

The Correspondence between Functional Categories and Semantic Features in the ECM Construction*

Hiroyuki Nawata

1. Introduction

The purpose of this paper is to examine the relevance of functional categories for the exceptional Case-marking (ECM) construction as in (1) with special reference to the selectional property of the matrix verb :

(1) John believes Bill to have lied.

I would like to start by pointing out the well-known fact that the ECM construction is characteristic of English and other few languages. French *believe*-type cognitive verbs (henceforth B-type verbs), for example, do not allow this construction :

(2) *Jean croit Bill avoir menti .

J. believes B. have-INF lied (Kayne (1984 : 103))

Interestingly, French counterparts of English ECM verbs can take the control construction :

(3) a. *I believe/acknowledge/affirm PRO to have made a mistake.

b. Je crois/reconnais/affirme PRO avoir fait une erreur.

(ibid. : 112)

The contrast between (1) and (3a) on one hand and (2) and (3b) on the other shows that French *croire* is not an ECM verb but a control verb like

English *try*. Kayne (1984) and Ura (1993) argue that the complement structures of *believe* and *croire* are as follows :

- (4) a. believe [_{TP} Subj to [_{VP} infinitive. . .]]
 b. croire [_{CP} [_{TP} PRO [_{VP} infinitive. . .]]]

Two points are to be addressed with respect to the structures in (4) : we must consider whether French *croire* really takes CPs, and if this is the case, we must further answer the question of why *believe* and *croire*, which express the same meaning, that is, have the same s-selectional property, exhibit different structural realizations of their complements.

A related problem concerning the ECM construction is the peculiar behavior of a group of verbs including *say* and *rumor*, exemplified in (5) :

- (5) a. *Mary said John to be tall.
 b. John was said to be tall.
 c. *John rumors Bill to be tall.
 d. Bill is rumored to be tall.
 e. *He alleged Melvin to be a pimp.
 f. Melvin was alleged to be a pimp.

(Brame and Baker (1972 : 65-67), Postal (1974 : 304))

These verbs are obligatorily passivized when they take the ECM construction. Note that (5a) cannot be ruled out in terms of the lack of Case-assigning property of *say*, since it can take an object DP :

- (6) I can say it by heart.

In this paper, I will attempt to clear up these problems by proposing (7) :

- (7) [Proposition] is a semantic feature that is carried by some functional category.

The organization of this paper is as follows. Section 2 illustrates a structural difference between infinitival complements in English and Romance languages including French by comparing causative constructions in these languages. On the basis of this difference, section 3 explains why

only English allows the ECM construction. Finally, section 4 discusses the phenomenon observed in (5).

2. A Structural Difference between Two Infinitives

In this section, it will be shown that infinitival clauses in English and Romance languages belong to different syntactic categories. To put it concretely, it will be argued that while English infinitives are TPs, French and Spanish infinitives are best analyzed as VPs. To begin with, I will compare causative verb complements of these languages on the basis of two diagnoses. Then, the result will be extended to all infinitives including ECM complements.

2.1 Diagnoses of the Categorial Status of Infinitives

2.1.1 Raising Verbs

A first difference between English and French infinitives is that in English raising verbs can appear as the complement of causative verbs whereas in French they cannot :

- (8) a. His pained expression makes John seem to be suffering.
 b. *Son expression peinée fait sembler Jean
 his expression pained makes seem-INF J.
 souffrir.
 suffer-INF (Kayne (1975 : 254))

The ungrammaticality of the French example can be explained by the Predication Condition originally proposed by Rothstein :

(9) *The Predication Condition*

Every syntactic predicate must be syntactically saturated.

(cf. Rothstein (1995 : 503))

Suppose that in order for a predicate to be syntactically saturated it must

be c-commanded by an appropriate DP at S-structure or before Spell-Out.¹ Raising verbs such as *seem*, which do not have external arguments, must be c-commanded by an expletive or DP that has raised out of the complement. In (8b), *Jean* remains within the infinitival complement of *sembler*, resulting in a violation of (9).

Now, why cannot the operation that raises *Jean* be applicable in (8b), as in (8a), to save the violation of the Predication Condition? I claim that this is due to the difference in the categorial status of infinitival complements in these languages. In the explanation below, we will follow the Minimalist assumption that an operation applied to satisfy the Predication Condition must be independently motivated by a formal requirement to check some feature. In other words, (9) itself is not a trigger for movement.

Let us first look at the derivation of the grammatical English sentence. If English infinitives are TPs as is widely assumed, the derivation proceeds as follows :

- (10) $[_{TP1} \text{John}_i [_{VP1} \text{seem} [_{TP2} t_i' \text{ to } [_{VP2} t_i \text{ be suffering}]]]]$
-

The subject *John* moves from the most deeply embedded [Spec, VP2] to [Spec, TP1] to satisfy the Extended Projection Principle (EPP). Chomsky (1995) observes that the EPP reduces to a strong D-feature of T. If this is the case, then the movement of *John* must be overt ; otherwise the derivation would crash, because a strong feature must be eliminated as soon as it is introduced in a phrase structure (ibid. : 234). Since *John* c-commands *seem* before Spell-Out, (10) meets the Predication Condition.

The immobility of *Jean* in (8b) means that there is no EPP effect, which in turn suggests the lack of T node in the French infinitival complement :

- (11) $[_{VP1} \text{sembler} [_{VP2} \text{Jean souffrir}]]$
-

VP1 contains no strong feature to induce the EPP and thus *Jean* does not

hand, in (14b) *firemen* is mapped into a restrictive clause, which means that it is in [Spec, IP] at LF.

If the infinitival complement in (12) is TP, the generic reading would be obtained as well as the existential reading, as is the case in (14). Moore argues that the generic reading is unavailable because the infinitival complement lacks a TP node that is necessary for the mapping into a restrictive clause.

In the English ECM construction, embedded subjects allow both interpretations :

- (15) I believe firemen to be available. (both generic and existential)
 (ibid. : 140)

This is predicted if English infinitives are TPs.

2.2 Indirect Causation and [−Finite]

So far, we have shown a structural difference between causative verb complements in English and Romance languages on the basis of the two diagnoses : raising verbs and the interpretation for the subject of infinitives. Let us then inquire into the locus of the [−Finite] feature. It is widely assumed that [−Finite] of English infinitives is borne by the head T. If French causative verb complements are VPs, they might be predicted to involve no [−Finite] feature, or if there is one, it must be made clear where it is located. I will claim below that it is the inflectional suffix of infinitives that bears [−Finite] in French.

Consider the following example :

- (16) Jules a fait cuire le poulet.

J. has made boil-INF the chicken (Jones (1996 : 441))

This sentence is ambiguous as to whether the embedded verb *cuire* is intransitive or transitive. When it is used intransitively, (16) can be paraphrased into the lexical causative sentence in (17a). On the other hand,

feature *is* not allowed to appear in a phrase marker under the bare phrase structure theory developed by Chomsky (1994), a null T without any feature cannot be projected.

One may wonder whether the pre-infinitival *de* in (22) is a French equivalent of English *to* and generated as T :

- (22) Je lui ai dit de partir.
 I him-CL have told leave-INF
 'I told him to leave.'

However, Kayne (1984) and Jones (1996) among others argue that *de* is a complementizer and must be paired with *for*. Like *for*, *de* causes a doubly-filled COMP effect :

- (23) a. Je lui ai dit où aller.
 I him-CL have told where go-INF
 'I told him where to go.'

b. *Je lui ai dit où d'aller.

c. *I told him where for her to go. (Kayne (1984 : 104-105))

(23b) can be ruled out for the same reason as (23c). Then, we will assume the contrast in (24) to hold for all cases including ECM infinitives :

- (24) French, Spanish : [_{VP} V-re ([-Finite])]
 English : [_{TP} T ([-Finite]) [_{VP} V]]

3. A Unified Analysis of ECM Verbs

3.1 A Restriction against VP Complements

Keeping in mind what has been said above, let us now return to the syntactic behavior of English and French ECM infinitives we have reviewed in section 1. Note that verbs that appear in the ECM construction such as *believe* and *consider* can also take small clauses as their complements. This holds true with the French counterparts as well :

- (25) a. I consider [John a genius].
 b. John believes [Mary proud of herself].
 c. Il croit [cette femme son amie].
 he believes that woman his friend.
 ‘He believes that woman his friend.’
 d. Personne ne pensait [la situation si sérieuse].
 nobody NEG thought the situation so serious
 ‘Nobody thought the situation so serious.’

It should be emphasized that English small clauses that occur with B-type verbs are usually headed by N or A. VP small clauses as in (26) are never allowed :

- (26) *I believe him have gone.

Compare the English ECM construction and the ungrammatical French sentence once again :

- (27) a. John believes Bill to have lied. (= (1))
 b. *Jean croit Bill avoir menti.
 J. believes B. have-INF lied (= (2))

Now that it is established that French infinitives are VPs, it follows that (27b) corresponds to (26), not to (27a). We may therefore reasonably conclude that (27b) is ungrammatical not because the ECM construction does not exist in French, but rather because B-type cognitive verbs in general cannot take VP complements. (28) summarizes this restriction :

- (28) believe/croire+{NP, AP, *VP}

If the present analysis is on the right track, the “exceptionality” of the English ECM construction disappears. The availability of this construction can be reduced to the categorial status of infinitives : English allows the ECM construction because it has a more articulated structure of infinitives than French.

3.2 Proposition and Functional Categories

Our next task is to make clear why B-type verbs cannot take VP complements while allowing TP complements. We will focus on this matter in this section.

The semantic property common to all B-type verbs is that they s-select [proposition] :

(29) believe : _____[proposition]

The term “proposition” is defined here as a semantic unit that has its own truth value. Consider (30) :

(30)	She	{	believes	}	{	that proposition	(Bach (1977 : 641))
			proves			that fact	
						*that state of affairs	
						*this eventuality	

Noun phrases that denote some event or state of affairs without truth values cannot appear as complements of B-type verbs. This supports the selectional restriction in (29).

On the other hand, the sentential complements of causative verbs and perception verbs do not express propositions. The following examples illustrate the contrast :

- (31) a. Bill thinks that Carol probably lied.
 b. *Bill saw Carol probably running in the park.

In (31a), the modal adverb *probably* can occur within the embedded clause. This adverb modifies the content of the proposition (cf. Nakano (1996)). In contrast, it cannot occur in the same environment in (31b), because the embedded clause does not have any propositional content. We must keep in mind that when *see* means “find out, understand,” its complement can express propositions as well, but in that case, the complement is always realized as a finite clause or a TP infinitive : ⁴

- (32) a. At first I did not see that she was so stingy.

b. We saw the project to be impracticable.

If we assume that perception verb complements are VPs following Safir (1993) and others, then we are led to conclude that a VP complement cannot express a proposition with its own truth value. From these grounds, I propose the condition in (33) :

- (33) [Proposition] is a semantic feature that is carried by some functional category.

To put it intuitively, although bare VP infinitives can express events, they must be further dominated by some functional category when they express propositions. If this is the case, we can straightforwardly explain why B-type cognitive verbs cannot select VP complements. The functional category T in English infinitives plays a crucial role in expressing propositions.

Evidence for the existence of the semantic feature [proposition] is provided by the well-known restriction on ECM infinitives : they cannot occur with event predicates, as exemplified in (34) :

- (34) a. *John believed Mary to bring the beer.
 b. *I proved John to bring the beer. (Martin (1992 : 15))

The event feature <E> is again relevant here. Suppose that T has only one slot that determines propositional/eventive interpretation of infinitives. Then, the feature [proposition] would occupy the same slot that <E> has been discharged :

- (35) . . . believed [_{TP} Mary to(T) bring the beer]
-
- $$\left[\begin{array}{c} \uparrow \\ \text{no selection} \\ \uparrow \end{array} \right] \left[\begin{array}{c} \uparrow \\ \text{no selection} \\ \uparrow \end{array} \right]$$

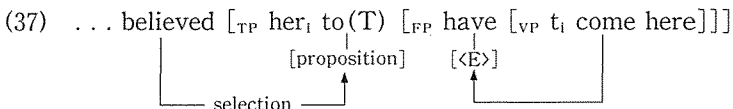
In (35), the s-selectional property of *believe* is not met because the slot in which [proposition] should be present is already occupied by <E> that is discharged from *bring*. It thus can be said that the feature conflict between <E> and [proposition] prevents B-type verbs from occurring with event

predicates, which in turn verifies the existence of [proposition].⁵

It may be worth mentioning, in passing, that B-type verbs can take event predicates as their complements when they are embedded under auxiliary *have*, as in (36a), or express habitual meanings, as in (36b) :

- (36) a . John believed her to have come here.
- b . John believed the cat to catch a mouse.

Our analysis can deal with these examples as well. As for (36a), auxiliary *have* is an overt realization of the embedded reference time (cf. Hornstein (1990)), so that it can receive <E> discharged from the past participle : ⁶



The selectional property of *believe* is also satisfied ; thus it becomes acceptable. In (36b), the <E> feature of *catch* remains undischarged, since the event specification of a habitual verb does not have to be anchored to a specific reference time (see (18)). Again, the embedded T carries [proposition] that is selected by *believe* and the sentence is acceptable.

How should small clause complements like (25) be dealt with in the light of (33) ? If small clauses are maximal projections of N or A, they would not be qualified to express propositions for the same reason that VPs cannot. What is important to note here is that (33) does not specify any particular functional category that contains [proposition] ; thus, it allows the following options :

- (38) [Proposition] is located in {T, Agr, D, C}.

These options, indeed, are the crucial key to explain the wide range of complementation of B-type verbs. As for small clause complements, we assume that they are AgrPs, following Endo (1991), Suzuki (1991), and Chomsky (1993) among others. The examples (25a, d) will have the structure in (39) :

(39) a. I consider [_{AGR_P} John_i Agr [_{NP} t_i a genius]].

b. Personne ne pensait [_{AGR_P} la situation_i Agr [_{AP} t_i si sérieuse]].

In these cases, [proposition] is located in Agr. The empirical grounds for positing this abstract category is that predicates in small clauses exhibit obligatory agreement with their subjects in gender and number in French.

When [proposition] is in D, the third option in (38), we get noun phrase complements as in (30), repeated here :

(40) a. She believes [_{DP} that proposition].

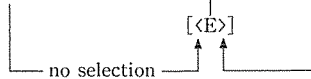
b. She proves [_{DP} that fact].

The ungrammaticality of (41a) can be explained in much the same way as we did for (34) :

(41) a. ? *We are aware of the decision to leave the company.

(Ormazabal (1994 : 479))

b. . . . be aware of [_{DP} PRO the(D) decision to leave. . .]



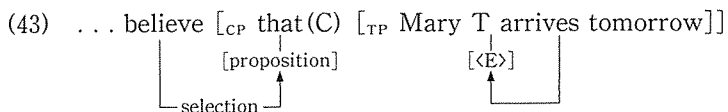
Be aware of, like *believe*, s-selects [proposition] and cannot occur with event nominals such as *decision*. In (41b), the slot where [proposition] should be present is already filled with <E> discharged from *decision* ; consequently, the selectional property of *be aware of* is not satisfied when its complement describes an event, not a proposition as in (40).

When C is selected as the locus of [proposition], the complement of B-type verbs is realized as *that*-clauses. What is interesting is that whereas ECM infinitives do not occur with event predicates, *that*-clauses escape from this restriction :

(42) a. *I believe Mary to arrive tomorrow.

b. I believe that Mary arrives tomorrow.

The grammaticality of (42b) is correctly predicted under our approach :



Since [proposition] is in C, it does not conflict with <E> discharged to T by *arrive* ; thus, the s-selectional restriction of *believe* is properly satisfied.

3.3 Control Infinitives with Cognitive Verbs

Having provided grounds for postulating the condition (33), let us expand our argument into control infinitives with B-type cognitive verbs. As a consequence of (33), the infinitival complement of *croire* must contain some functional category that carries [proposition] :

(44) Je crois [α PRO avoir fait une erreur].

We must make clear what α is. Obviously, it cannot be TP, since we have proved in section 2 that French infinitives do not contain TP. Nor can it be DP because *avoir* is a verbal element and DPs in general dominate only nominal elements. The only exceptional case where DP dominates VP is a verbal gerund. It has the same distribution as a nominal and its subject appears as a possessive. Abney (1987) proposes that gerunds should be analyzed as VP complements of D. Nevertheless, we do not adopt this structure for French infinitives since their subjects never appear as possessives. The possibility of Agr is also ruled out since French infinitives, unlike predicative nominals and adjectives, do not manifest overt agreement endings. The only candidate for α , therefore, is CP :⁸

(45) croire [_{CP} [_{VP} V (-Finite)]]

This CP-VP structure has some empirical advantages. First, the ungrammaticality of (2), repeated here as (46), follows directly :

(46) *Jean croit [_{CP} [_{VP} Bill avoir menti]].

Bill must move to the matrix Case-checking position, but this movement is blocked by the intervening CP boundary, which breaks A-chains.⁹ There-

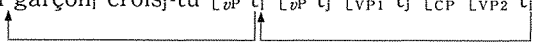
fore, lexical subjects cannot appear in the infinitival complement of *croire*.

Secondly, the CP-VP structure correctly predicts that the acceptability of the ECM construction improves when lexical subjects undergo A-bar movement, as in (47) :

- (47) Quel garçon crois-tu être le plus intelligent de tous ?
 which boy believe-you be-INF the most intelligent of all
 ‘Which boy do you think to be the most intelligent of all ?’

(Kayne (1984 : 111))

Note that although CP always blocks A-movement, it does not block A-bar movement unless its specifier is occupied by some element. The derivation of a sentence involving a [+wh] subject in the infinitival complement proceeds as follows :

- (48) $quel\ garçon_i\ crois_j\text{-}tu\ [_{vP}\ t_j\ [_{VP1}\ t_j\ [_{CP}\ [_{VP2}\ t_j\ être$

 le plus intelligent]]]]]

Here we follow Ura’s (1993) analysis of feature-checking for *wh*-traces and assume that *quel garçon* in (48) checks its Case at the position adjoined to *vP*, the maximal projection of the matrix light verb. Since adjunct positions generally count as A-bar positions, the movement from [Spec, VP2] is not blocked by the intervening CP. Therefore, the A/A-bar asymmetry concerning extraction of subjects from the infinitival complement is reduced to the presence of the CP node, which is selected by *croire* as the locus of [proposition].

However, it remains to be explained why English B-type cognitive verbs cannot take control infinitives as in (3a), repeated here :

- (49) *I believe [_{TP} PRO to have made a mistake].

Under the current Minimalist framework, we cannot rule out this example on the grounds that PRO is governed, because the notion “government” is abandoned. It might be claimed that the ungrammaticality is due to the

failure of Null Case checking as argued by Chomsky and Lasnik (1993) and Martin (1992), but this approach is highly dubious both conceptually and empirically, though I do not discuss this matter since it will take us too far afield (see note 5).

Here, I basically adopt Authier's (1991) approach to this problem. Putting aside technical details, he argues that the crucial factor is the Case-assigning properties of *believe* and *croire*: while the Case feature of the former must be phonetically realized, that of the latter need not. Then, I will assume that an accusative Case feature is obligatorily assigned to the lexical entry of *believe* when it is thrown into the computation whereas it is optionally assigned to *croire*:

- (50) a. *believe* : _____ [proposition], [+Case]
 b. *croire* : _____ [proposition], ([+Case])

In (49), the Case feature of *believe* remains unchecked at LF, and the derivation crashes.¹⁹ French *croire*, on the other hand, allows PRO to appear in the complement when a CP boundary intervenes that prohibits lexical subjects.

3.4 The Status of Agr

The present theory has one theoretical consequence for the foundations of functional categories, especially for the status of Agr. Since the advent of the split-Infl hypothesis of Pollock (1989), there has been much controversy as to what functional categories to posit in the phrase structure theories. As a solution to this problem, Chomsky (1995) proposes that only functional categories that have features interpretable at LF are legitimate syntactic objects. Agr, which he claims only provides positions for some element to be interpreted and never participates in interpretation for itself, is eliminated in his theory. The argument above suggests that this move is correct for AgrO but incorrect for AgrS. B-type verbs cannot take VP

complements because [proposition] cannot find its appropriate position, which suggests that there is no AgrOP dominating VP even when an embedded infinitive is transitive. In contrast, the fact that small clauses can express propositions indicates that the Agr relevant to agreement with subjects is able to carry the interpretable feature [proposition] and thus it is a legitimate object at LF. To summarize the correspondence between functional categories and semantic features, we get (51) :

- (51) T : [\pm Finite], [proposition]
 D : the locus of “referentiality”, [proposition]
 C : clause type, [proposition]
 Agr(S) : [proposition] (cf. Chomsky (1995 : 240))

Thus, AgrS and AgrO are given different status with respect to interpretability at LF. This is a departure from the spirit of Chomsky (1993) that claims AgrS and AgrO basically fulfill the same function.

5. Verbs that select CP

Finally, let us consider ECM verbs that are obligatorily passivized :

- (52) a. *Mary said John to be tall.
 b. John was said to be tall.
 c. *John rumors Bill to be tall.
 d. Bill is rumored to be tall.
 e. *He alleged Melvin to be a pimp.
 f. Melvin was alleged to be a pimp. (= (5))

Here again, the selectional property of the matrix verb helps to account for these cases. The important point is that *say*, *rumor*, and *allege* belong to verbs of saying, which describe speech acts of their subjects. Verbs of saying are further divided into several subclasses according to the types of speech acts they report, and the verbs under discussion all describe state-

ments. Their s-selectional restriction thus can be represented as follows :

(53) say : _____ [statement]

As has been observed in (51), semantic features that determine the types of speech acts are situated in C. It follows that verbs of saying obligatorily select CPs (in this case, *that*-clauses) :

(54) They say that John is tall.

Therefore, (52a, c, e) are properly ruled out because they select TP infinitives. Even if the complements include phonetically null C like French B-type infinitives, then the CP boundary will block the movement of the subject of infinitives for Case-checking.

The next question is why (52b, d, f), in which TPs are selected, are well-formed. The key to these cases is the fact that a verb of saying does not report a particular speech act when it is passivized. (55) is a good illustration of this fact :

- (55) a. *John was said to be tall by Sam.
 b. *Bill is rumored by John to be tall.

(Brame and Baker (1972 : 65-67))

When the Agent of the speech is specified by *by*-phrases, sentences with these verbs become ungrammatical even if they are passivized. This shows that the passive forms of verbs of saying do not select [statement] ; rather, as Brame and Baker (1972) point out, the meanings of *be said* and *be rumored* are reminiscent of those of raising verbs, such as *seem* and *appear*. It thus seems reasonable to suppose that a verb of saying and its passive participle constitute different lexical items and that the latter selects [proposition] :

(56) be said : _____ [proposition]

In this case, CP-selection is not obligatory since the features responsible for the types of speech acts are irrelevant. When TPs are selected, the subject of infinitives moves to the matrix [Spec, TP] to check its Case, deriving

(52b, d, f).

We may note, in passing, that several verbs including *rumor* do not take *that*-clauses as their complements :

(57) *John rumors that Bill is tall. (ibid. : 67)

It follows from the discussion above that this is due to the absence of the original form of *rumor* as a verb of saying in the lexicon : it includes only the passive form of *rumor* :

(58) a. *rumor : _____ [statement]
 b. be rumored : _____ [proposition]

In this section, I have given an explanation for ECM verbs that are obligatorily passivized.¹¹

6. Concluding Remarks

Summarizing the correspondence between functional categories and semantic features that have been dealt with, we get (59) :

(59) [CP [TP (AgrP) [VP]]]
 proposition

 statement

Since [proposition] is a semantic feature carried by some functional category, VPs cannot express propositional content ; therefore, the complement of ECM verbs must be realized at least as TP or AgrP. I have argued in section 2 that French infinitives are VPs. This is the crucial factor that prevents ECM infinitives from following French B-type cognitive verbs. Additionally, verbs of saying obligatorily take CP complements. I explained this fact by positing that semantic features that determine the types of speech acts are situated in C.

*This is an expanded and revised version of the paper read at the 35th annual meeting of SELN on April 20, 1996.

Notes

¹ I assume here that (9) is applied to X^0 level categories ; thus it somewhat deviates from Rothstein's original formulation that defines a syntactic predicate as an XP.

² Here, the distinction between direct and indirect causation is dependent on the presence of an intermediate Agent in the causal relation, so that (17b) is an instance of indirect causation even if the causer acts "directly" towards the causee.

³ In English, where infinitives lack inflectional suffixes, the indirect causative reading becomes available when the $\langle E \rangle$ feature of an embedded verb is discharged to the phonetically null T, in which [-Finite] is present :

(i) [_{TP} John T made [_{TP} Bill T do the work]]
 ↑_{⟨E⟩} ↑_{⟨E⟩}

⁴ An anonymous reviewer points out that the example of (31a) does not imply that B-type verbs s-select propositions, since *probably* cannot occur in (32a) :

(i) *At first I did not see that she was probably so stingy.

However, I speculate that (i) is ungrammatical because negative *not* takes scope over *probably*, which has an affirmative entailment. If so, the argument in the text can be maintained.

⁵ Although Ormazabal (1994) and Tanaka (1996) account for the incompatibility of ECM verbs with event predicates in terms of Null Case checking, I do not share the view that PRO has Null Case. See Nawata (1997) for arguments against the Null Case hypothesis.

⁶ We assume here that *have* heads a functional projection FP, following Ritter and Rosen (1997).

⁷ For the distinction between a verbal projection and a nominal projection, see Grimshaw (1991).

⁸ Note that in (45), the selectional restriction of C is strictly observed in the

same way as in English-type CP-TP structure, since C directly selects the [-Finite] feature that percolates up to the lexical head V. See (20) in section 2.2.

- ⁹ I tentatively assume here that the ECP is violated in (46) : the CP becomes a barrier for A-movement by inheritance from the VP. Even if the subject moves via [Spec, CP], it then forms an improper chain. For an attempt to deduce the impossibility of A-movement out of CPs from the Principle of Economy, see Takahashi (1992).
- ¹⁰ It is predicted that a *that*-clause complement would yield the same effect, which poses a potential problem. One possible approach is to follow Stowell (1981) and assume that in such a case a *that*-clause undergoes a rightward movement and the trace left behind is assigned accusative Case. Alternatively, it might be the case that a Case feature and the syntactic category of the complement are linked with each other and a Case feature is obligatorily chosen when the complement is TP, but not when it is a *that*-clause.
- ¹¹ As Postal (1974) argues at length, there are several verbs such as *estimate* that exhibit the same behavior as verbs of saying. These verbs might require a different explanation, but I leave this matter open here.

References

- Abney, S. P. (1987) *The English Noun Phrase in its Sentential Aspect*, Doctoral dissertation, MIT.
- Authier, J. (1991) "V-Governed Expletives, Case Theory, and the Projection Principle," *Linguistic Inquiry* 22, 721-740.
- Bach, E. (1977) "Review of Postal : *On Raising*," *Language* 53, 621-654.
- Brame, M. and C. Baker (1972) "'Global Rules' : A Rejoinder," *Language* 48, 51-75.
- Chomsky, N. (1993) "A Minimalist Program for Linguistic Theory," in K. Hale and S. Keyser, eds., *The View from Building 20*, MIT Press, Cambridge, Mass.

- Chomsky, N. (1994) "Bare Phrase Structure," *MIT Occasional Papers in Linguistics* 5, Department of Linguistics and Philosophy, MIT.
- Chomsky, N. (1995) "Categories and Transformations," in *The Minimalist Program*, MIT Press, Cambridge, Mass.
- Chomsky, N. and H. Lasnik (1993) "Principles and Parameters Theory," in J. Jacobs, A. von Stechow, W. Sternefeld, and T. Vennemann, eds., *Syntax : An International Handbook of Contemporary Research*, Walter de Gruyter, Berlin.
- Diesing, M. (1992) *Indefinites*, MIT Press, Cambridge, Mass.
- Endo, Y. (1991) "The Syntax and Semantics of Small Clauses," in H. Nakajima and S. Tonoike, eds., *Topics in Small Clauses*, Kurocio, Tokyo.
- Grimshaw, J. (1991) "Extended Projection," Ms., Brandeis University.
- Higginbotham, J. (1985) "On Semantics," *Linguistic Inquiry* 16, 547-593.
- Hornstein, N. (1990) *As Time Goes By : Tense and Universal Grammar*, MIT Press, Cambridge, Mass.
- Jones, M. (1996) *Foundations of French Syntax*, Cambridge University Press, Cambridge.
- Kayne, R. (1975) *French Syntax*, MIT Press, Cambridge, Mass.
- Kayne, R. (1984) *Connectedness and Binary Branching*, Foris, Dordrecht.
- Martin, R. (1992) "On the Distribution and Case Features of PRO," Ms., University of Connecticut.
- Moore, J. (1994) "Spanish Causatives and Indefinites : Evidence for VP Complementation," paper read at the 68th Meeting of the Linguistic Society of America.
- Nakano, H. (1996) "Teikeisetsu-no Imi Bunseki (A Semantic Analysis of Finite Clauses)," *Nagoya Daigaku Bungakubu Kenkyu Ronsyu* 124, Bungaku 42, 79-88.
- Nawata, H. (1997) "A ϕ -Feature Checking Approach to PRO," Ms., Nagoya University.
- Ormazabal, J. (1994) "PRO, Null Case, and the Interpretation of Complements," *NELS* 24, 475-489.
- Pollock, J.-Y. (1989) "Verb Movement, Universal Grammar, and the Structure of IP," *Linguistic Inquiry* 20, 365-424.

- Postal, P. (1974) *On Raising*, MIT Press, Cambridge, Mass.
- Ritter, E. and S. Rosen (1997) "The Function of *Have*," *Lingua* 101, 295-321.
- Rothstein, S. (1995) "Pleonastics and the Interpretation of Pronouns," *Linguistic Inquiry* 26, 499-529.
- Safir, K. (1993) "Perception, Selection, and Structural Economy", Ms., Rutgers University.
- Selkirk, E. O. (1982) *The Syntax of Words*, MIT Press, Cambridge, Mass.
- Stowell, T. (1981) *Origins of Phrase Structure*, Doctoral dissertation, MIT.
- Suzuki, Y. (1991) "Small Clause as AgrP," in H. Nakajima and S. Tonoike, eds., *Topics in Small Clauses*, Kurosio, Tokyo.
- Takahashi, D. (1992) "Improper Movements and Chain Formation," Ms., University of Connecticut.
- Tanaka, T. (1996) "Implicit Arguments in Nominals: A Minimalist Approach," in M. Amano et al. eds., *Gengo-no Shinso-o Tazunete (Inquiries into the Depth of Language)*, Eichosha, Tokyo.
- Ura, H. (1993) "On Feature-Checking for *Wh*-Traces," *MIT Working Papers in Linguistics* 18, 243-280.
- Williams, E. (1981) "On the Notions 'Lexically Related' and 'Head of a Word,'" *Linguistic Inquiry* 12, 245-274.

Synopsis

The Correspondence between Functional Categories
and Semantic Features in the ECM Construction

By Hiroyuki Nawata

English *believe*-type (B-type) verbs and their French counterparts exhibit a striking contrast as to whether they can take exceptional Case-marking (ECM) infinitives as their complements. This topic has been the subject of much controversy in the literature and there seems to be little agreement about how to give a principled explanation. The aim of this paper is to explore this problem by considering the relations between selectional properties of matrix verbs and structural realizations of infinitival complements.

To begin with, it is demonstrated that English infinitives and French infinitives have different categorial statuses: the former are TPs whose head contains the [$-$ Finite] feature, whereas the latter are analyzed as VPs. It is also shown on the basis of the ambiguity of causatives that the [$-$ Finite] feature of French infinitives is carried by the inflectional suffix *-re*.

Having established the structural difference between two infinitives, I claim that the syntactic patterns of B-type verbs in these languages can be reduced to the general prohibition against VP complements. Even in English, bare VP complements cannot appear with B-type verbs. If French infinitives are VPs as I claim they are, it is naturally concluded that B-type verbs are subject to the same condition in both English and French.

To clarify the condition at work, I propose that B-type verbs s-select the feature [proposition] and that it is carried by some functional category. In English, this feature is contained in T and lexical subjects are allowed to occur in [Spec, TP]. On the other hand, in French where the [$-$ Finite] feature is realized as the inflectional suffix and there is no T within infinitives, C is selected as the locus of [proposition]. When an infinitival complement is CP, no lexical subjects can appear because the CP boundary blocks the A-movement to

the matrix Case-checking position.

The peculiar behavior of English *say*, *rumor*, and *allege* is also explained in the same fashion. These verbs are obligatorily passivized when they take the ECM construction. I claim that their active forms and passive forms constitute different lexical items and that the former s-select [statement] while the latter s-select [proposition]. The semantic feature [statement] is always carried by C. It follows that the complement of the active forms must be realized as *that*-clauses. The passive forms, in contrast, are free from this constraint so that the complement can be realized as ECM infinitives when [proposition] is located in T.