), Bowers (1993), Koizumi (1995)).



Under these assumptions, the occurrence of an adverb between the DO and the prepositional Indirect Object of *give*-verbs (noticed in (53c) above) becomes comprehensible. The verb and DO have left the VP, leaving the prepositional IO behind.





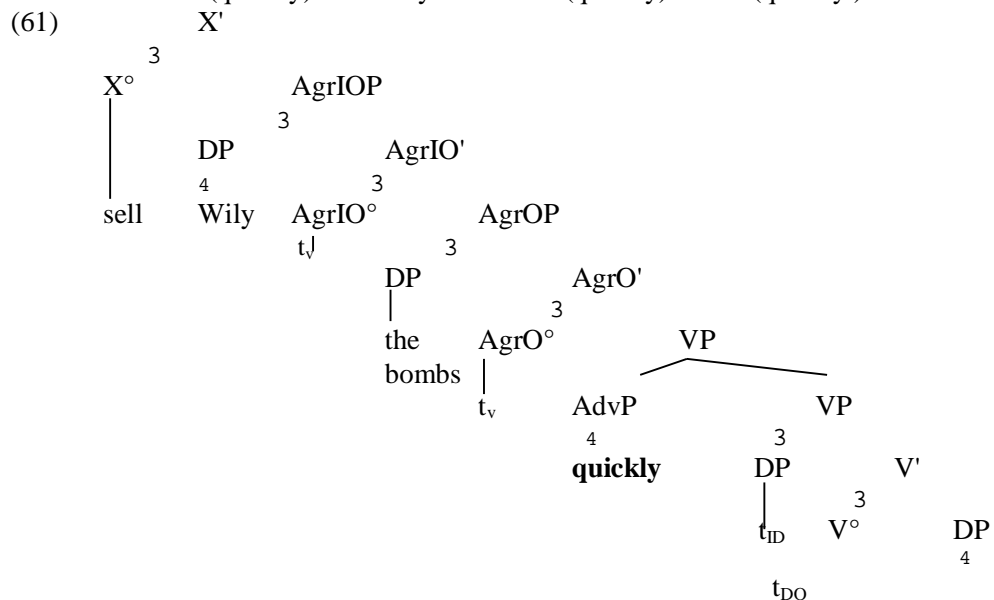
A similar type of solution was proposed for the double object construction, where no adverb may intervene between the two non-prepositional objects:

(59) *He gave her secretly the ring

The impossibility of inserting the adverb in (59), in contrast with (58) suggests that both objects have raised to functional projections, leaving the adverb behind. (Koizumi (1995), Anagnostopoulou (2000)), as in (60) and (61) below, from Koizumi (1995)). The heads of these functional projections (AgrPs) contain only nominal features (ϕ -features and case) but do not contain V-features, so they cannot be adjoined to by adverbs. The adverbs or the prepositional adjuncts are left behind, as in the following examples. Alternatively adverbs may precede the verb in Aspect:

(60) a. Acme sold Wily the bombs *quickly* for ten dollars.

b. Acme (*quickly*) sold Wily the bombs (*quickly*) for 25 (*quickly*.)



A somewhat related problem was that adverbs may also intervene between two POs, even though POs do not move out of the VP. The answer to the problem lies in the manner of argument projection:

(62) Senator Bedfellow talked to her calmly about it.

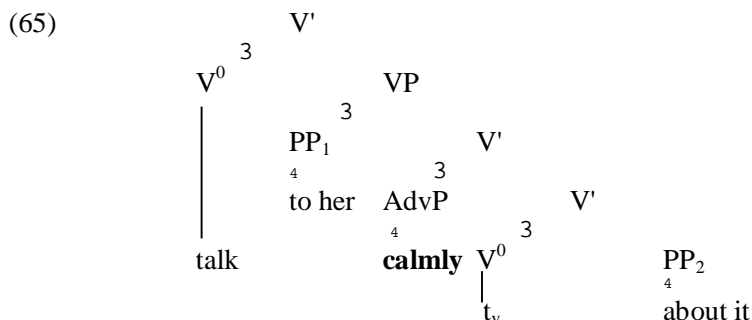
One must recall the basic facts regarding the projection of arguments, established by Kayne (1984) and Larson (1988), namely that each argument of a verb is projected in a different V-shell, strictly observing binary branching. Tripartite branching structures make the wrong predictions for many syntactic and semantic processes. For instance, in cases where there are two PPs, binding asymmetries indicate that the first PP c-commands the second:

(63) a. Rosebud talked to Binkley_i about himself_i.
 b. *Rosebud talked to himself_i about Binkley_i.

The PPs behave as one constituent for co-ordination. This indicates that the two PPs represent a constituent, presumably in a Larsonian V-shell structure:

(64) Rosebud talked [to Binkley about himself] and to Milo about Opus.

Since the V-shell structure creates more V positions, it simultaneously creates more adverb positions, as long as it is accepted that adverbs may adjoin to any projection (lexical or functional which has [+V] features). Thus a VP containing two PPs will be represented as in (65). In such a structure, the adverb may attach to the lower V', intervening between the two PPs, as in sentence (62) above.



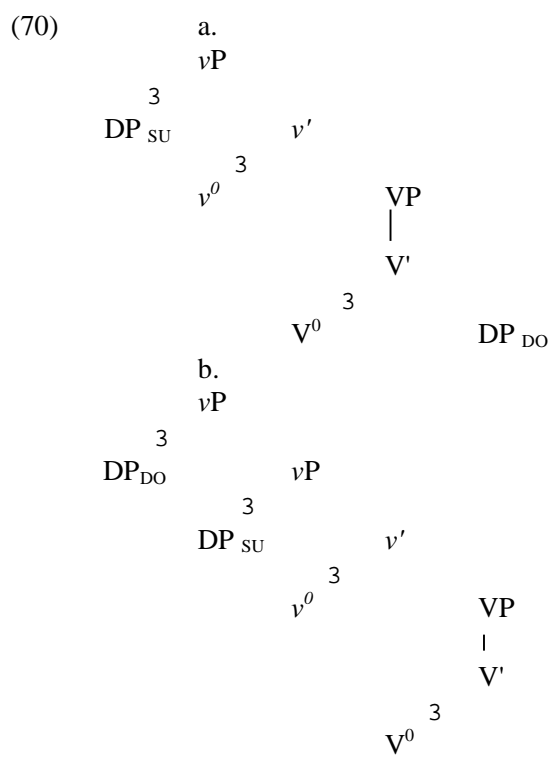
Conclusions

The proposed analysis solves the adjacency problem. It assumes that both case features (Nom and Acc) are strong in English and checked by overt movement of the respective DPs to AgrPs. Against Pollock (1989) or Chomsky (1991, 1993, 1995, 1998), it is claimed that English is a language in which both the verb and the DO move out of the VP in overt syntax. It will be seen below that from a comparative perspective this is an undesirable result. Fortunately, there are alternative means of dealing with the adjacency effects.

4.3 *Another way of implementing adjacency. A novel view of clause structure.* There is another way of implementing adjacency, which takes into account the suggestion that transitive predications have a more complex internal structure. Their syntactic complexity is related to their semantic complexity. The view that transitive predications have a complex internal structure has been presented most forcefully in a series of papers due to Hale & Keyser (1991, 1993, 1998, 2000), resuming, with different syntactic tools, earlier insights of generative semanticists (Lakoff (1968), Dowty (1978)).

analysis is different though, in that for him the two verbs heading the shells in (69) have different status. The lower verb is a purely lexical head, θ -marking the internal argument. The upper verb is a light verb which has mixed lexical/functional properties, since it is involved not only in introducing the external argument (the subject), but also in *checking Accusative case*. Chomsky (1995) assumes that the presence of Agr projections is undesirable since Agr projections are purely formal; they have no substantive content and are not desirable LF objects, since they are uninterpretable. To gain more syntactic positions, while giving up Agr phrases, Chomsky allows heads to have multiple specifiers.

Under these assumptions Chomsky claims that the upper head in the transitive structure plays a dual role. Lexically, small v introduces the subject argument, syntactically it has a *weak Acc* feature which is checked at LF, by covertly raising the DO to the Spec vP position.



In this structure the derived position of the DO (outer Spec vP) is above the basic position of the subject (inner Spec VP). As already explained, the object can move past the subject at LF (by "leapfrogging", Bobaljik (1995)), since when the verb raises to the position v^0 , the DO becomes equidistant to the two Spec positions of v^0 .

This hypothesis faces serious difficulties in explaining adjacency phenomena (cf. Lasnik (1999), unlike the hypothesis that the Acc is overtly checked in AgrO projections. Indeed, the adverb could easily be adjoined to the inner VP, creating the structure V+Adv+DO at Spell Out. (For a solution in this framework, see Chomsky (1995), who reanalyses adverbs as specifiers rather than adjuncts, the presence of the adverb preventing the raising of the DO at LF).

4.4 The Split VP hypothesis. Koizumi (1995), Bobaljik (1995) among many argue that the correct functional structure of the (English) clause is such that the *derived position of the object, its case position, is lower than the initial position (θ -position) of the subject*.

One argument in favour of this analysis has to do with the position of floating quantifiers. As argued by Sportiche (1988), Baltin (1994) quantifiers like *all* may be associated with a DP-

trace, preceding a syntactic predicate (see above). Thus in (71) *all* indicates the original position of the DO (the derived passive subject):

- (71) a. The books_i were given [_{VP} *all* t_i t_v to John].
 b. Becky put the books_i *all* on the proper shelf.
 c. The books_i were put *all* t_i on the shelf.

Suppose that the external argument and the internal argument are both projected inside the VP. If it is true that the verb raises out of the VP to AgrOP or to AspP, then it will leave behind the trace of the subject which has itself raised to SpecT. But then a sentence like (72d) would be predicted to be grammatical, contrary to fact, since *all* duly precedes the subject trace. Similarly, if the object raises overtly out of the VP, it will again precede the trace of the subject inside the VP, so that sentence (72e) should be grammatical, contrary to fact once more.

- (72) a. The men *all will* have given a book to John.
 b. The men will *all* have given a book to John.
 c. The men will have *all* given a book to John.
 d. *The men will have given *all* a book to John
 e. *The men will have given a book *all* to John

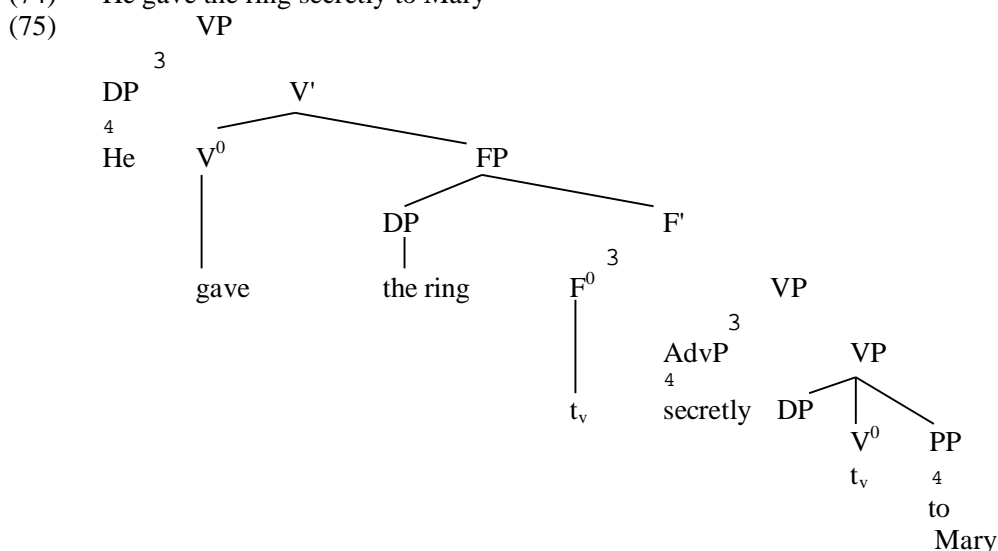
The structure of (72e) would be the following, directly reflecting the VP internal subject hypothesis.

- (73) *The men_i will have given [_{AgrOP} a book_j [_{VP} *all*_i t_j to John]]

The correct examples seem to indicate that the subject originates in a position which is higher than the position where the lexical verb and the DO raise. The lowest position of the quantifier is thus to the left the verb.

Koizumi proposes that there is an *inner functional case projection*, heading the lower VP, the one whose subject is the Theme. A sentence like (74) would have the representation in (75)

- (74) He gave the ring secretly to Mary



Koizumi's inner case projection has the same properties as the AgrOP in Chomsky (1993); it is a non- θ , case position, a position into which A-movement is licit. Moreover, if it is

assumed that the F^0 head has no verbal features, then adverbs, PPs, etc. cannot be adjoined to this projection. This explains why a sentence like (76), which violates adjacency, is ungrammatical:

(76) *He gave secretly the ring to her.

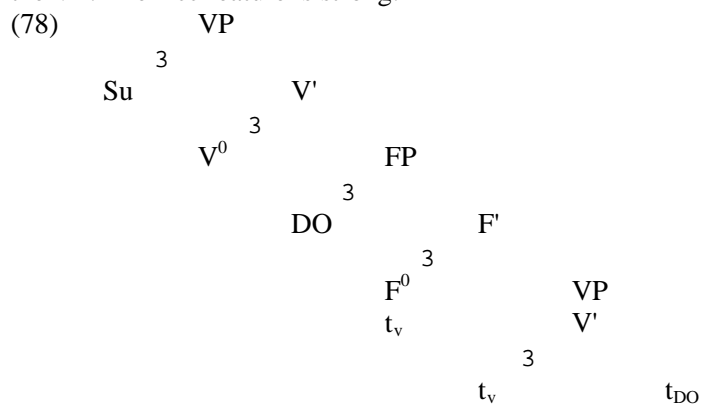
At the same time, if the case position of the object is below the initial position of the subject, so that the VP is split by the case projection (FP), then a sentence like (72e) above is simply underivable as shown in (77):

(77) The men_i will have [_{vP} t_i given [_{AgrOP/FP} a book_j all [_{vP} t_j to John]]]

In (77), the verb is in the head of the upper vP at the point of Spell-Out, and the original position of the subject (i.e., Spec vP) is higher than the surface position of the lexical verb, hence there is no trace of the subject below FP.

The story so far. Partial conclusion.

We have concluded that there is evidence that transitive verbs have a complex internal structure. The Acc feature is checked in the specifier of a functional projection FP/AgrOP *inside* the VP. The Acc feature is strong.



As to the Acc + Inf, it may be concluded that this construction is based on raising: the infinitive subject which cannot check case inside the infinitive clause, raises to the Acc position of the main verb (Spec FP in (78) a non-thematic case position.

This description of English has desirable consequences. One such result is that one can make a distinction between languages like English where the object undergoes short movement inside the VP and other Germanic languages like Icelandic, which are SVO languages, but where the object may undergo Object Shift, visibly moving out of the VP, to the right of constituents that mark the boundary of the VP, such as the Icelandic negation *ekki*. Here are examples (from Harley (1995: 181);

(79) a. Morgum studentum likadi [_{VP} ekki ...[*namskeidid*]]
 many students-D liked not the course-N
 b. Morgum studentum likadi [*namskeidid*] [_{VP} ekki ...t.]]
 Many students liked the course not
 "Many students didn't like the course."

The adverbial negation *ekki* is adjoined to the left edge of the VP and is thus a convenient diagnostic for movement out of the VP. *The object is marked Nominative in this example, but its behaviour is exactly like that of an Acc object.*

It has been shown (cf. Holmberg's Generalization) that only if there is verb movement to some functional head is the object allowed to move to the respective specifier. The interesting question is whether Icelandic Object Shift (OS) is motivated by case-checking or not. It might well be that OS is the same rule, motivated by case checking, in English and Icelandic, but the Case projections are differently placed in the two languages, inside the VP in English, outside the VP in Icelandic. (See Tanaka (1998) for a proposal that AgrOP is a split projection in UG figuring both inside and outside VP: AgrOp >VP > AgrOP>...)

The evidence suggests that Icelandic OS is conditioned by the *specificity* of the object. Only definite or indefinite specific objects undergo OS. Diesing (1993), (Reinhart (1998), Suner (1999) among many argue that OS movement is motivated by the semantic requirement that a specific / definite DP should leave the nuclear scope of the clause, i.e., that part which is asserted and contains new information. Moving to the left, the DP is interpreted as part of the known, presupposed part of the discourse. Therefore, OS is *not* case-related (cf. Harely (1995)).

There is another reason why case checking is different from OS, within Icelandic. Namely, there is reason to assume that movement for case-checking is to a position *within* the VP in Icelandic as well as in English, since Icelandic seems to exhibit the same type of adjacency effect with manner adverbials appearing between non-raised verbs and their DOs, as in (80). Presumably the account of adjacency assumed for English could be extended to Icelandic. (Harley 1995: 183)

- (80) *Hann hefur lesid hratt kvaedid'
He has read fast the poem.

We will conclude that OS is a semantically conditioned rule, relating to the checking of Topic features, rather than movement induced by the need to check case (cf. also Suner (1999)).

5. Economy considerations. SOR occurs only if required. Agree

5.1. *Overt movement is not mandatory.* What has been established in Section 3 above is that there are classes of situations (interpretative effects, intervention effects, etc.) where the overt movement of the infinitive subject in the main clause is required. However, this does not entail that raising is *always* required. We have shown that raising is available, not that it is obligatory.

Interestingly Boeckx (2001) provides evidence that raising to object does not apply automatically, but applies only if called for. Thus, consider the possible readings of the following two sentences.

- (81) a. I believe everyone not to have arrived yet. ($\forall >> \neg / \neg >> \forall$)
b. John proved every Mersenne number not to be prime. ($\forall >> \neg; \neg >> \forall$)

In each sentence, there is an ambiguity between the scope of the quantifier *everyone* and the scope of negation *not*, so that (81b) means either the every Mersenne number (\forall) is not (\neg) prime, or that not every Mersenne number ($\forall \neg$) is prime. The first reading implies that every Mersenne number c-commands *not*, as expected if *every Mersenne number* is in the main clause as an effect of raising. However, this reading is also consistent with an analysis where *every Mersenne number* is the subject of the infinitive clause, since in that position, too it c-commands

negation. More importantly, the possibility of the second reading shows that *every Mersenne number* has not raised, but has remained inside the infinitive clause, thus interacting with negation, which may move over the infinitive clause (IP adjunction), but not higher. Thus the interpretation of the sentences in (81) suggests that raising need not apply.

Interestingly sometimes only the first (raising) reading is available, as in the example below, first discussed in Lasnik (1999a):

- (82) a. Mary proved every Mersenne number not to be prime, and John will ev Fibonacci number []. ($\forall >> \neg$; * $\neg >> \forall$)
 a'. Mary proved every Mersenne number not to be prime, and John will every Fibonacci number [_{vP} prove[_{IP} t_i not to be prime]]. ($\forall >> \neg$; * $\neg >> \forall$)

Here the only available reading is the one which means that Mary proved that every Mersenne number is not prime, and John will prove that every Fibonacci number is not prime. In other words, *every Mersenne number* must be above negation, and this indicates that *every Mersenne number* is no longer the subject of the infinitive clause, since in that position it could have interacted with negation. Thus this is a case where SOR must have applied, allowing deletion to operate and erase the vP, that is, the sequence V (*prove*) + the infinitive clause, out of which the subject has raised, becoming the derived DO.

Similar cases involve intervention effects in particle movement constructions. An unbeatable argument for overt raising is the possibility of the infinitive subject (= DO) to appear between a verb and its particle. Interestingly, if a quantifier appears in this position it always has wider scope than any operators in the infinitive clause. This is supplementary proof that raising has taken place. Consider the following examples from Boeckx (2001: 506)

- (83) a. Mary made him out to be a fool.
 b. The mathematician *made every even number out* not to be the sum of two primes.
 ($\forall >> \neg$; * $\neg >> \forall$)
 c. The mathematician *made out every even number* not to be the sum of two primes.

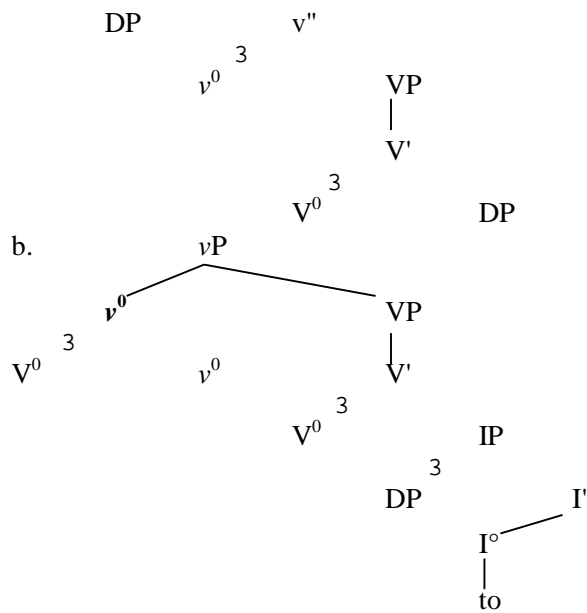
In (83a, b), word order indicates that SOR has applied. The sentence is not ambiguous; the raised DO *every even number* must c-command the negation *not* in the infinitive clause. In (83c), the sentence is ambiguous. Since negation may take scope over *every even number*, at least on one reading of (83c), overt raising has not taken place.

In conclusion, a derivation that does not involve raising is shorter and therefore more economical. SOR occurs only when it is required.

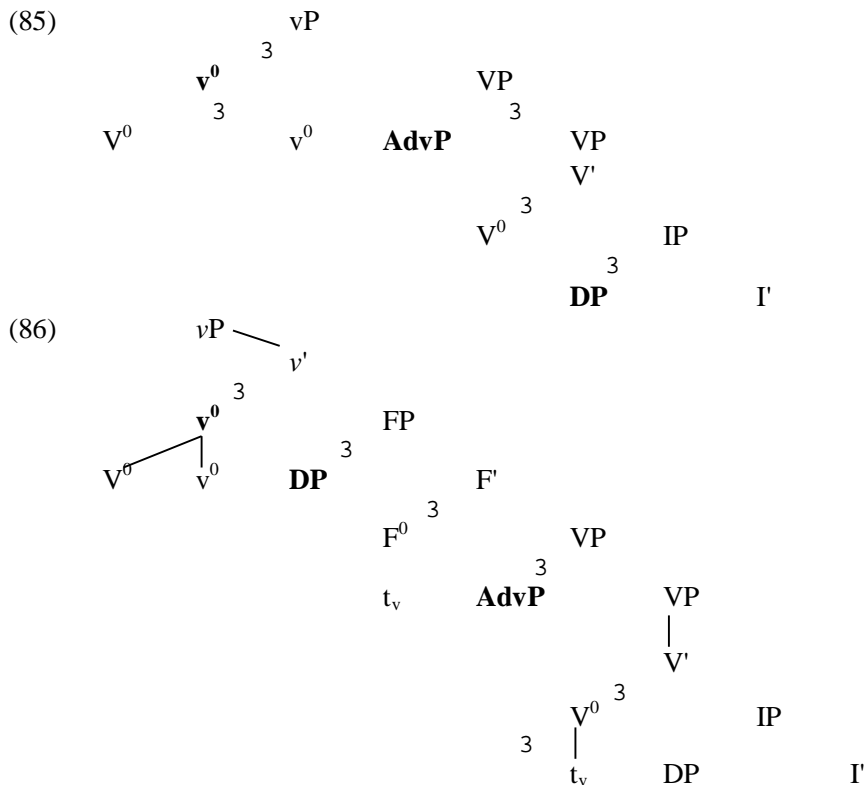
5.2. Case Checking by Agree. As to the mechanism of case-checking when overt raising is not involved, the simplest solution is Agree. The transitive verb can certainly case-check its Accusative DO in situ, by Agree (84a).

Agree is subject to locality constraints. The AccDP should be the closest phrase to the verb, as in (84) below. Case can also be checked by Agree in the Acc + Inf construction. The analysis is very close to Chomsky's 1986 analysis, presented in (4.3.) above: It is the functional small *v* which has ϕ features and an Acc feature on the basis of which it functions as a probe, and can activate the infinitive subject as a goal. Generally, the Acc feature lacks the EPP property, it is weak, and does not require overt movement for checking. The case of the infinitive subject is checked in situ, even though it is structural case. No inner functional case projection is necessary. This analysis is appropriate whenever there are no reasons for overt raising.

- (84) a. vP



The motivation for overt raising may come from intervention effects, interpretative problems, deletion phenomena, etc, as discussed in section 3. Consider again an intervention configuration in (85). The adverb adjoined to the lower VP is a closer phrase to small ν than the infinitive subject, so that Agree is blocked. This forces the projection of the inner case projection FP. The lexical DP in SpecFP is now in an appropriate position for Agree and can be assigned case.



This analysis allows us to reinforce a more general conclusion on functional projections. Principles of economy of representation require the number of functional projections to be as reduced as possible.

An insightful position on functional projections, amply confirmed by this analysis, is that adopted by Giusti (1999), who proposes that Functional Projections should be viewed as last resort strategies. A functional projection is merged only if there is an unchecked formal feature which cannot be eliminated otherwise. For instance, whenever the case-assigner is the same as the θ -assigner, other things being equal, there is no reason why the case feature of the object should not be checked by Merge.

Conclusions

1. Transitive predications have a complex internal structure. The lexical VP is headed by a functional ν head. The latter θ -licenses the subject and checks the case of the object. Checking is done by Agree, since the Acc feature lacks the EPP property in English, so the Acc case may be checked in situ.

2. Case checking by Agree is subject to strict locality constraints. When Agree is blocked, a functional case projection, FP, may be required for case checking. This functional case projection is ν P internal in English.

3. When there is a case projection inside the ν P, it is possible to separate the θ position of the object (complement of V) from the case position, SpecFP.

4. The Acc + Inf construction often involves overt raising to the case position SpecFP of the main clause. This is an example of A-Movement, known as Subject to Object Raising. The case projection is VP internal and projected only as a last resort strategy.

5. Functional projections are last resort strategies.