
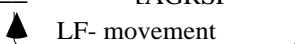


## Chapter 1

### Raising

#### 1. INTRODUCTION: THE ALTERNATION BETWEEN *SEEM* AND *BELIEVE*\*

Recapturing insights and arguments of Postal (1974), Chomsky (1995) and Lasnik (1994) argue that the subject of the infinitival  $\text{AGR}_{\text{SP}}$  in the complement of *believe* type verbs raises covertly to the  $\text{SpecAGR}_{\text{OP}}$  position of the matrix verb to check or license accusative case. As a result, Exceptional Case Marking ceases to be exceptional. This analysis allows for a generalization with respect to raising out of sentential complements. Overt raising-to-subject ( $\text{SpecAGR}_{\text{SP}}$ ) out of the sentential complement of verbs such as *seem* (1) is mirrored by covert raising-to-object ( $\text{SpecAGR}_{\text{OP}}$ ) out of the sentential complement of *believe* (2).

- (1) a. It seems [ $\text{CP}$  that Alfred eats his veggies]  
b. Alfred seems [ $\text{AGR}_{\text{SP}}$   $t_{\text{Alfred}}$  to eat his veggies]  

- (2) a. Sue believes [ $\text{CP}$  that Alfred ate his veggies]  
b. Sue believes [ $\text{AGROP}$  \_\_\_  $\text{AGRO}$  [ $\text{AGR}_{\text{SP}}$  Alfred to have eaten his veggies]]  


Raising-to-subject for *seem* and raising-to-object for *believe* proceed in a parallel fashion: in both cases, a case-feature in the matrix sentence is checked by an NP that originates in the embedded  $\text{AGR}_{\text{SP}}$ .

This syntactic parallelism becomes even more interesting when it is acknowledged that it corresponds to a semantic correspondence. With respect to their thematic roles, *seem* and *believe* can be analysed as converses of each other. The internal PP Experiencer argument of *seem* shows up in *believe* as an external argument:

- (3) a. It seemed *to all of us* that this was wrong  
b. *We all* believed that this was wrong

The sentence *we believe XP* should then be viewed as *to-us seems XP*. Similarly, the raising-to-subject verb *appear* has a semantic raising-to-object counterpart in *find* and *acknowledge*.<sup>1</sup>

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- (4) a. It appeared *to all of us* that this was wrong  
 b. This appeared *to all of us* to be wrong
- (5) a. *We all* found/ acknowledged that this was wrong  
 b. *We all* found/ acknowledged this to be wrong

This semantic correspondence is expressed morphologically in some languages. In Dutch, the verb *denken* ‘believe’ can be considered the accusative counterpart of the morphologically related *dunken* ‘seem’ which requires a dative:<sup>2</sup>

- (6) a. Ik denk [<sub>CP</sub> dat Jan ziek is]  
 I think that Jan is sick’
- b. Me           dunkt           [<sub>CP</sub> dat Jan ziek is]  
 to-me<sub>DAT</sub> think<sub>3P.SG</sub> that Jan sick is  
 ‘It seems to me that Jan is sick’

These semantic and morphological correspondences can be made syntactically explicit if Kayne’s (1993) and Hoekstra’s (1993) analyses of possessive *have* and *be* are taken into account. Formalizing ideas first put forward by Benveniste (1960), and following Freeze (1992), Kayne (1993) analyzes ‘possessive’ *be* with a dative possessor like Latin *esse* ‘be’, and English *have* in essentially the same way. The structure of *have/ be* includes a DP, the D° head of which can assign dative case. In Kayne’s (1993) analysis, the D° either does not incorporate and assigns dative case to the possessor *we* (Hungarian, Latin), or it incorporates and does not assign case to the possessor *we*, which moves up to be the (nominative) subject of *have* (English 8b). The structure in (7b) is a simplified version of the structure Kayne assumes for *be* in Hungarian, which has a dative possessive construction like the one illustrated here for Latin. The structure (8b) represents Kayne’s analysis of English *have*, which corresponds to *be* with an incorporated D°.

<sup>1</sup> There is also a causative lexical relation between raising-to-subject *appear* and raising-to-object verbs such as *show* and *prove*. *Show* and *prove* can be equated with ‘make appear’. In these cases, it is unclear why the internal dative Experiencer which can be expressed with tensed complements (*I showed/ proved to Bill that Rousseau was wrong*), is completely impossible in an ECM context (*I showed/ proved (\*to Bill) Rousseau to be wrong*).

<sup>2</sup> It should be noted that *dunken* ‘seem’ selects infinitival complements, and features raising to subject: *Jan dunkt mij een aardige jongen te zijn* ‘Jan seems to me to be a nice guy’. *Denken* ‘think’ can be used as a control verb: *Jan denkt weg te gaan* ‘John thinks to go away - John thinks of going away’ A similar construction is possible in certain dialects of English for *think*, without a corresponding morphological change: *Methinks that you are wrong*. In Icelandic, the verb corresponding to think may show up in ECM contexts with a dative Experiencer subject, while the subject of the infinitive is marked with Nominative case by the matrix verb (Sigurdsson 1989). In Swedish, the verb *tycka* ‘believe’, which is diachronically related to the Icelandic form in (i), has a nominative subject as in (ii):

- |    |                                |                           |                     |                          |             |
|----|--------------------------------|---------------------------|---------------------|--------------------------|-------------|
| i. | Mér                            | thykir/-ja                | their               | vera gáfadhir            | (Icelandic) |
|    | IDAT                           | think <sub>3SG/3PL</sub>  | they <sub>NOM</sub> | be gifted <sub>NOM</sub> |             |
|    | ‘I think they are gifted’      |                           |                     |                          |             |
| ii | Jag                            | tycker att de är begåvade |                     |                          | (Swedish)   |
|    | ‘I think that they are gifted’ |                           |                     |                          |             |

- (7) a. Sunt nobis mitia poma  
 Are us<sub>DAT</sub> many apples<sub>NOM</sub>  
 ‘We have many apples’  
 b. sunt [DP nobis [D°<sub>DAT</sub>] mitia poma ]
- (8) a. e be [DP we D°<sub>DAT</sub> [DP many apples]]  
 b. We have<sub>be+D°-DAT</sub> [DP t<sub>D°-DAT</sub> [DP many apples ]]
- 

Hoekstra (1993) shows that this analysis has another consequence. It ensures that incorporation of the Case assigning dative D°/P° into *be*, *ergo have*, provides that resulting *have* with an accusative Case feature that must be checked in SpecAGR<sub>OP</sub> of *have* by its ‘possessee’ NP complement. The ‘possessor’ NP checks nominative case in SpecAGR<sub>SP</sub>. The resulting structure is as in (9c). Incorporation of the dative D°/P° thus has two consequences: it adds an accusative feature to the verb *be*, which turns into *have*, and it allows the internal possessor argument to externalize as the subject of *have*, as illustrated in the resulting (9c).

- (9) a. <nom> BE [DP NP<sub>possessor</sub> D°/P°<sub>DAT</sub> NP<sub>possessee</sub>]  
 are us<sub>DAT</sub> many apples
- b. <nom> HAVE <acc> [DP NP<sub>possessor</sub> D°/P°<sub>DAT</sub> NP<sub>possessee</sub>]  
 (BE+DAT)
- 
- c. NP<sub>possessor</sub> HAVE<sub>BE+DAT</sub> NP<sub>possessee</sub> [ t<sub>possessor</sub> t<sub>DAT</sub> t<sub>possessee</sub> ]  
 We have many apples

The same analysis can now be applied to *seem* and *believe* in (3), and *appear* and *find* in (4--5). *Seem* is like *be* in that the Experiencer (possessor) is the internal complement of a dative D°/P°. Assuming the *have/be* analysis proposed by Hoekstra (1993) and Kayne (1993), incorporation of the dative D°/P° into *seem* again has the two consequences described above: it adds an accusative feature to the verb *seem*, which turns into *believe*, and it allows the internal Experiencer argument to externalize as the subject of *believe*. The same analysis applies, *mutatis mutandis*, to *appear* and *find*.

- (10) a. <nom> SEEM [DP NP<sub>EXP</sub> D°/P°<sub>DAT</sub> [CP ]]  
 It seemed to all of us [that this was wrong]
- b. <nom> BELIEVE <acc> [DP NP<sub>EXP</sub> D°/P°<sub>DAT</sub> [CP ]]  
 (SEEM+DATIVE)
- 
- c. NP<sub>possessor</sub> BELIEVE NP<sub>possessee</sub> [ t<sub>possessor</sub> t<sub>DAT</sub> t<sub>possessee</sub> ]  
 We all believed [that this was wrong]

In a language such as Dutch, this process takes place transparently, as illustrated by the alternation in (6).

Assuming that *seem* and *appear* are lexically and syntactically related to *believe* and *find* in the way sketched above, it now becomes clear why both the class of raising-to-subject verbs (*seem*, *appear*) and the class of raising-to-object verbs (Postal's (1974) B-verbs: *believe*, *consider*, *take*, *find*, *prove*, *show*) contain a semantically coherent set of verbs. If the class containing *seem* and *appear* is semantically coherent, it is understandable that the class of verbs with their 'accusative' counterparts (*believe*, *find*) and the set of 'augmented', 'causative' forms of *appear* (*show*, *prove* cf fn. 1) is also semantically coherent, since they can be reduced to the same lexical element.

## 2. THE SYNTAX OF THE COMPLEMENT OF *SEEM*/*BELIEVE*: A CRITICAL OVERVIEW

Let us now turn our attention to the syntax of the sentential complement of *seem*/*believe*. Exceptional Case Marking constructions as in (11--13) and raising constructions as in (14) have long been a challenge to a uniform approach of sentential complementation that would view all sentential complements as instances of the same type, namely CP. The standard analysis of these cases establishes a radical difference between the infinitival complementation in (11) with *want*-type verbs, and the infinitival complementation in (12--14) with verbs such as *believe*, *see* and *seem*. For the verbs *want* in (11ab), selection is uniform, since the tensed CP alternates with an untensed CP introduced by an optionally overt complementizer *for*. This complementizer assigns case to the NP in SpecAGR<sub>S</sub>P, independently of the infinitival morphology (Chomsky 1981:19).

- (11) a. Sue wants [CP that Alfred eats his veggies]  
       b. Sue wants [CP (for) Alfred to eat his veggies]
- (12) a. Sue believes [CP that Alfred ate his veggies]  
       b. Sue believes [AGR<sub>S</sub>P Alfred to have eaten his veggies]
- (13) a. Sue saw [CP that Alfred ate his veggies]  
       b. Sue saw [AGR<sub>S</sub>P Alfred eat his veggies]
- (14) a. It seems [CP that Alfred eats his veggies]  
       b. Alfred seems [AGR<sub>S</sub>P to eat his veggies]

For the complementation of *believe* and *see* type verbs as in (12--13), the answer is not that simple. Chomsky (1981) suggested to weaken the categorial unity of the sentential complement of *believe*-type verbs: a rule of S' deletion was introduced, which allowed the matrix verb to assign case to the subject of the infinitive, thereby licensing its presence by what was called Exceptional Case Marking. In later work and especially in the minimalist framework (Chomsky 1995), reference to a special rule of S' (CP) deletion is dropped, and *believe* type verbs are simply assumed to involve two categorial types of complementation, AGR<sub>S</sub>P (IP/ S) and CP. Following Postal (1974), Chomsky (1995) and Lasnik (1994) argue that the subject of the infinitival AGR<sub>S</sub>P complement of *believe* type verbs raises covertly to the SpecAGR<sub>O</sub>P position of the matrix verb to check or license accusative case.

Crucially, it is the presence of a 'reduced' sentential complement that allows the infinitival subject to move at LF to the matrix SpecAGR<sub>O</sub>P for case checking. Movement of the NP *Alfred* to the SpecAGR<sub>O</sub>P of *believe* in (12b) cannot proceed through a SpecCP. Moving the NP from the lower A- position to the higher A- position via the SpecCP A'- position would involve a case of 'improper movement' (Chomsky 1986, 1995). In the same way, raising verbs such as *seem* must alternate between CP complementation as in (14a) and

IP complementation as in (14b): raising to SpecAGR<sub>S</sub>P of *seem* in (14b) may not take place via SpecCP, again to avoid ‘improper movement’.

The alternation between CP complementation and AGR<sub>S</sub>P complementation is not simply an alternation of tensed (CP) versus untensed (AGR<sub>S</sub>P) complementation. Unlike English *believe* and *seem*, the French verbs *croire* ‘believe’ and *sembler* ‘seem’ allow for untensed CP complements involving control (15b--6b), besides the raising to subject (15a) or ECM (16a) construction:<sup>3</sup>

- (15) a. Alfred semble [AGR<sub>S</sub>P manger assez de légumes]  
 ‘Alfred seems to eat enough vegetables’  
 b. Il lui<sub>i</sub> semblait [CP [AGR<sub>S</sub>P PRO<sub>i</sub> avoir mangé assez de légumes]]  
 ‘It seemed to him to have eaten enough vegetables’
- (16) a. Voilà une personne [ O<sub>i</sub> que je crois [CP t’<sub>i</sub> [AGR<sub>S</sub>P t<sub>i</sub> avoir mangé  
 assez de légumes]]]  
 ‘This is the person who I believe to have eaten enough vegetables’  
 b. Alfred<sub>i</sub> croyait [CP [AGR<sub>S</sub>P PRO<sub>i</sub> avoir mangé assez de légumes]]

In Chomsky’s (1995) and Lasnik’s (1994) analysis, AGR<sub>S</sub>P selection seems to be linked in a rather arbitrary way to raising to SpecAGR<sub>O</sub>P (*believe*) or SpecAGR<sub>S</sub>P (*seem*). In essence, AGR<sub>S</sub>P selection is needed because otherwise an additional projection would ‘get in the way’ of raising to a case checking position. The alternation between untensed (controlled) CP and untensed (raising) AGR<sub>S</sub>P as complements of *believe* and *seem* verbs is a mere stipulation that has to be recorded in the lexical entry of these verbs. Moreover, why would it be the case that only untensed sentential complements can be either selected as, or ‘reduced’ to, AGR<sub>S</sub>P? It thus appears that this rather arbitrary difference in selection of the type of sentential complement is the only thing that drives raising to AGR<sub>S</sub>P or AGR<sub>O</sub>P: AGR<sub>S</sub>P selection by *believe* or *seem* necessarily triggers raising.

For *believe* type verbs, an alternative analysis has been proposed that does not make use of AGR<sub>S</sub>P complementation. Kayne (1981b) argues for an analysis of ECM with *believe*-type verbs that is close to the analysis proposed for *want*-type verbs. Kayne (1981b) proposes that (2b) involves a CP with a zero P-like C° that assigns case to the infinitival subject. French does not have such a Case-assigning C°, forcing the infinitival subject to *Wh*-move to the embedded SpecCP where V° assigns Case across CP. As a result, French does not display ECM with the subject of the infinitive in the embedded SpecIP position, since in that case the NP subject of the infinitive is too low to receive case from the governing V°.

- (17) a. Voilà la linguiste [ O<sub>i</sub> que je crois [CP t’<sub>i</sub> [IP t<sub>i</sub> avoir été mal comprise]]  
 ‘This is the linguist who I think to have been misunderstood’  
 b. \* Je crois cette linguiste avoir été mal comprise  
 ‘I believe that linguist to have been misunderstood’

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<sup>3</sup> In this paper, I will use both the terms ‘ECM’ and ‘raising to object’. ECM will be used as a descriptive term to refer to infinitival constructions with an overt subject in the complement of a matrix verb. It will be shown that such constructions do not always involve raising to object position (SpecAGR<sub>O</sub>P), as e.g. in French. Therefore, the term ‘raising to object’ will be restricted to those infinitival constructions with an overt subject which uncontroversibly involve this movement operation.

Updating Kayne's analysis in a minimalist framework proves quite difficult. Accusative case-assignment to the right by  $V^{\circ}$  has been reduced to case-checking in a Spec-Head configuration after movement to SpecAGR<sub>OP</sub>. If Kayne's (1981b) analysis were to be adopted in a minimalist framework, movement of the subject of the infinitive to SpecAGR<sub>OP</sub>, an A- position, would have to transit through SpecCP, an A'- position, resulting in improper movement.

Assuming that this problem can be solved, a minimalist perspective requires Kayne's (1981b) Case-assignment by  $V^{\circ}$  to the embedded subject to be reinterpreted as movement to SpecAGR<sub>OP</sub>. This predicts both object agreement on the matrix  $V^{\circ}$  and the possibility of further movement to SpecAGR<sub>SP</sub> in matrix passives where AGR<sub>O</sub> is 'defective'. Let us briefly investigate both predictions.

It is well known that the presence of a trace in SpecAGR<sub>OP</sub> can trigger overt agreement on the participle in French in the relevant dialects, while LF movement of an NP does not trigger participle agreement (Kayne 1985a, 1989a, Chomsky 1991, Chomsky 1995).

- (18) a. La voiture que j'ai prise  
           'The car that I have taken.FEM'  
       b. J'ai pris(\*e) la voiture  
           I have taken.(FEM) the car

As Ruwet (1982) has first pointed out, the dialects that obligatorily trigger agreement on the participle in (18) never allow agreement of the infinitival subject with the matrix verb in ECM contexts:

- (19)       Voilà la candidate qu'on a dit(\*e) être la meilleure de toutes  
           'This is the candidate that they have said to be the best of all'

Bouchard (1987) has pointed out that in SC contexts, the relevant agreement does obtain:

- (20)       Voilà la femme qu'on a dite la plus intelligente de son époque  
           This is the woman that they have said the most intelligent.FEM of her time  
           'This is the woman who was considered the most intelligent of her time'

This suggests that the problem only involves the infinitival construction with *believe* type verbs, and not ECM in general.

A second indication that the subject of the infinitive in French does not move to SpecAGR<sub>OP</sub> at any point in the derivation comes from passive. Unlike in English, the subject of the infinitive in French cannot be passivized in ECM constructions with *believe*:

- (21)       \* Cette candidate était dite/ crue être la meilleure de toutes  
           'This candidate was said/ believed to be the best of all'

The simplest analysis for the ungrammaticality of this sentence is that the subject of the infinitive never raises to SpecAGR<sub>OP</sub> in French. As a result, it can never be sensitive to the 'defective' character of AGR<sub>OP</sub> in passives which triggers movement to the matrix SpecAGR<sub>SP</sub> position. The absence of agreement on the passive participle and the absence of passive can then be related in a straightforward way: the subject of the infinitive does not

move to the matrix SpecAGR<sub>OP</sub> at any point in the derivation. The question then of course arises as to how the *Wh*- moved or restrictively focused subjects of the infinitives in (17a) and (19) acquire case in French. I will come back to this problem in section 6.

Rizzi (1990a:52) provides a recent update of Kayne's analysis by assuming that the acceptability of (17a) is related to an infinitival AGR<sub>C</sub><sup>o</sup> that can properly govern and assign case to the trace in the infinitival SpecIP if it is licensed by an appropriate specifier. Rizzi's (1990a) reinterpretation of Kayne's analysis escapes some of the problems pointed out: since case is assigned inside the CP by AGR<sub>C</sub><sup>o</sup>, the subject of the infinitive will never have to move through the matrix SpecAGR<sub>OP</sub>. As a result, improper movement is avoided, and the analysis predicts the absence of participle agreement and passive in the matrix clause. However, in a minimalist framework, all structural case must be assigned in a Spec-Head configuration. This means that AGR<sub>C</sub><sup>o</sup> would have to assign case to the subject of the infinitive in SpecAGR<sub>CP</sub>. Although this analysis is not unlikely (cf. infra section 6), Rizzi (1990a) does not offer any independent evidence for this claim. As a result, the case-assigning properties of AGR<sub>C</sub><sup>o</sup> amount to a mere stipulation in Rizzi's account.

Both Kayne's and Rizzi's analysis are also empirically inadequate. Pollock (1985) has shown that infinitival subjects can stay downstairs under restrictive Focus (see also Postal 1993). The same seems to be true for 'heavy' NPs without overt restrictive Focus:

- (22) a. Je crois n'avoir été condamnés que trois de mes amis (Pollock 1985)  
 'I believe only to have been condemned three of my friends'  
 b. Je crois avoir été condamnés plusieurs des amis  
 qui avaient été arrêtés en même temps que moi  
 'I believe to have been condemned several of the friends that  
 had been arrested at the same time I was'

Pollock (1985) also shows that the embedded CP in (22a) actually involves an impersonal construction where the NP *trois de mes amis* receives a non-nominative case. Lasnik (1993) argues that the Case assigned to objects in impersonal constructions is a partitive case which is checked by a passive functional head (see also Rooryck 1995). Such an analysis is confirmed by data such as (23), which show that the 'heavy' NP displays indefiniteness effects typical of impersonal constructions:

- (23) \*Je croyais avoir été condamnée ma tante préférée de Besogne-en-Semoule  
 'I believed to have been condemned my favorite aunt from Besogne-en-Semoule'

In the framework of Kayne's (1981b) and Rizzi's (1990a) analyses, one would be forced to say that the impersonal subject *pro* in these constructions has to be *Wh*- moved in order to get case from the higher V<sup>o</sup> or the embedded AGR<sub>C</sub><sup>o</sup>. Besides the fact that such a solution would be quite unlikely, the question is why constructions such as (22) are allowed in this context.<sup>4</sup>

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<sup>4</sup> Pollock moreover shows that there are actually two dialects in French with respect to this construction. One dialect restricts the ECM construction to CPs in which the extracted (17a) or restrictively focused (22) subject is an internal argument of the embedded verb. A large number of French speakers have the following contrasts (examples from Pollock 1985:298(24)):

- i. L'homme que je croyais être arrivé/ entré/ avoir disparu  
 'The man who I thought to have arrived/ come in/ disappeared'

More importantly, the Focus-related restrictions on the subject of ECM constructions in French reported by Kayne (1981b) and Pollock (1985) are very similar to restrictions that occur with a specific subset of English ECM verbs. Postal (1974) was the first to point out that there are a number of verbs in English that are semantically very close to *believe* and *find*, but nevertheless syntactically behave in a startlingly different way. Postal (1974) observes that a number of verbs in English such as *estimate*, *assume*, *assure*, *admit*, *concede*, *demonstrate*, *determine*, *discover*, *reveal*, *think*, *know*, *guess*, *feel* etc. can support ECM constructions if the subject of the infinitive is Focused by either left dislocation, heavy NP shift to the right, or *Wh*-movement. Postal terms this restriction on ECM the *Derived Object Constraint* (DOC). The ECM construction is sharply ungrammatical if the subject of the infinitive remains in its canonical subject position as in (27). I will therefore call the construction with *estimate* type verbs the ECM-with-Focus construction. Examples in (24) through (27) come from Postal (1974:298--99(20--32)).

- (24) Bill's dinosaur, I estimate to be 175 feet long  
 (25) I estimated to be over 175 feet long all the dinosaurs which we caught yesterday in Central Park  
 (26) Which dinosaur did you estimate to be 175 feet long?  
 (27) \* They estimated Bill's dinosaur to be 175 feet long

Interestingly, English speakers report a great deal of variation with respect to the exact set of verbs that observe the DOC- type/ ECM-with-Focus pattern, or the *believe* pattern without Focus.<sup>5</sup> Moreover, the English verbs that support the ECM-with-Focus construction are in some cases semantically very close to the verbs that have ECM constructions without Focus effects. According to Postal (1974), a verb such as *think* supports ECM with Focus effects, while its synonym *believe* has no such Focus effects. Similarly, Postal (1974) has

- 
- ii. \* L'homme que je croyais avoir téléphoné/ toussé/ plongé dans l'eau  
 'The man who I thought to have telephoned/ coughed / dived into the water'

Other speakers report no contrast between both types of sentences. It is clear that an appropriate analysis of ECM in French must provide an account for this variation. We will come back to this issue in section 6.

<sup>5</sup> Kayne (1981b: 360n.15) reports that he accepts almost all the verbs cited by Postal (1974:305) in a nonfocused *believe* type construction such as (i):

- i. I believe/ acknowledge/ have determined John to be the most intelligent of all  
 Kayne (1984:5) nevertheless observes the DOC with the verb *assure* (see also Postal 1993):  
 ii. John, who I assure you to be the best/ \*I assure you John to be the best  
 Postal lists *assume*, as a verb which only supports ECM-with-Focus. Nevertheless, the following example can be found:  
 iii. 'In childhood, when we assume the world to have been elaborately arrayed for our own benefit (...)' John Updike, *The Afterlife and other stories*, p.46

One reviewer for this article emphatically sides with Kayne's judgments, urging me to disregard Postal's data as 'not robust enough to include in an article'. I think this is besides the point: even if variation were limited to a difference between *assure* on one hand and all other *believe* type verbs on the other, as for Kayne and the reviewer, the facts still needs to be accounted for. Moreover, the question would still remain as to why Postal speaks his variety of English. Marginalizing Postal's variety of English won't make the facts go away. Whatever the verb-specific variation among speakers, the basic facts are clear for most speakers: one set of verbs allows for 'normal' ECM (*believe*), while an additional, more speaker-specific, set of verbs supports the ECM-with-Focus construction (*assure*). In this article, an analysis will be pursued which not only accounts for both types of data, 'Focusless ECM' and 'ECM with Focus', but which also derives the individual variation among speakers on this point from a single syntactic difference (cf. also Postal 1993:49fn.4).



*find* as a *bona fide* ECM verb, while its semantic near synonym *discover* only supports ECM with Focus effects.

- (28) a. Philomène thought/ discovered to have been overrated  
all the novels that had been written after Proust  
b. Philomène believed/ found/ \*thought/ \*discovered  
all those novels to have been overrated

This of course raises the question as to what property *believe* and *find* have that English *think*, *discover*, and French *croire*, ‘believe’, do not possess. From a slightly different perspective, the question arises why Focus interferes with raising-to-object in the first place. More generally, one might also wonder what property licenses ECM for the entire class of verbs displaying ECM, with Focus effects or not.

Summing up this review, it must be concluded that ECM with verbs such as *believe* is neither adequately described by an analysis in terms of AGR<sub>SP</sub> selection (Chomsky 1981, 1995), nor by an approach in terms of empty case-assigning complementizers (Kayne 1981b). Nevertheless, both analyses have some attractive properties that should be maintained in any explanatory account of sentential complementation with *believe* and *seem*. Kayne’s (1981b) analysis rightly insists on the idea that selection of sentential complements should be uniform CP selection. Postal’s (1974), Chomsky’s (1995), and Lasnik’s (1994) analysis allow for a generalization with respect to raising out of the sentential complements of *seem* and *believe*, an analysis that is all the more attractive since *seem* and *believe* arguably are lexically related in the way sketched above. Finally, *believe* type verbs in both French and English seem to display intricate Focus effects on the subject of their sentential complement that cannot be explained by the standard analyses.

As a result, there are two important problems that have to be investigated with respect to raising out of sentential complements of *seem/ believe* type verbs:

- (29) i. If sentential complementation uniformly involves CPs, how can raising out of CP complements to the matrix SpecAGR<sub>SP</sub>/OP of *seem* and *believe* be achieved in a parallel fashion without producing ‘improper movement’?  
ii. What does Focus have to do with raising-to-object (=SpecAGR<sub>OP</sub>)? Why does ECM require the subject of the infinitive to be Focused either generally (French *croire*, *dire*) or with a large, variable subset of DOC verbs (English *think*, *discover*, *estimate* etc.)? Why is there a contrast between ECM with Focus (*think*, *discover*, *assure*) and ‘Focusless’ ECM (*believe*, *take*, *consider*, *find*) in the first place?

In the remainder of this paper, I will show that both problems are much more closely related than has hitherto been assumed.

### 3. TWO-STEP RAISING: IP MOVES TO SPEC<sub>CP</sub> BEFORE SUBJECT MOVEMENT

At least technically, the problem in (29i) can be solved quite easily. In order to maintain uniform CP complementation, it can be proposed that English raising constructions involve movement of the infinitival AGR<sub>SP</sub> to Spec<sub>CP</sub>. This analysis is quite reminiscent of Baker’s (1988) analysis of French causatives, where VP is moved to Spec<sub>CP</sub> of the CP complement

of *faire* ‘make’. Once AGR<sub>S</sub>P is in SpecCP, the infinitival subject can move out of the sentential complement to SpecAGR<sub>S</sub>P. This yields the following configuration:

- (30) [AGR<sub>S</sub>P Alfred seems [VP t<sub>seem</sub> [CP [AGR<sub>S</sub>P t<sub>Alfred</sub> to be smoking] C° t<sub>AGR<sub>S</sub>P</sub> ]]]

The configuration for *believe* should be identical to (30) as far as overt movement of the embedded AGR<sub>S</sub>P to SpecCP is concerned. The exact nature of the subsequent movement of the embedded subject is more controversial. Following Chomsky (1995) and Lasnik (1993), the embedded subject covertly moves to SpecAGR<sub>O</sub>P in order to check case. This movement will only take place when the verb moves to AGR<sub>O</sub> at LF to check its own features, for reasons of equidistance.<sup>6</sup>

However, there is cogent evidence that ECM constructions actually involve overt movement to SpecAGR<sub>O</sub>P. Postal (1974) has shown convincingly that the subject of the infinitive can be placed before adverbs referring to the matrix verb:

- (31) a. They found Germany recently to have been justified in sinking the *Lusitania*  
 b. I don’t find Mary anymore to be foolish  
 c. I’ve believed John for a long time now to be a liar (Kayne 1985b:114(70))

If the subject of the infinitive were to stay inside the CP before LF, it would be very difficult to account for the fact that the adverbs modifying the matrix verb somehow show up in this embedded CP. Vanden Wyngaerd (1989) argues that the subject of the infinitive in (31) moves overtly to SpecAGR<sub>O</sub>P in English. This straightforwardly derives the facts in (31). The matrix adverbs in (31) are arguably adjoined to the matrix VP, and the subject of the infinitive overtly moves beyond them to SpecAGR<sub>O</sub>P. This account requires the additional assumption that the matrix verbs *find* and *believe* in (31), (and verbs generally) move to a functional X° position beyond AGR<sub>O</sub>°. One argument for movement of verbs in English beyond AGR<sub>O</sub>°, was put forward by Pesetsky (1989) and Costa (1994). Pollock (1989) justifies the low position of verbs in English by the fact that adverbs occur in front of

<sup>6</sup> In Italian, the difference between a controlled CP and the raising construction is morphologically marked by the obligatory presence of a complementizer in the control construction (Kayne 1984):

- i. Gianni sembra (\*di) essere partito  
 ‘Gianni seems di to have left’  
 ii. mi<sub>i</sub> sembra [CP \*(di) PRO<sub>i</sub> aver capito]  
 ‘to-me it seems to have understood’

In Romanian, raising out of tensed subjunctive complements requires the absence of the subjunctive complementizer *ca*, while its nonraised counterpart requires the presence of *ca* (Motapanyane 1994):

- iii. Studentii par (\*ca) sa organizeze o greva  
 students-the seem<sub>3PL</sub> that organize<sub>SUBJ,3PL</sub> a strike  
 ‘The students seem to organize a strike’  
 iv. Se pare ca studentii organizeaza o greva  
 Self seems<sub>3SG</sub> that students organize<sub>IND,3PL</sub> a strike

Such alternations are usually taken to be an indication that CP deletion/ AGR<sub>S</sub>P selection has occurred. The idea that raising constructions involve movement of the infinitival AGR<sub>S</sub>P into SpecCP allows for another explanation. The absence of the complementizer in raising constructions simply is an instance of the well known (but poorly understood) restriction against lexically filling both C° and SpecCP, the so-called ‘doubly filled COMP filter’.

it and cannot intervene between the verb and the direct object. However, Pesetsky (1989) shows that adverbs can intervene between verbs and PPs:

- (32) a. \*Mickey visited quietly his parents  
 b. Mickey talked slowly to Gary  
 (33) a. \*Chris hit quickly the dog  
 b. Chris walked quickly down the street

This suggests that the absence of adverbs between verbs and their direct object is due to an adjacency requirement. This adjacency requirement can be derived from the fact that objects in English always move overtly to SpecAGRO<sub>P</sub>, with the verb sitting in a functional head, provisionally labeled X<sup>o</sup>, sitting directly above AGR<sub>O</sub>P. Costa (1994, in preparation) offers various arguments to justify the existence of this position. The structure of ECM *believe* then must be represented as in (34), with overt movement of AGR<sub>S</sub>P to SpecCP feeding overt movement of the subject of that AGR<sub>S</sub>P to the matrix SpecAGRO<sub>P</sub>:

- (34)  
 Sue [<sub>XP</sub> believes [<sub>AGROP</sub> Alfred [<sub>VP</sub> t<sub>believe</sub> [<sub>CP</sub> [<sub>AGRSP</sub> t<sub>Alfred</sub> to be smoking] C<sup>o</sup> t<sub>AGRSP</sub>]]]

It can be concluded that both raising-to-subject (SpecAGR<sub>S</sub>P) and raising-to-object (SpecAGRO<sub>P</sub>) involve overt movement. In section 5, it will be shown that this analysis allows for an explanation of the DOC facts adduced by Postal (1974, 1993).

Nothing in the minimalist framework prevents movement out of the SpecAGR<sub>S</sub>P in SpecCP. The movement involved here resembles most Torrego's (1985) extraction facts out of a *Wh*- NP in SpecCP. Chomsky (1986:26) states that a matrix verb must be allowed to L-mark the specifier in a structure such as (35) in order to explain sentences such as (36):

- (35) V [<sub>CP</sub> *Wh*- phrase C IP] (=Chomsky 1986a:(50))  
 (36) a. Éste es el autor [del que]<sub>i</sub> no sabemos [<sub>CP</sub> [qué libros t<sub>i</sub>] leer]  
 'This is the author by whom we don't know what books to read'  
 (=Chomsky 1986a:(48a), citing Torrego 1985)  
 b. ¿De qué autora no sabes qué traducciones han ganado premios internacionales?  
 'By which author don't you know what translations have won international awards?' (=Chomsky 1986a:(49b), citing Torrego 1985)

Chomsky (1986a) states that if the verb *saber* 'know' in (36) does not L-mark the *Wh*-element in SpecCP, the sentences should be ruled out by subjacency, since the *Wh*-element in SpecCP, and by inheritance CP itself, would then be Barriers to movement. The sentence (36a) contrasts with (37), where the NP *varias traducciones* is not in SpecCP, hence cannot be L-marked by *saber* 'know', and does not allow for extraction:

- (37) \* Ésta es la autora [de la que]<sub>i</sub> [<sub>IP</sub> [varias traducciones t<sub>i</sub>] han ganado premios internacionales] (= Chomsky 1986a:26(49a))  
 'This is the author by whom several translations have won international awards'

The same analysis remains valid in a minimalist context. Chomsky (1995) crucially appeals to LF-extraction out of SpecCP in the context of Binding. LF movement of *self* (LF

cliticization or  $CL_{LF}$ ) out of the *Wh*- NP accounts for the fact that the anaphor can be bound by the matrix subject in (38):

- (38) John wondered [which pictures of himself] Bill saw *t*  
 (=Chomsky 1995:Ch 3(36))

The configurations proposed in (31--34) suggest that this type of extraction is also relevant in raising contexts. Extraction of the subject NP out of the infinitival CP is possible only after  $AGR_{SP}$  moves to  $SpecCP$  in (31--34). Importantly, improper movement of the subject of the infinitive is avoided, since the subject does not itself move from an  $A'$ -position back into an  $A$ -position. Consequently, it is predicted that the subject of an infinitive cannot be extracted from an infinitival CP unless  $AGR_{SP}$  moves to  $SpecCP$ . Uniform CP complementation with both raising-to-subject (*seem*) and raising-to-object (*believe*) verbs can be maintained, while allowing the subject of the infinitive to move out of the infinitival CP to respectively  $SpecAGR_{SP}$  and  $SpecAGR_{OP}$  in a parallel fashion.

However, as the analysis stands now, it seems to violate the minimalist principle of Greed, which stipulates that an element cannot move just for the sake of another element. In this case, movement of the embedded  $AGR_{SP}$  to  $SpecCP$  seems to be invoked for the sole purpose of allowing the subject NP of the infinitive in (31--34) to escape to the higher  $SpecSpecAGR_{S/OP}$  position. In other words, the analysis proposed does not independently motivate movement of the embedded  $AGR_{SP}$  to  $SpecCP$ .

I would nevertheless like to argue that movement of the embedded  $AGR_{SP}$  to  $SpecCP$  is independently motivated by a [+Focus] feature of  $C^\circ$  that must be checked by  $AGR_{SP}$  via movement to  $SpecCP$ . More precisely, I want to argue that *seem* and *believe* select a [+Focus]  $C^\circ$  in raising contexts which involves event-focus rather than argument-focus. This [+Focus] feature is an optional feature of  $C^\circ$ , in the same way that [+*Wh*-] is an optional feature on the  $C^\circ$  selected by verbs such as *know* and *ask* (*I know that X/ I know how X*). For now, I have to stipulate that this feature is only active in the case of infinitival CPs. I will come back to this stipulation later.

That this type of event-focus exists should be relatively uncontroversial. English displays Focus constructions which at first sight involve movement of VP to the higher  $SpecCP$ .

- (39) a. Eat an apple, I was told that Sue will/ can/ should/ must  
 b. \* Eaten an apple, I was told that Sue has

In (39a), it can be assumed that the projection being focused is in fact an infinitival projection that moves to the [+Focus] CP of the higher clause. This type of movement is only licensed if infinitival projection is governed by a  $T^\circ$  that involves modal auxiliaries such as *will*, *can*, *should*. The combination of a [+Focus]  $C^\circ$  in the higher clause, and a [+Modal]  $T^\circ$  governing the infinitival projection seem to be the driving forces behind movement of this projection to the higher  $SpecCP$ .

The question now arises as to whether the same type of movement could apply to infinitival  $AGR_{SP}$  if it is governed by an appropriate [+Modal] head. Indeed, it is not likely that focus as in (39a) to be an exclusive property of the infinitival projection, but rather a property of English infinitival projections in general. The question then becomes: when does a  $C^\circ$  governing  $AGR_{SP}$  have [+Modal] properties such that it can govern the trace of infinitival  $AGR_{SP}$ , thereby allowing  $AGR_{SP}$  to move? I would like to suggest that the untensed  $C^\circ$  governed by *believe* has this licensing property. First of all, if the infinitival

complement of *believe* has a  $C^\circ$ , this  $C^\circ$  must be untensed since it is well known that tensed and untensed  $C^\circ$ s are in complementary distribution with tensed and untensed  $T^\circ$ . Now an untensed  $C^\circ$  already involves some modal property, namely ‘unrealized’ tense (Guillaume 1929, Bresnan 1972, Stowell 1982). This property is of course not a sufficient condition to license the trace of  $AGR_{SP}$ , otherwise control contexts could always license ECM, which is of course not the case. Clearly, selection of  $C^\circ$  by *believe* plays a role in ‘reinforcing’ the modal property of  $C^\circ$ . The [+Focus] selection of the complement  $C^\circ$  by *believe*, together with the [-tensed] modal property of  $C^\circ$ , might be sufficient to license the trace of  $AGR_{SP}$  in the same way modal auxiliaries license the trace of the infinitival projection in (39a).

If it is accepted that a ‘strong’ [+Focus] feature in  $C^\circ$  is what motivates movement of  $AGR_{SP}$  to SpecCP, it is possible to provide an explanation for the questions formulated in (29ii): why does ECM require the subject of the infinitive to be Focused either generally (French *croire, dire*) or with a large subset set of ECM verbs (English *think, discover, estimate*) and why does only a small subset of ECM verbs have ‘non-Focus’ ECM (*believe, take, consider, find*) with the subject of the infinitive in its canonical position between the matrix verb and the infinitive. The tentative answer to these questions is that Focus is what ECM with *believe* and *seem* type verbs is all about. The generalization we are led to is that all ECM verbs seem to have the property of focusing on elements of the embedded CP via a [+Focus]  $C^\circ$ . French *croire, dire* and English *think, discover, estimate* must have focus on the subject of the embedded infinitive. The apparently ‘Focusless’ *bona fide* ECM verbs such as *believe, take, consider, find* and *seem, appear, be likely* in fact do display a ‘hidden’ type of Focus, namely event Focus on  $AGR_{SP}$ , which moves to SpecCP and thereby enables subsequent movement of the subject of the infinitive into the matrix Spec $AGR_{OP}$ .

Reference to a [+Focus] feature to motivate movement of  $AGR_{SP}$  to SpecCP seems to allow for a first rough answer to the question what Focus and raising-to-object (= raising to Spec $AGR_{OP}$ ) have in common. However, the fact that the trace of  $AGR_{SP}$  can be licensed by a [+Focus]  $C^\circ$  in the same way as the trace of the infinitival projection in the modal context of (39a) is not enough evidence to conclude that Focus-movement to SpecCP indeed occurs in raising to Spec $AGR_{OP}$  contexts with *believe* and *seem*. What does it mean to have Focus on the event in ECM contexts with *believe*? It is not immediately clear what the semantic difference is in terms of Focus between the tensed ‘unfocused’ sentential complement in (40), and the ‘focused’ ECM sentential complement in (41).

- (40) a. Sue believes [ $CP$   $C_{-FOC}$  [ $AGR_{SP}$  that Alfred ate his veggies]]  
 b. Sue believes [ $CP$  [ $AGR_{SP}$  Alfred to have eaten his veggies]]  $C_{+FOC}$   $t_{AGR_{SP}}$  ]
- (41) a. It seems [ $CP$  that  $C_{-FOC}$  [ $AGR_{SP}$  Alfred ate his veggies]]  
 b. Alfred seems [ $CP$  [ $AGR_{SP}$  to have eaten his veggies]]  $C_{+FOC}$   $t_{AGR_{SP}}$  ]

As a result, the analysis proposed seems highly counterintuitive, despite the generalization it allows for. If the analysis advocated here is to be maintained, the type of Focus involved in  $AGR_{SP}$  movement to SpecCP and its relation to the semantics of *seem* and *believe* must be investigated more closely. In other words, the first step leading to subsequent raising of subject NPs out of infinitival complements must be further motivated.

#### 4. THE LIKENESS OF *SEEM*: COMPARISON AND FOCUS

In order to motivate Focus movement of  $AGR_{SP}$  to SpecCP, I would like to take a closer look at the morphology and the semantics of the verb *seem*. The principal semantic

feature of *seem* seems to be comparison. In many languages, the verb stem of verbs of comparison and *seem* are identical: Dutch *lijken* ‘seem’ and *vergelijken* ‘compare’, French *sembler* ‘seem’ and *ressembler* ‘resemble’, *paraître* ‘seem’ and *comparer* ‘compare’, Spanish *parecer* ‘seem’ and *comparar* ‘compare’. In English, the raising verb *be likely* is derived from *like* which also yields the adjective *alike*, and the comparative verb *liken*. *Like* also shows up as the obligatory complementizer of the verb *look* in a usage that is semantically close to *seem*:<sup>7</sup>

(42) It looks like/ as if/ \*that Alfred has eaten his veggies

Even English *seem* has a syntactic relation to *like*: *seem* might be the only verb that can select the complementizers *that*, *as if*, and the complementizer *like*: The analysis of *like* as a complementizer is supported by the fact that it cannot cooccur with *that*.

(43) a. It seems that/ like/ as if Alfred has eaten his veggies  
b. \* It seems that like/ like that Alfred has eaten his veggies

Also note the use of comparative *as* in the complementizer *as if*:<sup>8</sup> The complementizer *as if* by itself, in combination with the verb *be*, is more or less equivalent to *seem* as shown in (44a). Interestingly, similar considerations apply to expressions expressing the meaning of *believe* as in (44bc):

(44) a. It is as if Alfred has eaten his veggies  
b. I was, like: they are really good (Valleyspeak)  
c. Ik heb zoiets van: Jan moet maar oprotten (Dutch)  
I have such-something of: Jan should hit the road  
'I think that Jan should hit the road'

The sentences (44bc) involve a sentential complement expressing direct speech. Whatever their exact syntactic representation, it is important to note that they overtly involve the verbs *be* or *have*, and an element of comparison, *like* in (44b), and *zo* in Dutch (44c). The Dutch sentence in (44c) also seems to involve the object expletive *iets*. Importantly, these cases provide further evidence for the analysis put forth in section 1 that *believe* is the accusative counterpart of *seem*.

In more traditional accounts of raising with *seem* type verbs, this morphological relation of *seem* with verbs of comparison is systematically disregarded. The morphological evidence strongly suggests that the semantics of *seem* should involve comparison at some level. In this analysis, I would like to represent the comparative semantics of *seem* syntactically. If this is correct, there must be two items to be compared. In a structure like (43a), this is relatively simple. Following Bennis (1986), and Moro (1992), I argue that subject *it* in (43a) is not a

<sup>7</sup> cf also Latin *seem*, expressed as passive: *Mihi videtur* ‘to-me (it) is-seen’ (cf. infra).

<sup>8</sup> The possibility to use ‘comparative’ complementizers such as *as if* seems to be subject to crosslinguistic variation. Dutch allows for it while French does not:

i. Het lijkt wel alsof Alfred zijn groenten opgegeten heeft (Dutch)  
ii. Il semble \*comme si/ que Alfred a mangé ses légumes (French)  
'It seems as if Alfred has eaten his veggies'

dummy element marking the subject position. Moro (1992) analyzes *it* as the predicate of the SC complement of *seem* (cf Moro (1992) for arguments and discussion). The pronoun *it* is necessary for Full Interpretation, and moves to the SpecIP position of *seem* as an instance of predicate inversion. Under the analysis developed here, the pronoun *it* should be analyzed as a deictic pronoun, referring to an event at hand that is compared to the event expressed by the sentential complement of *seem*. The sentence (45a) then can be semantically glossed as (45b):

- (45) a. It *seems* that/ like/ as if Alfred has eaten his veggies  
 b. There is a contextually salient event (= it) that *is similar to* or *resembles*  
 a (typical) event in which Alfred has eaten his veggies

The pronoun *it* functions as a pro-CP. This property can probably be derived through the predicative nature of the SC, which mirrors the event properties of the CP onto *it*. Moro's SC analysis can now be viewed as a case of predicate Focus.<sup>9</sup> Following Partee (1991), Focus can informally be taken to involve implicit reference to a set of which one member is given saliency. In the case of *seem*, I argue that the set referred to consists of two members, one of which is given saliency by predicate inversion/ Focus, namely deictic *it*. It is crucial to emphasize that predicate inversion/ Focus is triggered by an element in the matrix clause in this case. Pro-CP *it* is not a dummy, but an essential element for the interpretation of *seem* which compares two overt elements. As a result, this analysis immediately explains why *it* cannot be replaced by the CP complement (\**That A. has eaten his veggies seems*): such a replacement would eliminate an essential member of the comparison set.

A similar analysis can be given of *appear*. I would like to argue that *appear* also involves a comparison between two events, but that it does so on a different plane. *Appear* basically says that the event the pro-CP *it* refers to is about to manifest itself as a true case of the CP complement. Sticking more closely to the analysis of both *seem* and *appear* in terms of comparison, one might say that *appear* means 'resemble to the point of becoming identical with'. However, *appear* should not be viewed as an aspectually imperfective marker of predication: *appear* is not quite to *seem* what *become* is to *be*, since *appear* does not allow for the progressive. In this, *appear* is like *seem*, but unlike *become*. Rather, both *seem* and *appear* are stative, but while *seem* is just stative, *appear* should be viewed as referring to a resultative endstate. In keeping with the gloss given in (45b), an appropriate semantics for *appear* could be represented as in (46bc):

- (46) a. It *appears* that Alfred has eaten his veggies

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<sup>9</sup> In the analysis of *seem* advocated here, I will remain noncommittal as to the exact relative positions of the CP and *it* within the SC. Moro (1992) argues that *it* is in the complement position of the SC. Heycock (1992) advances arguments showing that *it* might be in the subject position of the SC. If *it* is the subject of the SC and the CP its predicate, the semantic interpretation of the CP complement in (45) as a type, i.e. a *typical* event, may be derived from the fact that predicates denote properties, not individuals (tokens).

One reviewer raises a more compelling question for this analysis. If *it* is not an expletive, but a pronoun referring to the situation or event at hand, why can *it* not be replaced by any other expression? For example, if *It seems that John is sick* has the same structure as *It looks like the flu*, comparing referential elements (situations, things), why is there a contrast between \**This seems that John is sick* and *This looks like the flu*? The answer to this question is not entirely clear to me at this point. However, the following should be observed. The analysis proposed here assumes that 'expletive' *it* is coreferential with the CP in complement position of *seem*. In cases where *it* is coreferential with NPs, as in *John read the book and Mary read it too*, it is rather difficult to replace *it* by another expression as well. I suggest that both facts are related.

- b. There is an event that *resembles to the point of becoming identical with it*, an event in which Alfred has eaten his veggies
- c. There is an event that *has reached the endstate of being identical to*, an event in which Alfred has eaten his veggies

Again, there is some morphological evidence for a semantics in which *appear* receives an analysis close to that of *seem*. Dutch *blijken* ‘appear’ seems to be composed of *lijken* ‘seem’ and the morpheme *be-*, which has been described as a resultative marker by Mulder (1992). Dutch *blijken* ‘appear’ then quite literally is ‘resemble to the point of resulting in CP’. Similarly, justifying gloss (46c), French *s’avérer* ‘appear’ includes a stem identical to that in *vérité* ‘truth’, and a morpheme *a*. The morpheme *a* diachronically derives from Latin *ad* ‘towards, at’ and marks direction and the endpoint to be reached. Interestingly, English *turn out* (*Alfred turned out to have eaten his veggies*) can be equally considered a periphrastic counterpart of *appear*, overtly marking resultativity in the preposition *out* (den Dikken p.c.).

If this semantic analysis of *seem* and *appear* as involving the comparison of situations or events is on the right track, how can it be extended to those cases where raising out of the sentential complement has occurred? That is, if *seem* and *appear* involve comparison, what are the two events being compared in (47)?

(47) Alfred seems/ appears to have eaten his veggies

In a traditional analysis that takes the sentential complement of raising verbs to be of the type  $AGR_{\zeta}P$ , there is no answer to this question. However, I have tried to argue above that the analysis of raising in (47) involves the more complex structure in (41b), repeated here as (48), where  $AGR_{\zeta}P$  has raised to SpecCP.

(48) Alfred seems [ $CP$  [ $AGR_{\zeta}P$  to have eaten his veggies]  $C_{+FOC}$   $t_{AGR_{\zeta}P}$  ]

Assuming this analysis, I would like to suggest that this configuration satisfies the comparative interpretation required by *seem*. The configuration in the embedded CP in (48) is an instance of an operator - variable relation between the  $AGR_{\zeta}P$  in SpecCP and its trace in the complement of  $C^{\circ}$ . Movement of  $AGR_{\zeta}P$  in SpecCP is triggered by the fact that  $C^{\circ}$  is a comparative Focus operator, whose comparative properties are acquired via selection under government by matrix *seem*. The morphological form of the complementizers in tensed sentences demonstrates that the  $C^{\circ}$  selected by *seem* can be overtly comparative. It might be argued that this comparative selection establishes the background set which is required for Focus. Movement of  $AGR_{\zeta}P$  to SpecCP allows the comparative Focus  $C^{\circ}$  to establish a comparative relation between the  $AGR_{\zeta}P$  in SpecCP and its variable left behind after movement. This is therefore an operator - variable relation. Formally speaking, the configuration is strictly identical to an operator - variable relation of the *Wh-* type. In (49), there is an operator establishing a set, and a relation between the set and the variable. Another way of expressing this would be to say that (49a) involves a type - token distinction, where type stands for the set of elements such that they are books, and token for the specific token of that type that is questioned. This is represented in (49c).

- (49) a. [ $CP$  [ $NP$  Which book] did [ $AGR_{\zeta}P$  John read  $t_{NP}$  ]]
- b. Which  $x$ ,  $x$  an element of the set  $S$  of books,  
is such that John read  $x$



- c. Which  $x$ ,  $x$  a token of the type  $X$ ,  $X = \text{book}$ ,  
is such that John read  $x$

Similarly, the operator - variable relation in the CP complement of *seem* may be paraphrased as in (50b), with a slightly more formal semantic interpretation as in (50cd):

- (50) a. Alfred seems [<sub>CP</sub> [<sub>AGRSP</sub> to have eaten his veggies] C<sub>+FOC</sub> t<sub>AGRSP</sub>]  
b. This instance of Alfred eating his veggies resembles  
the ‘typical’ instance of Alfred eating his veggies, (this is not quite a  
full fledged version of Alfred eating his veggies)  
c. For  $S$  the set of situations resembling a situation in which Alfred  
eats his veggies, there is an  $x$  such that  $x$  is an element of the set  $S$ .  
d. For  $S$  the situation type which involves Alfred  
eating his veggies, there is an  $x$  such that  $x$  resembles the type  $S$ .

The representations in (50b--d) reflect the interpretation of the embedded CP, in which the [+ Focus] C<sup>o</sup>, which is selected by *seem*, is the element that establishes the resemblance between  $x$  and  $X$ . The paraphrase in (50b) is a more intuitive representation of the comparative meaning of (50a). The representations in (50cd) offer a translation of this insight into LF-style interpretations in which an element/ token of the set/ type of situations is included/ compared to its set/ type, establishing an operation of resemblance between the element/ token and the set/ type.

If these representations are on the right track, there are two configurational ways in which comparative Focus can be established with *seem*. Focus in the matrix clause may trigger movement of predicative *it* into SpecIP by predicate inversion (Moro 1992), yielding sentences such as (43a). In these cases, the comparative relation is established by *seem* itself between the NP *it* (the pro-CP) in its subject position and the CP in its complement position. In these cases, *seem* itself functions as an operator relating the (raised) variable/ token *it* to the set of situations / type denoted by the CP complement. In raising contexts such as (50), the comparison is established ‘one notch down’ in the complement clause: the elements compared involve the AGR<sub>S</sub>P operator in SpecCP on one hand, and the variable of this AGR<sub>S</sub>P on the other. The requirement of the verb *seem* for comparative Focus can be satisfied either way.<sup>10</sup>

The net result of this analysis is twofold. First, *seem* and *appear* can be analyzed straightforwardly as involving a configurationally expressed comparison of events or

<sup>10</sup> At this point, the perspicuous reader might wonder why the strategy of an operator - variable relation at work in raising constructions such as (50) could not be used in the case of tensed CP complements as well. Why wouldn’t it be possible to raise the CP complement to the subject position of *seem*, leaving out the expletive, as in (i)?

i. It seems [<sub>CP</sub> that John is sick]

ii \*[[<sub>IP</sub> [<sub>CP</sub> that John is sick] seems t<sub>CP</sub> ]

Arguably, this movement would create a relation between the moved CP and its trace. I would like to argue however that this movement does not comply with the interpretive requirements of *seem*. The relation between the CP in SpecIP position and its trace is neither an operator - variable relation as in (50), nor a relation between an event-token (the pro-CP *it*) and an event-type (CP) as in (i). As a result, the comparative relation required by the semantics of *seem* cannot be satisfied in (ii). The sentence (ii) therefore is ungrammatical because it is uninterpretable.

situations both in raising and nonraising contexts. Secondly, I have advanced independent motivation for the Focus movement of AGR<sub>S</sub>P to SpecCP in raising contexts, corroborating our analysis of sentential complementation as uniform CP complementation. As suggested before, it is this AGR<sub>S</sub>P movement to SpecCP that enables movement of the subject of the infinitive to the matrix SpecAGR<sub>O</sub>P. In the next sections, I will show that an extension of this analysis of *seem* to *believe* allows for the derivation of a large number of hitherto unexplained facts involving ECM in English.

### 5. BELIEVE AND FOCUS

Turning our attention from *seem* and *appear* to *believe* and *find* type verbs, the same semantic analysis can be proposed for Focus movement of AGR<sub>S</sub>P to SpecCP in the CP complement of *believe* and *find*. Recall that *believe* and *find* simply are the ‘accusative’ counterparts of *seem* and *appear*, respectively. The only difference lies in the position to which the subject of the infinitive raises, SpecAGR<sub>O</sub>P for *find* and *believe* rather than SpecAGR<sub>S</sub>P for *seem* and *appear*.

(51)  
Sue [XP believes<sub>[AGROP Alfred t<sub>v</sub><sup>°</sup>-AO<sup>°</sup>]] [VP t<sub>v</sub><sup>°</sup> [CP [AGRSP t<sub>Alfred</sub> to be smoking] C<sup>°</sup> t<sub>AGRSP</sub>]]</sub>

(52) To Sue, Alfred seems to be smoking  
[AGRSP Alfred [seems]<sub>AGR<sub>S</sub></sub>] [VP t<sub>v</sub><sup>°</sup> [CP [AGRSP t<sub>Alfred</sub> to be smoking] [C' C<sup>°</sup> t<sub>AGRSP</sub>]]]

The sentences (51) and (52) have the same semantics, roughly meaning something like: to the (dative or subject) Experiencer Sue, this event of Alfred’s smoking only resembles an event in which Alfred smokes.

The analysis proposed suggests that there should be other differences between ECM complements and tensed CPs of *believe* type verbs that are triggered by movement of AGRSP to SpecCP in ECM cases and the absence of this movement in tensed CPs. An important argument for such an additional difference comes from negation. Besides their ECM complementation, *believe* type verbs also have particular properties with respect to negation. First of all, verbs such as *believe* create negative islands (Ross 1984, Rizzi 1990a, Rooryck 1992a):

- (53) a. This is the person who I believe likes my book  
b. (?) This is the person who I do not believe likes my book  
c. \* How don’t you believe that I selected the article?

Secondly, verbs such as *believe* have the property of being Neg-raising verbs (Horn 1978): the sentences (54a) and (54b) seem to be equivalent.<sup>11</sup>

<sup>11</sup> Note that *seem* also is a Neg-raising verb. This supports our analysis of *seem* and *believe* as essentially the same verb with *believe* the ‘accusative’ counterpart of ‘nominative’ *seem*:

- (54) a. Fred believes that God does not exist  
 b. Fred does not believe God to exist

Rooryck (1992a, this volume Ch 6) proposes that both properties can be derived if negation in the matrix clause in (54b) is allowed to have scope over the embedded sentence by binding the embedded  $C^\circ$  as a variable.<sup>12</sup> As a result, any *Wh*- element passing through the embedded SpecCP on its way to the matrix SpecCP receives the property of being a variable for negation. Movement to the matrix SpecCP then moves the *Wh*- element beyond the negation operator binding it, resulting in a violation of principles governing operator - variable relations.

This analysis of Negative islands is relevant to the present purposes, because *believe* does not give rise to the slight Negative island effect on subject extraction in the context of ECM:

- (55) This is the person who I do not believe to have liked my book

The admittedly slight contrast in English appears more strongly in French. For reasons that are not entirely clear, extraction of the subject out of the tensed CP complement in (56a) triggers a Negative island effect that is stronger than that in English (53). However, with ECM complements of negated *croire* 'believe', where the subject has to be *Wh*- moved or otherwise focused, Negative island effects disappear as shown in (56b).

- (56) a. \* Voilà la personne que je ne croyais pas qui a été arrêtée  
 This is the person I did't believe has been arrested'  
 b. Voilà une personne que je ne crois pas avoir jamais été arrêtée  
 'This is a person who I do not believe to have ever been arrested'

Recall that sentential complementation of *believe/croire* always involves CPs in the analysis advocated above. In this context, the facts about Negative islands provide interesting evidence that the value of  $C^\circ$  is crucially different in tensed CP complements and in CP complements with ECM.

Following Rooryck (1992a, this volume Ch 6), it can be assumed that  $C^\circ$  in tensed CPs acts as a variable for negation. According to the analysis developed here, the [+ Focus]  $C^\circ$  triggering AGR<sub>S</sub>P movement to SpecCP functions as an operator. The  $C^\circ$  head of the CP selected by *believe* can simply have two different values, one for negation with tensed CPs, and another one for Focus with untensed CPs. It is natural to assume that the functional head  $C^\circ$  cannot have both values at the same time.<sup>13</sup> The Focus operator value of  $C^\circ$  in untensed

- i. It does not seem to have rained  
 ii. It seems not to have rained

<sup>12</sup> Rooryck (1992a) shows that Rizzi's account of negative islands based on Relativized Minimality cannot hold since there are cases where negation can intervene in between a *Wh*- chain:

- i. Qui ne veux-tu pas qui vienne encore ici?  
 Who don't you want that still comes here?'

These cases are ruled grammatical since the  $C^\circ$  selected by *vouloir* 'want' cannot function as a variable for negation, *vouloir* 'want' not being a Neg-raising verb.

<sup>13</sup> One reviewer observes that there are elements that can both be Focus and negative variables, like anyone in *There isn't anyone in the room*. This fact does not undermine the analysis proposed, however. In the case of

CPs and its negation variable value in tensed CPs are mutually exclusive: they both involve an operator - variable structure, and an element cannot be both an operator and a variable at the same time. Focus and negation arguably belong to the same set of phenomena.

We are now in a position to explain why Negative islands are lifted in ECM contexts. Rooryck (1992a, this volume Ch 6) argues that Negative islands such as (56a) are only triggered by the presence of a  $C^\circ$  functioning as a variable for negation. In the analysis assumed here for ECM contexts,  $C^\circ$  cannot have such a negative value, since it is a Focus operator that is incompatible with negative variablehood. As a result, Negative island effects disappear in ECM contexts because  $C^\circ$  cannot function as a variable for the matrix negation if it has to carry a [+Focus] value.

Not only do ECM contexts seem to lift negative island effects, they also seem to have interesting effects on Neg-raising. If both the matrix and the embedded tensed clause of *believe* is negated, both negations seem to cancel each other out: (57a) is equivalent to (57b):

- (57) a. Sue cannot believe that Clara was not a composer  
 b. Sue believes that Clara was a composer /  
 Sue believes Clara to have been a composer

This ‘canceling out’ of both negations is due to the fact that *believe* is a Neg-raising verb. In Rooryck’s (1992a, this volume Ch 6) terms, the matrix negation can extend its scope into the embedded clause by binding the embedded  $C^\circ$  as a negative variable.

If the ECM construction were a simple variant of its tensed counterpart, it would be expected that double negation in ECM contexts cancels out as well. According to the native speakers I consulted, this does not seem to be the case: (58a) is not equivalent to (57b). If it is interpretable at all, it means something closer to (58b), where both negations are preserved.<sup>14</sup>

- (58) a. Sue cannot believe Clara not to have been a composer  
 (she’d rather not pronounce herself on the matter)  
 b. The beliefs of Sue about Clara do not include that she  
 has not been a composer

The fact that both negations are preserved is due to the fact that the matrix negation does not have scope over the embedded clause. In our view, negation cannot have scope over the embedded clause since the embedded  $C^\circ$  is [+Focus]. Since the matrix negation cannot bind this  $C^\circ$  as a negative variable, it cannot extend its scope into the embedded clause. As a result, the negations in the matrix and embedded clauses of (58a) do not cancel out.

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*anyone*, the entire NP carries Focus, while the negative variable is only a part of the NP, namely *any*. In the case of  $C^\circ$  as a variable, I claim that Focus and negation compete to attribute a value to the same element.

<sup>14</sup> A similar contrast was noted by Postal (1974:236):

- i. I couldn’t believe none of the sailors kissed Sally  
 ii. \* I couldn’t believe none of the sailors to have kissed Sally

However, Postal relates this to the fact that when the negative object is raised, there would be two negations in the matrix clause, an illicit situation.

## 6. ON MORE DIFFERENCES BETWEEN FRENCH AND ENGLISH

## 6.1 Reexamining the data

We still have to tackle the problem stated in (29ii), concerning the relation between ECM and Focus on the subject with French *croire*, *dire* and with a large subset of verbs (English *think*, *discover*, *estimate* etc.). Recall that these verbs cannot have ECM with an overt subject in SpecAGRSP position of the infinitive, as the sentences (59b) and (63) show. Instead, the subject of the infinitive has to be Focused by Focus movement to the left, *Wh*- movement, or Heavy-NP-shift to the right.

- (59) a. Voilà la linguiste [ O<sub>i</sub> que je crois [CP t'<sub>i</sub> [IP t<sub>i</sub> avoir été mal comprise]]  
 'This is the linguist who I think to have been misunderstood'  
 b. \* Je crois cette linguiste avoir été mal comprise  
 'I believe that linguist to have been misunderstood'
- (60) Je crois n'avoir été condamnés que trois de mes amis (Pollock 1985)  
 'I believe only to have been condemned three of my friends'
- (61) Je crois avoir été condamnés plusieurs des amis  
 qui avaient été arrêtés en même temps que moi  
 'I believe to have been condemned several of the friends that  
 had been arrested at the same time I was'
- (62) a. Bill's dinosaur, I estimate to be 175 feet long  
 b. I estimated to be over 175 feet long all the dinosaurs which  
 we caught yesterday in Central Park  
 c. Which dinosaur did you estimate to be 175 feet long?
- (63) \* They estimated Bill's dinosaur to be 175 feet long

Until now, I have only been able to give a very rough answer to this problem, suggesting that even apparently 'Focusless' verbs such as *believe* and *find* actually do involve a 'hidden' Focus movement of AGRSP to SpecCP.

In minimalist terms, these observations might be explained in the following way. From a purely descriptive point of view, it might be argued that English *believe* differs from French *croire* and English *estimate* in the target of Focus (AGRSP or the subject) and in the overt or nonovert nature of the Focus movement involved ('strong' vs. 'weak' features). First, we might say that the target of Focus with *believe* type verbs is AGRSP, while the target of movement in the embedded CP of French *croire* and English *estimate* is the infinitival subject. Secondly, movement of AGRSP to SpecCP with *believe* type verbs is the result of a 'strong' Focus feature in C°, forcing overt movement. The [+Focus] C° selected by *croire* 'believe' in French and *estimate* in English is a 'weak' feature in the sense of Chomsky (1995) which can only be licensed at LF by the infinitival subject.<sup>15</sup> The 'weak' character of [+Focus] C° explains why subjects must either move all the way up to the higher SpecCP (59, 62c), or must stay downstairs if restrictively focused or heavy NP shifted as in (60, 61, 62ab). The Focused infinitival subject in (60, 61, 62b) only moves at LF to be licensed by 'weak' [+Focus] C°, while the *Wh*- moved infinitival subject in (53, 56c) and the extraposed subject in (56a) license the 'weak' [+Focus] feature in the lower C° at LF by the operation

<sup>15</sup> I assume here that 'strong' and 'weak' values of the feature [+Focus] can be selected for by a matrix verb. This selection should be likened to whatever selection mechanism that ensures a 'strong' [+Wh] feature in the C° head of the CP complement of verbs such as *wonder*.

Form-Chain (Chomsky 1995). In all grammatical cases, ‘weak’ Focus prevents infinitival subjects from surfacing in SpecCP at spellout as in (59b-63).

This analysis raises however the nontrivial question why ‘strong’ Focus only triggers movement of the entire AGR<sub>S</sub>P, while ‘weak’ Focus only attracts the subjects of the embedded CP. As it stands, the minimalist account given cannot explain this correlation. Moreover, the analysis is not entirely consistent with the full range of data in English and French. Postal (1974) observes that verbs such as *estimate*, *allege*, *acknowledge*, *affirm*, *demonstrate*, *know*, *guess*, *think*, *figure* etc. not only allow for ECM with Focus as in (62), but that they also display ECM without Focus if the subject of the infinitive is an expletive NP such as *it* or *there*: Moreover, these verbs allow for passives as in (65) which do not involve Focus either. Examples and judgments are from Postal (1974:298(21-25-28)).

- (64) a. I estimate there to be two million people in that valley  
 b. I estimate it to be raining  
 c. \* I estimate it to be six inches long
- (65) Bill’s dinosaur was estimated to be 175 feet long

These data show that licensing the subject of the infinitival complement cannot simply reduce to Focus movement. The curious difference between expletive and referential NPs in subject position of the infinitive suggests that there is a difference in the way the Case of expletive and referential subjects is licensed. I will investigate this question shortly

A closer look at the French data also suggest that Focus is not always necessary to license the subject of the infinitive of ECM verbs, although in a different and surprising way. A number of ECM constructions in French involve movement of a clitic which is subject of the infinitive to the matrix clause. Obviously, the clitic subject of the infinitive cannot be focused in these cases. However, clitic ECM seems to be subject to a hitherto overlooked constraint with respect to focus. Two sets of examples seem to be relevant. The first set of verbs involves predicative verbs in the embedded clause. If the infinitive consists of *être* ‘be’/ *devenir* ‘become’ followed by an AP or NP complement, movement of the clitic is only possible if the predicate is contrasted or focused:<sup>16</sup>

- (66) a. ?Je le crois être le plus intelligent de tous (Kayne 1981b:361fn.15(v))  
 ‘I him believe to be the most intelligent of all’  
 b. \* Je le crois être malade/ au lit avec la fièvre jaune  
 ‘I believe him to be sick/ in bed with yellow fever’

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<sup>16</sup> See Kayne (1981b:361fn 15) for further references on this construction which seems to be subject to a certain amount of subtle variation among speakers. Kayne (1981b:357fn 12) insists on the fact that these examples are formed by analogy with the SC construction of these same verbs. In other words, the grammaticality of (i) is due to the fact that this verb also has (ii):

- i. Je le crois être \*(le plus) intelligent    ii. Je le crois (le plus) intelligent.  
 ‘I consider him to be the most intelligent’    ‘I consider him the most intelligent’

This analogy is supported by the fact that with verbs such as *nier* ‘deny’, *constater* ‘observe’, which do not have the SC construction, do not have the clitic ECM construction either:

- iii. \*Je le constate être le plus intelligent    iv. \* Je le constate (le plus) intelligent.  
 ‘I deny him to be the most intelligent’    ‘I consider him the most intelligent’

Although the analogous influence might play a role, it does not provide an explanation for the additional contrastive constraint that is operative in CP complements, but not in SC complements.

- c. \*Je la croyais être rentrée chez elle/ avoir été nommée directrice  
‘I believe her to-be at home/ to have been appointed a director’
- d. \*Je le considère être sans importance  
‘I consider him/it to be without interest’
- (67) ‘Ce peintre était son Dieu parce qu’elle le savait être le plus pur parmi les purs’  
‘That painter was her God because she knew him to be the purest among the pure’  
Georges Michel, *Les Montparnos*, 43, in Sandfeld 1943:187)
- (68) \*Je les nie être de quelque importance que ce soit  
‘I deny them to be of any interest at all’ (Kayne 1981b:357fn.12(ii))
- (69) a. ? Louis la croyait être sans aucun doute la plus grande chanteuse qui ait jamais vécu  
‘Louis believed her to be without question the greatest singer that ever lived’
- b. \* Louis le croyait être un inconnu  
‘Louis thought him to be a stranger’

All felicitous examples need a comparative or superlative predicate. Guéron (1981) has argued that comparatives involve LF- movement to SpecCP. A second set of examples involves nonpredicative verbs. Very few examples involving clitic ECM can be found with such verbs. Nevertheless, those attested examples that can be found, quoted by Sandfeld (1943:187--188) and Grevisse (1980:§2600) share the characteristic that movement of the clitic subject of the infinitive is dependent on *Wh*- movement of a complement of the infinitive to the SpecCP of the matrix clause. The variety of French that allows for this strategy is quite literary. The generalisation here seems to be that clitic climbing of the subject of the infinitive is in some sense parasitic on *Wh*- movement of another element out of the embedded clause. This strategy is also available to predicative verbs as shown by (72). Native speakers report contrasts between clitic ECM with and without accompanying *Wh*-movement of another element.

- (70) a. ‘ce genre de jeunes gens (...) auxquels Swann me croyait ressembler’  
the type of young persons to-whom Swann me-believed to-resemble  
‘The kind of adolescent whom Swann believed that I resembled’  
M. Proust, *A l’ombre des jeunes filles en fleur*, 57, Sandfeld 1943:188
- b. \* Swann me croyait ressembler aux jeunes gens peu scrupuleux  
‘Swann believed me to resemble the unscrupulous adolescents’
- (71) a. ‘L’emplacement de la vraie maison où on le sait avoir vécu’  
The site of the real house where one him-knows to-have lived  
‘The site of the real house where he is known to have lived’  
(E. Henriot, *Le Monde*, 20 janv. 1960, quoted by Grevisse 1980:§2600)
- b. \* Nous le savions avoir vécu dans une maison en banlieue  
‘We knew him to have lived in a house in the suburbs’
- (72) a. ‘[ils] prenaient tout simplement la femme mystérieuse pour  
They took very simply the woman mysterious for  
ce qu’elle était ou du moins pour ce qu’ils la croyaient être’  
what she was or rather for what they her-believed to-be  
‘They simply took the mysterious woman for what she was or,  
rather, for what they believed her to be’  
(Richepin, *Contes sans morale* 258, quoted by Sandfeld 1943:188)
- b. \* Ils la croyaient être la chanteuse qui avait le rôle de doña Anna  
‘They believed her to be the singer with the role of doña Anna’

Both sets of examples involving clitic ECM constructions with *croire* ‘believe’ type verbs share the property that either a complement of the infinitive must be overtly focused via *Wh*- movement, or the predicate following the infinitive must be (comparatively or superlatively) contrasted.

## 6.2 Capturing English

Recapitulating the relevant data from French and English, it appears that English verbs such as *estimate* do not require Focus on expletive subjects of their ECM constructions, nor on any other element of these ECM constructions. In French, by contrast, Focus properties seem to be required at all times in ECM complements of *croire* ‘believe’ type verbs. When the subject of the infinitive cannot bear Focus because of its clitic properties, it appears that Focus has to be expressed on another element of the sentential complement of *croire* ‘believe’. In other words, Focus only surfaces in some cases in English, but it is a constant in French ECM constructions quoted in the literature.

This apparent puzzle can be solved if the mechanism of case-checking in these constructions is examined more closely. I would like to relate these facts to the well-known observation that the subject of the infinitive in French cannot be passivized in ECM constructions with *croire* ‘believe’ type verbs, contrary to both English *believe* type verbs and *estimate* type verbs:

- (73) a. Voilà la linguiste qu’on a cru/ dit avoir été mal comprise  
 ‘This is the linguist who they believe/ say to have been misunderstood’  
 b. \* Cette personne était dit(e)/ cru(e) avoir été mal comprise  
 ‘This person was said/ believed to have been misunderstood’  
 (74) Bill’s dinosaur was estimated/ believed to have been 175 feet long

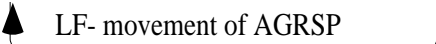
I will try to show that the entire range of differences between French and English can be derived from the fact that English always licenses the subject of the infinitive in the matrix SpecAGR<sub>OP</sub>, while French never licenses the subject of the infinitive in the matrix SpecAGR<sub>OP</sub>. French will be argued to license case internally to the CP complement in ECM constructions with *croire* ‘believe’ type verbs.

English *estimate* type verbs allow for the subject of the infinitive to become the subject of a passive matrix clause as in (74). This shows that the subject of the infinitive is sensitive to the ‘defective’ nature (the absence of accusative) of the matrix AGR<sub>O</sub>. It moreover suggests that the subject of the infinitive should be licensed in this matrix SpecAGR<sub>OP</sub> position in all other instances of ECM with *estimate* type verbs, that is both the cases of ECM with Focus on the subject as in (62), and the cases of ECM with expletive subjects (64). How can this peculiar double restriction of DOC verbs with respect to the NP subject of ECM constructions, which must be either expletive, Focused or passivized, be explained?

Recall it was argued that in ECM constructions with *believe* type verbs, the embedded infinitival AGR<sub>SP</sub> overtly moves to SpecCP, and that this movement enables the NP subject of the infinitive to overtly move to the matrix SpecAGR<sub>OP</sub>. Let us now assume that all English ECM verbs, both *believe* type verbs and *estimate* (DOC) type verbs, always display AGR<sub>SP</sub> movement to SpecCP. The only difference between both types of verbs would involve the overt or covert nature of this movement: movement of AGR<sub>SP</sub> to SpecCP with *believe* type verb is overt, while *estimate* type verbs have covert movement of AGR<sub>SP</sub> to the



embedded SpecCP. The structure for *believe* with overt movement of AGR<sub>S</sub>P to SpecCP therefore differs minimally from the structure assumed for *estimate* type verbs presented in (75):

(75) They estimated [<sub>AGROP</sub> e AGRO [<sub>CP</sub> e C° [<sub>AGRSP</sub> Bill's dinosaur to be 175 feet long]]]  

 A diagram showing a triangle with an upward-pointing arrow. The arrow points from the text 'Bill's dinosaur to be 175 feet long' to the text 'e C°'. A bracket underneath the arrow is labeled 'LF- movement of AGRSP'.

Covert movement of AGR<sub>S</sub>P to SpecCP immediately entails that the NP subject of the infinitive (*Bill's dinosaur* in (75)) cannot move overtly to the the matrix SpecAGRO<sub>P</sub>, but will only be allowed to move covertly to this position at LF. Now it was assumed that NP subjects of infinitives with *believe* type verbs have to move overtly to SpecAGRO<sub>P</sub> to check case-features. The absence of overt AGR<sub>S</sub>P movement with *estimate* (DOC) type verbs therefore entails that the NP subject of the infinitive does not move overtly and fails to check its case-features before LF, as it should. As a result, sentences with *estimate* type verbs where the NP subject of the infinitive is in the SpecAGR<sub>S</sub>P position of the infinitive will be ungrammatical, and the sentences in (76), repeated here, are correctly excluded.

- (76) a. \* They estimated Bill's dinosaur to be 175 feet long  
 b. \* I estimate it to be six inches long

How can sentences with expletive, Focused, and passivized subjects of the ECM infinitive be licensed? Expletive subjects can of course check their case-features overtly like referential NPs. This is at least the case in raising-to-subject (SpecAGR<sub>S</sub>P) contexts as *It seems to have rained*.

There is however some evidence that in raising-to-object (SpecAGRO<sub>P</sub>) contexts, expletive subjects do not move overtly. Kayne (1984) shows that although adverbs may appear after the NP subject of the infinitive with *believe* constructions (Postal 1974), they cannot appear after expletive subjects of the infinitival complement. This suggests that the NP *John* in (77a) moves overtly out of the infinitival complement, beyond the adverb *for a long time now*, while the expletive *there* in (77b) and the idiom chunk *advantage* in (77c) cannot do so.<sup>17</sup> This evidence strongly suggests that expletives and nonreferential NPs generally only move to SpecAGRO<sub>P</sub> at LF: (our (77) = Kayne 1985b:114(70-71-73))

- (77) a. I've believed John for a long time now to be a liar  
 b. \* I've believed there for a long time now to be no solution to this problem  
 c. \* I've believed advantage for a long time now to have been taken of me

Now if expletive subjects of infinitival complements do not move to SpecAGRO<sub>P</sub> overtly with *believe* type verbs, they must also move covertly out of the complement of *estimate* type

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<sup>17</sup> As noted, movement to SpecAGR<sub>S</sub>P of nonreferential subjects must take place overtly: *it seems to be raining*, *advantage seems to be taken of me*. It is not immediately clear why there should be this difference between movement to SpecAGR<sub>S</sub>P with *seem* and to SpecAGRO<sub>P</sub> with *believe*. It might simply be that in the case of movement to SpecAGR<sub>S</sub>P with *seem*, another requirement, besides pure case considerations, plays a role in forcing overt movement. We might here think of a general requirement of predication or (a version of) the Extended Projection Principle



- (80) Bill's dinosaur,  
 I estimate [<sub>AGROP</sub> e <sub>AGRO</sub> [<sub>CP</sub> e <sub>C°</sub> [<sub>AGRSP</sub> pro<sub>var</sub> to be 175 feet long]]]  
 -----LF----->  
 Bill's dinosaur,  
 I estimate [<sub>AGROP</sub> pro<sub>var</sub> <sub>AGRO</sub> [<sub>CP</sub> [<sub>AGRSP</sub> t<sub>pro</sub> to be 175 feet long] <sub>C°</sub> t<sub>AGRSP</sub>]]  
▲ LF- movement▲ LF- movement

The same analysis is valid for cases where the subject of the infinitive is right-dislocated, since this NP is arguably outside of the infinitive (Postal 1993):

- (81) I could assure you e<sub>y</sub> to be one of the world's ten best cars, and  
 hereby do assure you e<sub>y</sub> to be one of the world's ten best cars -  
 [ the 1992 model De Soto that you see standing in front of you]<sub>y</sub>

Postal's (1993) e<sub>y</sub> in (81) can thus be taken to be a pro-variable in the sense of Cinque (1991).

It is important to point out that this analysis accounts for the variation noted among speakers of English with respect to the verbs that display the ECM with Focus pattern of *estimate* verbs, or the 'Focusless' *believe* pattern (cf. fn. 3). In the analysis presented here, the only difference between both dialects involves overt vs. covert movement of <sub>AGRSP</sub> to <sub>SpecCP</sub>. In a minimalist framework, this is exactly the kind of dialectal parameter one might expect. Nevertheless, as was observed before, this small difference has serious consequences for the types of NPs that can be licensed as subjects of the infinitival complement.

I still have to explain the existence of passive sentences with *estimate* type verbs as in (74), repeated here as (82).

- (82) Bill's dinosaur was estimated to be 175 feet long

The logic of our analysis should exclude these sentences, since it was assumed that covert movement of <sub>AGRSP</sub> to <sub>SpecCP</sub> prevents the overt movement of the subject of the infinitive into the higher clause, be it to <sub>SpecAGROP</sub> or <sub>SpecAGRSP</sub> as in (82). Only overt movement of <sub>AGRSP</sub> to <sub>SpecCP</sub> can license overt movement of the subject of the infinitive to the matrix <sub>SpecAGRSP</sub> in (82). It is not likely that overt movement of <sub>AGRSP</sub> to <sub>SpecCP</sub> depends on the passive morphology of the matrix verb. How can such sentences be explained in our analysis?

I would like to suggest that the passive morphology of the matrix verb is the key to understanding passive sentences with *estimate* type verbs. Passive morphology 'deactivates' the accusative case features of <sub>AGRO</sub>, preventing case-checking of the infinitival subject in <sub>SpecAGROP</sub>. Recall now that *believe* type verbs have been analyzed as the accusative counterparts of *seem*. Verbs such as *estimate* are also accusative counterparts of *seem*. In the analysis presented here, the only difference between *estimate* type verbs and *believe* type verbs concerns covert/ overt movement in the CP complement of <sub>AGRSP</sub> to <sub>SpecCP</sub>. If the matrix <sub>AGRO</sub> of *estimate* type verbs is deactivated, *estimate* in a sense becomes *seem* again, which has no 'accusative feature. Now *seem* has overt movement of <sub>AGRSP</sub> to <sub>SpecCP</sub>, feeding overt movement to the matrix <sub>SpecAGRSP</sub>. If passive *estimate* is configurationally equivalent to *seem*, it is natural to assume that movement of <sub>AGRSP</sub> to <sub>SpecCP</sub> is also overt, feeding overt movement of the infinitival subject to the matrix <sub>SpecAGRSP</sub>:

- (83) Bill's dinosaur was estimated [CP [AGR<sub>SP</sub> t<sub>B</sub>'s dino to be 175 feet long] C° t<sub>AGR<sub>SP</sub>}]</sub>
- 

Recapitulating the main points of the analysis, I assume that *estimate* type verbs involve LF (covert) movement of AGR<sub>SP</sub> to SpecCP if the matrix verb has active morphology. (cf. supra). Passive morphology on the matrix verb ‘deactivates’ AGR<sub>O</sub>. This makes *estimate* type verbs configurationally equivalent to *seem* type verbs, and forces overt movement of AGR<sub>SP</sub> to SpecCP.

The analysis of passive *estimate* type verbs presented here crucially depends on the assumption that the functional configuration of matrix verbs partially determines the syntax of their complement. There is some independent evidence for this analysis: in a number of languages, certain verbs only behave as raising verbs if they are passivized:

- (84) Brutus mihi videtur venisse(Latin)  
 Brutus to-me see-PASS to-have-come  
 ‘Brutus seems to have come’
- (85) a. Jan werd geacht/ verondersteld te komen (Dutch)  
 ‘John was supposed to come’  
 b. \*Ik achtte/ veronderstelde Jan te komen  
 ‘I supposed John to come’  
 c. \*Wie achtte/ veronderstelde jij te zullen komen?  
 ‘Who did you suppose to come?’
- (86) a. Jean était censé/ supposé venir (French)  
 ‘John was supposed to come’  
 b. \*J’ai censé/ supposé Jean venir  
 ‘I supposed John to come’  
 c. \*Qui avais-tu censé/ supposé venir?  
 ‘Who did you suppose to come?’

In Latin, passive *videre* ‘see’ is used to express English *seem*,<sup>19</sup> and in Dutch and French only the passivized forms of certain verbs expressing belief syntactically display raising

<sup>19</sup> Note that this analysis of passive *videre* ‘see’ might throw a new light on the well known English alternation between active and passive see with respect to the presence of *to* on the infinitive:

- i. Zigomar saw Zénobie (\*to) cross the street  
 ii. Zénobie was seen \*(to) cross the street

The analysis proposed here suggests that passive *see* in English simply involves the syntactic configuration of *seem*, which also involves a *to*- infinitive. This analysis is corroborated by the often noted observation that passive *see* as in (ii) can have a ‘psychological’ meaning close to *believe* (= *seem*) that (i) lacks.

A similar problem shows up in a curious difference between *want* and *expect*. Both verbs select a CP, with an optional complementizer *for* assigning case to the subject of the infinitive:

- i. Zigomar wanted/ expected (for) Zénobie to cross the street  
 Nevertheless, *want* does not allow for passivization while *expect* does:  
 ii. Zénobie was \*wanted/ expected to cross the street

Under the analysis where the subject of the infinitive receives case inside the infinitive by the C° *for*, there is no reason for that subject to ever leave the CP, moving to the matrix SpecAGR<sub>SP</sub> position. The case-assigning properties of the complementizer *for* do not change depending on active or passive morphology in the matrix clause. According to this view, passives of *want* type verbs should always be ungrammatical. The grammaticality

behavior, while having a meaning close to modal raising verbs such as epistemic *devoir* ‘must/ should’. These facts show that passive *believe* type verbs have in many languages a special ‘accusatively deactivated’ status that makes them ‘revert’ to nominative *seem* type verbs. It is our contention that the passive use of *estimate* type verbs participates in the mechanism that makes (84--86) possible. Admittedly, this is not yet an explanation of why these verbs behave this way. It is only our purpose to establish a correlation between a special set of ‘accusatively deactivated’ verbs as in (84--86) and the passive *estimate* type verbs which remain as a problem for the analysis presented above. The exact implementation of the idea that syntactic configuration of matrix verbs influences the syntax of the complement of these verbs is a problem I will leave for further research.

### 6.3 Capturing French

Let us now turn our attention to the French data. It was observed above that Focus properties seem to be required at all times in ECM complements of *croire* ‘believe’ type verbs. At the same time, I want to make the assumption that Case is licensed internally to the CP complement of *croire* ‘believe’ verbs in French. In other words, the overt subject of the infinitive in the complement of *croire* ‘believe’ does not move to the matrix SpecAGROP in French. This assumption was motivated by the absence of agreement on matrix participles (9), the absence of passives with ECM constructions (11).

As a result, two questions have to be solved:

- (87) i. Why is Focus always present in ECM complements of *croire* ‘believe’?  
 ii. How is Case on the subject licensed internally to the ECM complement?

I would like to propose that Case on the subject in ECM infinitives is linked to Focus in French. French seems to have the property of independently licensing a case for the subject of infinitives if the event is focused. This can be seen in root infinitives such as (88):

- (88) Et les linguistes de s’engueuler tout le temps  
 And the linguists of each-other-yell all the time  
 ‘And the linguists did nothing but yell at each other’

The sentence in (88) involves restrictive Focus on the event. Following Kayne (1981b, 1994), I take *de* in (88) to be C°. The presence of an overt subject in front of *de*, forces us to conclude that this configuration licenses a case in SpecCP.<sup>20</sup> Case is overtly checked and therefore ‘strong’ in the sense of Chomsky (1995).

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of the example with *expect* therefore is quite unexpected. Note however that passives of certain verbs in French and Dutch (*veronderstellen*, *supposer* ‘suppose’) can be used with the raising configuration of *seem* type verbs (cf. infra). The passive of *expect* is very close semantically to these cases: passive *expect*, *veronderstellen*, ‘suppose’, *supposer* ‘suppose’ have an epistemic meaning close to ‘should’. This meaning might be derived along the lines of the ‘zero-semantics’ analysis presented in § 6.2 for verbs that are ambiguous between control and raising. We will therefore assume that the passive of *expect* in (ii) licenses the raising configuration of *seem*-type verbs, independently of its ECM construction of the *want* type.

<sup>20</sup> The presence of the subject in SpecCP, and its adjacency to C° *de*, can be tested by the impossibility to insert adverbs between *de* and the subject (*Et les linguistes de (?toujours) remplir leurs verres/ Et les linguistes (\*toujours) de remplir leurs verres*).

There is one case in which the root infinitive construction quoted in (88) shows up in ECM contexts:<sup>21</sup>

- (89) a. On soupçonne cette histoire d'avoir été inventée de toutes pièces  
 'They suspect that story to have been entirely made up'  
 (Ruwet 1983:23n.18, 19)
- b. Je soupçonne ces bouteilles d'avoir plus de trente ans de cave  
 'I believe those bottles to be over thirty years old'

In this case, it can be assumed that the verb *soupçonner* 'suspect' selects a [+Focus] C° which licenses a Case feature that has to be checked overtly by the subject of the infinitive.

In (59--61), repeated here as (90--92), Case is a 'weak' feature associated with [+Focus] C°. Therefore, it may not be licensed overtly. As a result, the subject of the infinitive has to move all the way up to the matrix SpecCP, licensing Case and Focus in the embedded SpecCP at LF by Form Chain as in (90a). Another possibility is for the subject to stay overtly 'downstairs' under restrictive Focus expressed by *ne que* or by Heavy-NP-shift, only to covertly raise to the embedded SpecCP at LF, checking Case and Focus. This is what happens in (91--92).

- (90) a. Voilà la linguiste [ O<sub>i</sub> que je crois [CP t'<sub>i</sub> [IP t<sub>i</sub> avoir été mal comprise]]  
 'This is the linguist who I think to have been misunderstood'

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<sup>21</sup> Two other verbs, *empêcher* 'prevent' and *permettre* 'allow' also display the construction exemplified in (89) with *soupçonner* 'suspect' (Ruwet 1983):



- i. Cet attentat a empêché la linguistique d'être discutée au dernier congrès  
 'That terrorist attack prevented linguistics from being discussed at the last congress'
- ii. Le plastique troué a permis à l'eau de s'échapper  
 'The punctured plastic allowed the water to escape'
- iii. Louis soupçonnait cette histoire d'être montée de toutes pièces  
 'Louis suspected that story to have been completely invented'

All constructions share the same structural properties. Although all three verbs can select three arguments in their 'standard' use as control verbs (*prevent someone from doing something*, *suspect someone of doing something*, *allow someone to do something*), the constructions with an inanimate indirect object behave as if both postverbal arguments were a single sentential complement, corresponding to the single complement NP in (iii) and (iv):

- iv. Cet attentat a empêché la discussion de la linguistique  
 'That terrorist attack prevented the discussion of linguistics'
- v. Le plastique troué a permis la contamination du terrain  
 'The punctured plastic allowed for the contamination of the site'
- vi. Louis soupçonnait une histoire montée de toutes pièces  
 'Louis suspected a made up story'

This analysis is confirmed by the fact that the infinitives in (i-iii), being part of a larger constituent, cannot be pronominalized on the matrix verb, while the infinitives in control constructions, which are independent arguments of the matrix verb, can be pronominalized. Another piece of evidence that (i-iii) and (iv-vi) involve uses of the relevant verbs with a single complement, CP in (i-iii) and NP in (iv-vi), comes from their behavior with respect to temporal modification: the sentences (i-vi) cannot be modified by verbs testing punctuality such as *venir de* 'just have'. The 'standard' use of *empêcher* 'prevent', *permettre* 'allow' and *soupçonner* 'suspect' as control verbs, on the contrary, quite freely allows for modification by *venir de* 'just have'.

In the text, *soupçonner* 'suspect' is analyzed as a *believe* type verb in disguise that selects a [+Focus] CP. The uses of the verbs *empêcher* 'prevent', *permettre* 'allow' with a [+Focus] CP should be related to ECM with the causative *faire*: in a sense, these verbs are causatives in disguise.

- b. \* Je crois cette linguiste avoir été mal comprise  
 ‘I believe that linguist to have been misunderstood’
- (91) Je crois [<sub>CP</sub> e C° [<sub>AGRSP</sub> n’ avoir été condamnés que trois de mes amis]]  

- ‘I believe only to have been condemned three of my friends’
- (92) Je crois [<sub>CP</sub> e C° [<sub>AGRSP</sub> avoir été condamnés plusieurs des amis  
 qui avaient été arrêtés en même temps que moi]]  

- ‘I believe to have been condemned several of the friends that  
 had been arrested at the same time I was’

Checking of case and Focus can be dissociated: in the cases of clitic ECM quoted in (66--69) above and repeated here as (93--94). In these cases, the clitic checks ‘weak’ case at LF, thanks to its trace in the embedded C°. The [+Focus] feature is checked covertly by movement of the comparatively focused AP in the infinitive, as in (93a). Following Guéron (1981), I assume that comparative/ superlative APs must move to SpecCP at LF. The [+Focus] feature can also be checked by *Wh*- movement to the matrix CP of another element in the clause, as in (94a), (70a) and (72a). This *Wh*- moved element will check Focus in the embedded SpecCP by Form Chain at LF.

- (93) a. ?Je le crois être le plus intelligent de tous (Kayne 1981b:361fn.15(v))  
 ‘I him believe to be the most intelligent of all’  
 b. \* Je le crois être malade/ au lit avec la fièvre jaune  
 ‘I believe him to be sick/ in bed with yellow fever’
- (94) a. ‘L’emplacement de la vraie maison où on le sait avoir vécu’  
 The site of the real house where one him-knows to-have lived  
 ‘The site of the real house where he is known to have lived’  
 (E. Henriot, *Le Monde*, 20 janv. 1960, quoted by Grevisse 1980:§2600)  
 b. \* Nous le savions avoir vécu dans une maison en banlieue  
 ‘We knew him to have lived in a house in the suburbs’

It is now possible to formulate an answer to the question in (87i), i.e. why Focus is always present in French ECM constructions with *croire* ‘believe’. French *croire* ‘believe’ type verbs do not allow movement of AGR<sub>SP</sub> to SpecCP, contrary to *sembler* ‘seem’ type verbs which require this type of movement.<sup>22</sup> As a result, the ‘weak’ [+Focus] feature of C° must always be licensed by some other element in the embedded clause.

The dissociation between [+Focus] and case for the subject of the infinitive also accounts for the dialectal variation reported for French ECM. As noted in section 2, Pollock (1985) pointed out the existence of two dialects with respect to French ECM constructions. One

<sup>22</sup> It is not clear to us why there is this difference between *seem* type verbs and *croire* type verbs in French. It might be due to the fact that *seem* type verbs always seem to impose a ‘strong’ [+Focus] feature on the C° head of the CP they select, while *believe* type verbs can select either a ‘strong’ [+Focus] feature (triggering AGR<sub>SP</sub> movement as in English) or a ‘weak’ [+Focus] feature, triggering movement of an element in the embedded clause at LF as in French. The fact that *seem* always selects a ‘strong’ [+Focus] feature might be due to the fact that *seem* always requires the comparison of the event and its trace (cf. supra). However, this still leaves us without an answer for the question why ‘weak’ Focus cannot trigger covert AGR<sub>SP</sub> movement to SpecCP at LF in the complement of French *croire* ‘believe’ verbs. We will leave this question for further research.

dialect restricts the embedded ECM infinitives of *croire* verbs to impersonal passives and ergatives, while another dialect does not manifest such a restriction. Recall it was shown above that the constructions in (95a) involve impersonal constructions with an impersonal *pro* subject.

- (95) a. L'homme que je croyais être arrivé/ entré/ avoir disparu  
 'The man who I thought to have arrived/ come in/ disappeared'  
 b. (\*) L'homme que je croyais avoir téléphoné/ toussé/ plongé dans l'eau  
 'The man who I thought to have telephoned/ coughed / dived into the water'

It should be noted that those speakers of French who do not have a restriction on the type of infinitives in ECM constructions are usually speakers of a more conservative dialect of French (CF), while speakers who only accept embedded impersonal constructions speak a less conservative, 'advanced' dialect of French (AF). Importantly, the bare infinitive construction with an overt, case-marked subject in (87) is only featured in Conservative French. This correlation holds the key to understanding the variation between CF and AF. If AF does not have bare infinitives which case-mark an overt subject such as (88), our analysis predicts that ECM infinitives selected by *croire* 'believe' in this dialect should not be able to case-mark their subjects either. The options for the subject of the infinitive in AF are thus extremely limited: the subject cannot move out of the embedded CP to be licensed by the matrix case-features, and the infinitive itself does not provide case-features either. The only infinitival constructions that may occur in the complement of *croire* 'believe' are those in which the subject does not need the Case of an overt NP. It can be assumed that the impersonal *pro* of impersonal passives and ergatives fits this profile, and does not need case. As a result, AF only allows these impersonal infinitives in the CP complement of *croire* 'believe' as in (95a). Of course, the CP complement of *croire* 'believe' still has a [+Focus] feature that needs to be licensed: the only difference between CF and AF concerns the case-marking potential of infinitives, not the 'weak' [+Focus] property which in embedded contexts is a function of the matrix verb. This 'weak' [+Focus] feature in the embedded SpecCP of (95a) will be licensed at LF by Form Chain, after the subject of the infinitive has moved overtly to the higher SpecCP.

The other dialect of French, Conservative French, has the case-marking bare infinitive (88), and therefore its ECM infinitives can assign case to the subject of any infinitive. As a result, there are no restrictions on the type of infinitives that may occur in the complement of *croire* 'believe' in CF.

There is a final question with respect to the analysis proposed here for French *croire* constructions with pseudo-ECM. Recall it was assumed for *seem/sembler* that in a raising structure such as *Alfred seems to have eaten his veggies*, the CP complement contains an operator - variable structure, with AGR<sub>SP</sub> in SpecCP (the operator) and a trace of the AGR<sub>SP</sub> (the variable), both necessary for the comparative interpretation required by *seem*. I have assumed that English *believe* type verbs and *estimate* type verbs in ECM constructions can be considered 'accusative' counterparts of 'nominative' *seem*. As a result, movement of AGR<sub>SP</sub> to SpecCP in the complement of *seem* and *believe* could both be motivated in terms of comparative Focus. For French *croire* constructions closely resembling English *believe* constructions with ECM, I have argued that there is no ECM and no movement of AGR<sub>SP</sub> to SpecCP in the complement of *croire*. As a result, there is no way in which two events can be compared in an operator - variable structure. It is therefore predicted, contrary to fact, that Full Interpretation is violated in French *croire* constructions, since the requirement of



comparison inherent in *croire*, the ‘accusative’ counterpart of ‘nominative’ *sembler*, cannot be satisfied.

However, this conclusion is unwarranted. I have indeed assumed that the subject of the infinitive in the complement of *croire* constructions does not get its case in the matrix SpecAGR<sub>O</sub>P, contrary to raising to SpecAGR<sub>O</sub>P in English, both overt (*believe*) and covert (*estimate*). This means that the AGR<sub>O</sub> of *croire* still has an accusative case- feature that must be discharged. The only argument that can license this feature is the infinitival CP complement itself, moving to SpecAGR<sub>O</sub>P at LF. It has been argued extensively in the literature that Romance infinitival complements fall under Case theory in the same way as ordinary NPs (cf. Contreras 1985, Picallo 1985, Raposo 1987, Plann 1986). This movement then creates the necessary relation between operator and variable, the CP complement of *croire* having operator status via its Focus on the event (cf. the discussion of (88)).

## 7. CONCLUSIONS AND CONJECTURES

### 7.1 Results

Let us summarize the results of the previous sections. I have argued that all raising constructions, both raising-to-subject (SpecAGR<sub>S</sub>P) with *seem* type verbs and raising-to-object (SpecAGR<sub>O</sub>P) with *believe* type verbs, involve CP complementation. This claim allows for a simplification of the types of sentential complements verbs can select for. The consequence of this assumption is that there must be movement of the infinitival AGR<sub>S</sub>P to SpecCP, feeding movement of the subject of the infinitive to the SpecAGR<sub>O</sub>P of the matrix verb. If AGR<sub>S</sub>P failed to move to SpecCP, movement of the subject of the infinitive to the matrix SpecAGR<sub>O</sub>P would result in improper movement. AGR<sub>S</sub>P movement to SpecCP is motivated by a [+Focus] feature in C°.

The configuration of the complement CP with a chain relating the AGR<sub>S</sub>P in SpecCP to its trace was further motivated by the semantics of *seem*, which was argued to involve a comparison between a token of the event and its type. Other differences between ECM and control constructions of *believe* type verbs, such as the absence of negative islands, can also be advantageously explained by analyzing the complement of *believe* type verbs in ECM constructions as a CP.

CP complementation of *believe* type verbs also allowed us to reduce the spectacular syntactic differences in English between *believe* type verbs and *estimate* type verbs in ECM contexts to a single parameter: overt or covert movement of AGR<sub>S</sub>P to the embedded SpecCP. The variation between English speakers with respect to the verbs following the syntactic *believe* type pattern or the *estimate* type pattern can be reduced to this parameter.

With respect to French, CP complementation of *believe* type verbs effectively prevents movement of the subject of the infinitive to SpecAGR<sub>O</sub>P. I have argued that [+Focus] infinitives in one variety of French (CF) have the possibility of independently licensing Case for the subject of the infinitive inside CP. The other variety of French (AF) was argued to only allow impersonal *pro* subjects in the infinitival complements of *croire* ‘believe’ type verbs.

### 7.2 Conjectures

In the analysis presented here, the difference between raising and control verbs does not lie in the categorial type of sentential complement these verbs select for (AGR<sub>S</sub>P or CP,

resp.). The configurational properties of raising and control CPs are nevertheless radically different. Raising of a subject out of its infinitival CP requires that the infinitival AGR<sub>S</sub>P first move to SpecCP. In control contexts, such AGR<sub>S</sub>P movement to SpecCP never obtains.

In the analysis presented here, this configurational difference gives rise to an interpretive semantics for raising CPs, which require operator - variable relations ranging over events. The question now arises as to how this analysis can be extended to the complementation of other raising verbs. Barbiers (1993, 1995) shows how the epistemic and deontic uses of modal verbs such as *moeten* 'must' and *kunnen* 'can' are influenced by Focus particles in Dutch. It is likely that these Focus particles determine the [+Focus] feature on C° which triggers movement of AGR<sub>S</sub>P to SpecCP, feeding overt movement of the subject of the infinitive to the matrix SpecAGR<sub>S</sub>P of *moeten* 'must' and *kunnen* 'can'.

The very same idea might be extended to aspectual raising verbs such as *begin*, *stop*, *resume*, *keep*, *continue*, *finish*.<sup>23</sup> In a loose sense, these verbs focus on a part of the internal temporal structure of the event expressed in their untensed complement, comparing as it were a subset of the event to the event itself. The analysis presented here allows for a configurational representation of this intuition, although a bit more work is required as to the exact semantics of the operator - variable relation in these cases.

Further research questions in this area include the problem of ECM with verbs of perception as in (3b), especially in the light of their relation with raising verbs of the *seem* type in languages such as English and Latin (cf fn. 13). In this context, it is interesting to note that raising verbs of the *seem* type are often derived from the semantic converse of *see*: Persian *be næzær residæn* 'seem' literally means 'reach to view' (Hajati 1977), and Dutch *schijnen* 'seem' also means 'shine' as in *the sun shines on us*, allowing for an interpretation of *Het schijnt dat Jan ziek is* 'it seems that John is sick' along the lines of 'That John is sick shines on me' (Hoekstra p.c.). Similar considerations apply to English *appear*.

Finally, the idea that raising verbs turn the embedded C° of their CP complement into an operator quantifying over events might also offer new insights into the problem of those verbs which can be used either as control verbs or as raising verbs. These include verbs such as *promettre* 'promise' and *menacer* 'threaten', *risquer* 'risk', *faillir* 'escape', verbs of movement such as *aller* 'go' and *venir* 'come' (Ruwet 1983, Rooryck 1992c). The use of these verbs as control verbs involves realizing one internal argument projected by the verb as an infinitive, while the raising use does not project any arguments at all.

- (96) a. Louis nous a promis [un livre]/ [de lire ce livre] (thematic, control)  
       'Louis promised us to read that book'  
       b. Il (\*nous) promet de pleuvoir (nonthematic, raising)  
       'it promises to rain'
- (97) a. Louis nous a menacé [du poing] / [de tout dire au doyen] (thematic, control)  
       'Louis threatened us with his fist/ to tell everything to the dean'  
       b. Il (\*nous) menace de pleuvoir (nonthematic, raising)  
       'it threatens to rain'
- (98) a. Il risque [sa vie] / de se faire tuer] (thematic, control)  
       'He takes the risk (of losing) his life / of getting killed'  
       b. Il risque de pleuvoir (nonthematic, raising)  
       It risks to rain        'It is probable that it will rain'

<sup>23</sup> Cf. ter Meulen (1990) for a description of aspectual verbs as Generalized Quantifiers in a three-dimensional square of oppositions which allows for an explanation of various semantic relations between aspectual verbs.

- (99) a. Il faillit [à son devoir] / [à faire son devoir] (thematic, control)  
 ‘He has failed at (carrying out) his responsibilities’  
 b. Il a failli pleuvoir (nonthematic, raising)  
 It has barely-escaped to rain  
 ‘There was a possibility of rain/ it almost rained’
- (100) a. Elle est allé [à la poste]/ [chercher des livres] (thematic, control)  
 ‘She went to the post office/ to look for books’  
 b. Elle va avoir un enfant (nonthematic, raising)  
 ‘She is going to have a baby’  
 c. Elle aura un enfant  
 ‘She will have a baby’
- (101) a. Elle est venu [de la poste]/ [chercher des livres] (thematic, control)  
 ‘She came from the post office / to look for books’  
 b. Elle vient d’arriver à Bruxelles (nonthematic, raising)  
 ‘She comes from to-arrive in Brussels’  
 She just arrived in Brussels

As pointed out by Ruwet (1983), the existence of such verbs is a challenge for a principle such as the theta-criterion. Any analysis based on a radical distinction between raising and control verbs is forced to assume homonymous pairs of verbs in these cases. But it should be clear that this only restates the problem. For one thing, it is striking that the nonthematic raising use of these verbs is semantically very restricted: it can be shown that these verbs involve an epistemic modal meaning of necessity or possibility.

Before making an attempt at explaining the dual nature of these verbs in a nonstipulative fashion, I would like to adequately illustrate the modal properties of the verbs involved. The epistemic modal ‘possibility’ reading of *risquer* and *avoir failli* is sufficiently clear from the glosses and translations in (98--99). The necessity reading of the so-called ‘futur proche’ *aller* can be deduced by comparing the contextual implications of the inflectional future in (100c) with those of the periphrastic future *aller* in (100b): (100b), but not (100c), implies that one is pregnant. (100c) can be said of a seven year old (she will have a baby when she is a grown up), but saying (100b) referring to a seven year old would be distinctly odd under normal assumptions about child-bearing age. This shows that *aller* carries the meaning of an ‘inescapable’, ‘imminent’ future. This interpretation of ‘imminence’ should be viewed as a result of the epistemic modal necessity inherent in *aller*: The sentence (100b) says that the necessary conditions for having a baby are present. Since one of these necessary conditions includes pregnancy, the interpretive difference between the future of *aller* ‘go’ and the inflectional future is accounted for if *aller* in (100b) carries not only the meaning of future but also that of necessity.<sup>24</sup> Interpretive notions such as ‘inescapable’ future and the traditional term *futur proche* then follow from the combination of the modal and the temporal characteristics yielding a property of ‘future necessity’ inherent in *aller*.

Another indication that modal necessity is involved in *aller* is that as a raising verb, *aller* cannot be used with a perfective aspect (102a). This is unexpected because inflectional future tense (102b) and the ‘possible’ periphrastic future *risquer* can cooccur with perfective aspect

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<sup>24</sup> It might be noted that something similar is the case for English *will* (‘possible’ future, *she will have two girls and two boys*) as opposed to *be going to* (‘necessary’ future: *She is going to have two girls and two boys*). Crosslinguistically, the necessity meaning is nevertheless not always linked up with the counterparts of *go/aller*. In Swedish, the auxiliary *ska* ‘will’ expresses necessary future in the context cited, whereas the auxiliary *kommer att* ‘go’ expresses the ‘neutral’ possible future.

(102c): if *aller* simply expressed a future, it should be combinable with perfective aspect, expressing a future perfective.<sup>25</sup>

- (102) a. \* Il est allé pleuvoir (demain matin)  
It is gone to rain (tomorrow morning)  
'It went to rain (tomorrow morning)'  
b. Il aura plu (demain matin)  
'It will have rained (tomorrow morning)  
c. Hier soir, il a risqué de pleuvoir à un moment donné  
'Yesterday evening, there was a risk of rain for a moment'

Now, it is generally the case that objective epistemic necessity is incompatible with perfective aspect. In (103a), the necessity of a raining event can only involve objective epistemic necessity,<sup>26</sup> and perfective aspect is excluded:

- (103) a. Il doit absolument / \*a absolument dû pleuvoir pour  
It must absolutely / have must absolutely to-rain in-order-to  
assurer les besoins en eau potable  
ensure the needs in water drinkable  
'Rain is/ was necessary to ensure the needs for drinking water'  
b. La pluie a été nécessaire pour assurer les besoins en eau potable  
'The rain has been necessary to ensure the needs for drinking water'

The sentence (103b) shows that objective epistemic necessity is not intrinsically incompatible with perfective aspect. Therefore, it is not clear to us why there is this aspectual constraint on objective epistemic necessity expressed by *devoir* 'must'. What is clear however is that the restriction that is responsible for ruling out the combination of *devoir*

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<sup>25</sup> Note that perfective aspect for the counterpart of *aller* 'go' and of epistemic *moeten* 'must' seems to be perfectly possible in Dutch:

- i. Het is gaan regenen                      ii. Het had moeten regenen om de oogst te redden

However, in these cases the usual perfective participle marked by *ge-* has been replaced by the infinitival form, a possibility that also exists in other complementation - even raising - structures where well-known word order differences are correlated with it:

- ii. Jan is begonnen/ beginnen een boek te lezen  
'Jan is begun a book to read'  
iii. Jan is een boek beginnen/ \*begoenen te lezen  
'Jan is a book begin to read' (Southern Dutch)

Importantly, in (i) the perfective participle is impossible:

- iv. \*Het is gegaan regenen  
v. \*Het had gemoeten regenen om de oogst te redden

It seems then that the structures in (i) are saved by the switch of participial morphology to infinitival morphology. I have no further explanation for this intriguing fact.

<sup>26</sup> Lyons (1977) makes the distinction between objective epistemic necessity and subjective epistemic necessity: the latter is necessity related to the world of the speaker as in (i).

- i. Il doit/ a dû faire chaud dans le Kalahari aujourd'hui  
'It must be/ have been warm in the Kalahari today'

Subjective epistemic necessity involves probability. Importantly, this subjective epistemic meaning of *devoir* 'must' can be combined with perfective aspect.

‘must’ and perfective aspect can also be invoked to rule out the combination of *aller* and perfective aspect, if it is assumed that *aller* involves a modal epistemic operator of necessity.

Finally, this idea must be extended to the recent past *venir de* in (101). I would like to suggest that it involves past necessity in the same way *aller* involves future necessity. The argument for this analysis is harder to make than for *aller*, and needs a little more work. This may be due to the fact that *venir de* also involves an aspectual feature of punctuality as observed by Ruwet (1983). However, like *aller* in (102) and *devoir* ‘must’ in (103a), *venir de* cannot be combined with perfective aspect:

- (104) Elle vient/ venait/ \*est venu d’arriver à Bruxelles  
 She comes/ came/ has come from to-arrive in Brussels’  
 ‘She just arrives/ arrived in Brussels’

I would like to suggest that the incompatibility of *venir de* with perfective aspect is due to the same restriction that applies to *aller* in (102) and *devoir* ‘must’ in (103), namely the general incompatibility of perfective aspect with objective epistemic necessity.

Similar considerations extend to *promettre* ‘promise’, *menacer* ‘threaten’. From a temporal and modal perspective, the raising construction of *promettre* ‘promise’ seems to be closely related to *aller*, carrying an additional positive connotation, while *menacer* ‘threaten’ seems to be basically a variant of *risquer* ‘risk’, with pejorative import. Note that *promettre* ‘promise’ does not allow for a perfective tense, like *aller* ‘go’, while *menacer* ‘threaten’ does, like *risquer* ‘risk’.

- (105) a. Il promet/ \* a promis de faire beau  
 It promises/ has promised to do nice (weather)  
 ‘The weather promises to be nice =  
 the necessary conditions for nice weather are present’  
 b. Il menace/ a menacé de pleuvoir  
 ‘It threatens/ has threatened to rain’ = it will possibly rain).

The modal necessity present in *promettre* ‘promise’ and the modal possibility implied in *menacer* ‘threaten’ in (106a--107a) can be deduced from the interpretation of these sentences in (106b--107b):

- (106) a. Cette maison menace de s’écrouler  
 ‘This house threatens to collapse’  
 b. It is possible/ \*? necessary that this house will collapse  
 Certain conditions are present for this house to collapse  
 (107) a. Cette maison promet d’être un havre de paix  
 ‘That house promises to be a haven of peace’  
 b. It is \*? possible/ necessary (inevitable) that this house will be a haven of peace  
 All conditions are present for this house to be a haven of peace

The following chart illustrates the combinations of tense and modality in French raising verbs expressing Tense:

(108)

	<i>objective epistemic necessity</i>	<i>objective epistemic possibility</i>
<i>future</i>	aller/ promettre	risquer/ menacer
<i>past</i>	venir de	avoir failli

These epistemic modal properties of raising verbs expressing Tense are rather unexpected: why isn't it the case that at least some raising verbs simply express a nonmodal Tense similar to those expressed by inflectional bound morphemes in French? For instance, why isn't there a raising verb with a nonmodal meaning similar to the past or future tense? The verbs under discussion function as control verbs when they project their canonical thematic structure, without modal properties, and they function as raising verbs when their thematic structure disappears in favor of a combination of temporal and modal properties. This complementary distribution leads us to formulate the following generalization:

- (109) Verbs which 'lose' their canonical thematic structure to function as raising verbs receive a meaning which combines temporal properties with epistemic modality.

The question thus arises as to how this generalization can be explained. Recent thoughtprovoking work by Postma (1994, 1995) may provide a tentative answer to this problem. Postma (1994, 1995) raises the novel problem as to how the interpretation of NPs arises. He observes that (110a) involves the perception of an actual ball or dog, while (110b) has two interpretations. The first, and least interesting interpretation of (110b) is one in which the sentence simply refers to the fact that one doesn't see an actual ball or dog (110b.i). In the second interpretation (110b.ii), the nouns *ball* and *dog* have lost their fully referential meaning to function as negative polarity items with universal meaning.<sup>27</sup> To use Postma's (1994) terms, the nouns lapse into zero-semantics. Postma (1994) shows that this second interpretation does not allow the nouns to take plural morphology: (110c) can only refer to actual balls and dogs.

- (110) a. Ik zie een bal/ hond  
'I see a ball/ a dog'
- b. Ik zie geen bal/ hond  
i. 'I don't see a ball/ dog'  
ii. 'I don't see anything/ anyone'
- c. Ik zie geen ballen/ honden  
'I don't see balls/ dogs' / '\* I don't see anything/ anyone'

A similar process is operative in coordinations such as (111), where the lexical meaning of the elements disappears in favor of a universally quantified meaning (Postma 1994):

- (111) a. Het schip verging met man en muis  
'The ship went down with man and mouse (= with everyone on it)'
- b. Zij deed haar werk met hart en ziel  
'She did her job with heart and soul (= with every vein)'

<sup>27</sup> English has something similar: the NP *shit* in *I didn't see shit* does not usually refer to actual excrement, but means 'anything'.

Postma (1994) shows that the process by which nouns lose their lexical meaning to function as quantificational elements is extremely productive in natural language. He observes that there is a complementary distribution between lexical and quantificational meaning. Postma (1994) proposes an interpretive mechanism by which nouns are assigned quantificational or lexical meaning configurationally. I refer the reader to Postma (1994, 1995) for the details of this far-reaching hypothesis.

What is important to us in this context is an issue that is not yet fully addressed by the interpretive mechanism Postma (1994) proposes. It is striking that the nouns in (110--111) do not entirely lose their meaning in favor of universal quantification, but seem to retain some basic syntactico-semantic features. In (110) *hond* 'dog' retains the feature [+Animate], referring to 'any person' in zero-semantics, while *bal* 'ball' retains the [-Animate] feature, referring to 'anything'. The same is true in (111), as is clear from the glosses and translations.

Let us now come back to the verbs under study, which can function both as 'thematic' control verbs and 'nonthematic' raising verbs. These verbs lose their lexical 'fully thematic' meaning in favor of a meaning combining epistemic modality and temporal properties. It is well known that epistemic modality can be described as involving universal quantification. I therefore claim that the verbs described above function exactly like *bal* 'ball', *hond* 'dog', *man en muis* 'man and mouse' and *hart en ziel* 'heart and soul' in (110--111). In the same way as these nouns, the verbs mentioned lose their lexical semantics in favor of universal quantification (= epistemic modality), while at the same time retaining some of their syntactico-semantic features. More in particular, in the same way nouns such as *bal* 'ball' and *hond* 'dog' retain their [ $\pm$ Animate] features, these verbs retain their lexical features of referring to past and future.<sup>28</sup> In other words, the raising use of *aller* 'go', which involves both modal or universally quantified meaning and the feature [future], receives its (quantificational) zero-semantics through the same interpretive mechanism proposed by Postma (1994) for the universally quantified, [+Animate] *hond* 'dog' in (110b.ii). *Mutatis mutandis*, the same applies to the other verbs schematically represented in (108) with the semantic features characterizing their raising use. The complementary distribution between the control use and the raising use of these verbs can thus be explained by independent principles operative in the grammar.

From a purely syntactic point of view, it must be noted that both the control and the raising use of the verbs under investigation involve a CP complement. In the context of the ideas developed in this paper, the switch from control to raising does not entail some process of CP deletion. The only change concerns the interpretation of the CP complement. The modal property acquired by the verb imposes a modal interpretation on the C° head of CP, triggering movement of AGR<sub>S</sub>P to SpecCP, and subsequent raising of the infinitival subject to the matrix SpecAGR<sub>S</sub>P. The interpretation of the CP as a full argument in a thematic structure does not trigger such movement, and a control configuration ensues.

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<sup>28</sup> It is also remarkable that the beneficiary/ maleficiary interpretation for the Goal argument in the 'thematic' use of verbs such as *promettre* 'promise' and *menacer* 'threaten', as well as the negative connotation of 'risk' in *risquer* 'risk', seem to be retained in the 'nonthematic' use of these verbs in raising contexts. In these cases, the meaning is slightly changed to the positive (*promettre* 'promise') or negative (*menacer* 'threaten', *risquer* 'risk') consequences of the possible or necessary situation.

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