Tense Features and Visibility

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Abstract

Adopting Pesetsky and Torrego's (2001) proposal that D and C have an uninterpretable Tense feature, this paper proposes a new version of the Visibility Condition. Under the proposed Visibility Condition, an uninterpretable Tense feature renders an argument visible for θ-marking. Based on the new theory of Visibility, this paper argues that C is merged with TP when TP is not visible for θ-marking. Since embedded finite clauses and control infinitives in English have interpretable Tense features on T, for example, [+tense], CP must be projected over TP. On the other hand, English raising infinitives have an instance of uninterpretable Tense features (that is, [+ anaphor]) and are analyzed as TP. It is furthermore argued that infinitival complements in French have the interpretable Tense feature [+indicative] or [+subjunctive] as finite clauses do, and that C is merged with TP in raising infinitives as well as in control infinitives.

1. Introduction

In the Government-Binding framework, it is assumed that an argument must be visible for θ(theta)-role assignment and that Case renders it visible. For example, the following proposal is made in Chomsky (1981).

(1) An A-chain is visible for θ-marking if it contains a Case position.

According to the Visibility Condition in (1), a Caseless argument will not be assigned a θ-role and thus will be in violation of the θ-Criterion or some other well-formedness condition at LF.

Although Case-assignment is likely to be related to θ-marking, there is a serious problem confronting the Visibility Condition, which is that finite clausal arguments, unlike lexical arguments, do not require Case. Consider the following contrast.

(2) a. I am proud that John won the race.
     b. I am proud *(of) John.

In (2b) the lexical argument *John* requires the presence of the preposition *of* to receive Case. On the other hand, the clausal argument in (2a) does not require any prepositions. The Visibility Condition cannot account for why clausal arguments are visible for θ-marking without being Case-marked. The same argument applies to infinitival clausal arguments as well.

(3) a. Mary seems to be intelligent.
     b. John was believed to be guilty.

The first purpose of this paper is to show that the problem with the Visibility Condition can be solved by building on some intriguing proposals made by Pesetsky and Torrego (2001, henceforth "P & T 2001"). In Section 2 we begin with a review of the proposals that are crucial to our investigation. In Section 3, a new version of the Visibility

Condition is proposed, one which refers to the temporal status of arguments, rather than Case. This section also explores the question of what function the complementizer C has in the Syntax and argues that the occurrence of C depends on the temporal status of embedded TP. In Section 4 we turn to the second purpose of this paper, which is to examine the temporal and categorial status of English infinitives. Section 5 argues how well-known contrasts between English and French raising infinitives may be accounted for in terms of Tense-features (T-features).

2. T-features

Investigating major subject/nonsubject asymmetries (that is, *that*-trace phenomenon and T-to-C movement asymmetry), P & T (2001) makes some intriguing and stimulating proposals. Among them, the following two proposals are the most relevant to this paper.

(4) Nominative case is an uninterpretable T-feature (uT) on D.

(5) C bears uT.

According to (4), what is traditionally called "Nominative case" is analyzed as an instance of T-features which are present on D. That amounts to saying that the nominative noun is assigned an uninterpretable T-feature, not a Case-feature. As shown in (6), the subject DP has uT in addition to interpretable ϕ-features like person and number features, and T has uninterpretable ϕ-features when they are merged into the derivation.

(6) T: [$u\phi$]

DP:[uT, ϕ]

Let us now see how their proposals account for the T-to-C movement asymmetry shown in (7). The sentences in (7) are assumed to have the structure indicated in (8) when C is merged with TP.

(7) a. What did Mary buy?

b. *What Mary bought?

c. *Who did buy the book?

d. Who bought the book?

(8)

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            C'
          /    \
        C        TP
      [uT]      /  \
             Subj    T'
                    /  \
                   T    vP
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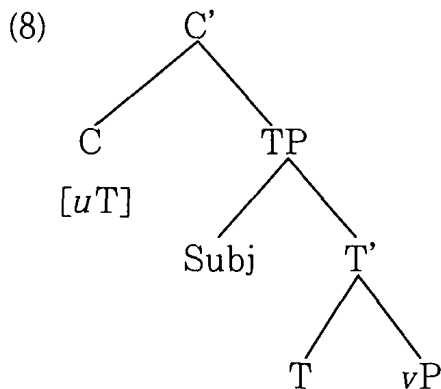
As the contrast in (7c, d) shows, the movement of a tensed auxiliary verb from T to C does not take place when the nearest subject is moved to [Spec, CP]. In the acceptable (7d), uT on C can be deleted by uT on the subject *wh*-phrase that is moved to [Spec, CP].[1] Thus, T-to-C movement is not triggered and the unacceptable (7c) is ruled out. On the other hand, sentences like (7a,b), in which the object *wh*-phrase undergoes *wh*-movement, show that T-to-C movement is obligatorily required. This might be accounted for if we

assume following P&T (2001) that DPs with accusative Case do not bear uT. However, we do not adopt this assumption since it is proposed in Pesetsky and Torrego's (To appear) that the object DP bears uT as the subject DP does, as cited below.

(9) Accusative case (like nominative) is an instance of uT on D.

Under this analysis, the contrast in (7a, b) follows from the assumption that uT on the object *wh*-phrase has been deleted at the vP cycle (which is a "phase" in Chomsky (2000)). Since uT on the *wh*-phrase is not accessible at the CP cycle, uT on C cannot be deleted by the *wh*-phrase moved to [Spec, CP] and, hence, T-to-C movement of the auxiliary verb is necessary.

In sum, it is argued in P & T (2001) that some phenomenon for which Case was considered to be responsible can be attributed to uT. Keeping this explanation in mind, I will propose a new version of the Visibility Condition in the next section.
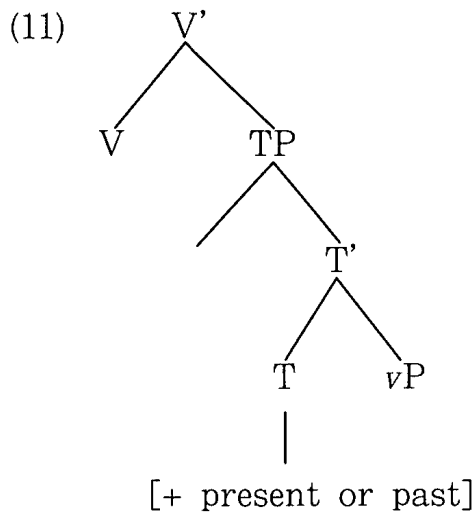
3. The Visibility Condition and the Function of C

A new version of the Visibility Condition that I propose is as follows:

(10) An argument is visible for θ-marking if it bears uT.

Consider the case where a lexical argument is merged with V (or its projection). Since lexical arguments do not inherently bear any T-features, they must be assigned uT before Merge in order to be visible for θ-marking.

In the case of finite clausal arguments as in (2a), *that*-clause can be merged without assigned uT since C inherently bears uT, which is proposed in (5). In contrast, the structure illustrated in (11), in which TP, not CP, is the complement to the matrix verb, is ruled out according to (10).

(11)

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          V'
         /  \
        V    TP
            /  \
           /    T'
                / \
               T   vP
               |
        [+ present or past]
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If we assume that the head T of the finite TP bears an interpretable T-feature (either [+ present] or [+ past]) and that a head cannot simultaneously bear opposite features, it follows that the finite T cannot be assigned uT since uT is uninterpretable and [+ present] (or [+past]) is interpretable. The finite TP without uT is not visible for θ-marking, and the derivation crashes.

It is predicted by the above discussion that C must obligatorily occur to render finite clausal arguments visible. This prediction apparently faces counterexamples like (12), in which *that* is optional.

(12) Mary thinks Sue will buy the book.

The problem can be solved if we assume, following P & T (2001), that *that* is an instance of T moved to C, as shown in (13), and that the subject moves to [Spec, CP] in embedded clauses which are not introduced by *that*, as shown in (14).

(13) Mary thinks [$_{CP}$ [$_T$ that]$_j$ + [C, uT] [$_{TP}$ Sue will$_j$ buy the book]]

(14) Mary thinks [$_{CP}$ [Sue]$_j$ [C, uT] [$_{TP}$ t$_j$ will buy the book]]

Since C is present even when *that* does not overtly appear in embedded declarative clauses, the embedded clauses act in obedience to the proposed Visibility Condition.

P & T (2001) also presents an explanation as to why clausal arguments do not require Case-checking elements (or T-checking features under their framework) outside the embedded clauses. Since uT on C can be deleted by T-to-C-movement or by the movement of the subject to [Spec, CP], as in (13) and (14), respectively, it need not rely on any outside uT-checking features.

A proposal similar to my analysis of C is made in Szabolcsi (1982), which argues that the complementizer and the article play the same role, namely, subordination.

(15) Both the complementizer and the article are "subordinators" in the sense that they enable the clause or noun phrase to act as arguments.

(Szabolcsi 1982:130)

Although her proposal is intriguing, it encounters a difficulty

in accounting for raising infinitives in English such as (3a). The embedded DP in (3a) is raised to the matrix subject position and if CP constitutes a barrier against A-movement, the complement to the raising verb cannot be CP. Under Szabolcsi's framework, it is wrongly predicted that raising infinitives are ruled out since they do not contain a subordinator (that is, C) and they are not allowed to act as a θ-role bearing argument.

4. The Temporal and Categorial Status of Infinitives

Stowell (1982) and Martin (1996, 2001) argue that control infinitives as in (16) and raising infinitives as in (17) differ with respect to temporal properties.

(16) a. Ginny remembered to bring the beer.
　　 b. Sara convinced Bill to go to the party.

(17) a. Zagallo believed Ronaldo to be the best.
　　 b. The doctor showed Bill to be sick.

According to their arguments, control infinitives and raising infinitives are characterized as follows:

(18)

	interpretation	T-features
control infinitives	unrealized	[+tense, −finite]
raising infinitives	simultaneous	[−tense, −finite]

The event time of control infinitives is unrealized or future with respect to that of the matrix. In (16a) the event time of

the subordinate clause follows that of the main clause. Non-finite T with the future-oriented interpretation is assumed to have the T-features [+tense, − finite]. On the other hand, the event time of raising infinitives is identical to or simultaneous with that of the matrix. In (17a) Zagallo believed at some past time t that Ronaldo was the best at t. Non-finite T of raising infinitives is provided with the T-features [−tense, −finite].

Since the argument that the interpretive distinction correlates with the occurrence of the feature [+tense] seems plausible, I adopt the assumption that non-finite T of control infinitives has the interpretable T-feature [+tense]. However, I modify the properties of raising infinitives as follows:

(19)

	interpretation	T-features
control infinitives	unrealized	[+tense, −finite]
raising infinitives	simultaneous	[+anaphor](uninterpretable)

The crucial point in (19) is that raising infinitives do not have any interpretable T-features, but do have an uninterpretable anaphoric feature [+anaphor]. By [+anaphor] I mean that non-finite T of raising infinitives must be bound by c-commanding T which has some instance of interpretable T-feature. The uninterpretable feature [+anaphor] is checked and erased when it is bound. The fact that the event time of raising infinitives is identical to or simultaneous with that of the matrix can be accounted for in a similar manner in which the anaphoric nominal expression is assigned the index identical to the binding DP in examples like (20) below.

(20)　Tom$_i$ criticized himself$_i$.

It is argued in Section 3 that there are two ways to turn an invisible argument to a visible one. The first is to give uT to arguments like DPs. The second is to merge C which has uT with invisible finite TPs. Given (19) and the Visibility Condition proposed in this paper, the following prediction could be made with respect to the categorial status of infinitives.

(21)

	the categorial status
control infinitives	CP
raising infinitives	TP

The categorial status of control infinitives is CP since they become visible for θ-marking only when C with uT is merged. On the other hand, since raising infinitives have uT on T and are visible for θ-marking, merge of C is not necessary. Hence, the categorial status of raising infinitives is TP.

5. Raising Infinitives in French

Kayne (1984) notes that PRO is allowed in the subject position of ECM infinitives in French.

(22) a. Pierre croit　[PRO avoir　convaincu son auditoire]
　　　　Pierre believes　　　　to-have convinced his　audience
　　b. Pierre a　constaté [PRO avoir　convaincu son auditoire]
　　　　Pierre has noticed　　　　to-have convinced his audience

In Bošković (1997) it is argued that French raising infinitives differ from English raising infinitives in that the former is specified as [+tense]. The occurrence of PRO can be straightforwardly accounted for under his assumption that PRO is licensed by [+tense, − finite].

While English and French raising infinitives show a different behavior with respect to the distribution of PRO, they behave similarly with respect to *wh*-movement. As (23) shows, *wh*-movement from the subject position of the infinitival complement of raising verbs is allowed in French.

(23) Qui Pierre croit-il   [t avoir   acheté des   fraises]
    Who Pierre believes-he   to-have bought some strawberries

Arguing that [+tense] is not required in French when aspectual elements such as *have* and adverbs of quantification are present, Bošković assumes that the *wh*-phrase can be Case-checked by the matrix verb in (23).

Although this analysis is very appealing, its plausibility appears to be challenged by unacceptable sentences like (24).

(24) *Pierre a   cru   Marie avoir   acheté des   fraises
    Pierre has believed Marie to-have bought some strawber-
    ries

The non-finite T in (24) may have [−tense, −finite] since [+tense] is not required when the aspectual element *avoir* is present. Bošković (1997) further proposes the following principle.

(25) The Minimal Structure Principle

Provided that lexical requirements of relevant elements are satisfied, if two representations have the same lexical structure and serve the same function, then the representation that has fewer projections is to be chosen as the syntactic representation serving that function.

(Bošković 1997:25)

According to (25), the infinitival complement in (24) is analyzed as TP. Then, his analysis considers French raising infinitives to have the same syntactic structure as English raising infinitives with respect to both categorial status and T-features. As long as they are considered to have the same structure, their contrast indicated by (17) and (24) remains unexplained.

Having come to a deadlock under Bošković's analysis, let us deal with French raising infinitives based on my analysis of English raising infinitives. In Section 4, it is argued that English raising infinitives have the uninterpretable anaphoric T-feature [+anaphor]. Here occurs a question of what kind of T-features French raising infinitives possess. As is well-known, a finite complement in French may appear in the subjunctive mood or in the indicative mood depending on the matrix verb that selects it.

(26) a.　Murielle voudrait que　Jean dorme
　　　　Murielle wants　　that Jean sleep(subjunctive)
　　b.　Murielle croit　　que　Jean dort
　　　　Murielle believes that　Jean sleep(indicative)

In contrast, the mood distinction is not clearly realized in English. Accordingly, it is plausible to assume that in French the mood distinction of finite complements is encoded as the formal T-feature [+subjunctive] or [+indicative]. Furthermore, I assume that not only finite complements but also infinitival complements in French must be specified as [+subjunctive] or [+indicative] although the mood distinction is not overtly realized.

In Section 4, it is proposed that C with uT must be merged when TP has some interpretable T-feature. Since non-finite T of French infinitives, which has the interpretable T-feature [+subjunctive] or [+indicative], is not visible for θ-marking, C must be merged. Hence, the proposed Visibility Condition predicts that not only control infinitives but also raising infinitives in French are CPs. Under the CP analysis, (24) is considered to have the following structure.

(27) *Pierre a cru [CP C [TP Marie avoir acheté des fraises]]

The ungrammaticality follows from Chomsky's (2000) proposal that the Case-checking relation between the matrix verb and the embedded subject in [Spec, TP] is blocked by Phase-Impenetrability Condition.[2]

(28) Phase-Impenetrability Condition
    In phase α with head H, the domain of H is not accessible to operations outside α, only H and its edge are accessible to such operations.   (Chomsky's 2000:108)

The CP analysis of French infinitives can also give

an account of acceptable sentences like (23) in combination with the theory of phase. In (23), the *wh*-phrase in the Spec position of the embedded TP is first moved to the Spec position of the embedded CP. The movement enables the *wh*-phrase in [Spec, CP] to enter into a Case-checking relation with the matrix verb and to be raised into the outer Spec position of the matrix *v*P. One might think that the following principle poses a threat to the given account.

(29) There can be no $\bar{\text{A}}$-to-A movement.

If the Spec position of CP is an $\bar{\text{A}}$-position and the outer Spec position of *v*P is an A-position, the movement would be considered to be an instance of $\bar{\text{A}}$-to-A movement and would be illegal. However, it is not clear how to define 'A-position' and '$\bar{\text{A}}$-position' and it has remained unanswered whether the traditional notion of the A/$\bar{\text{A}}$ distinction plays any role under the Minimalist Program. So, it seems desirable to reanalyze the apparently illegal movement in light of Chomsky's proposal, which is that movement is subdivided into A- or $\bar{\text{A}}$-movement depending on whether the attracting head H has ϕ- or P-features (periphery feature).[3] A-movement occurs when H and the attracted phrase XP enter into a Case/agreement relation. $\bar{\text{A}}$-movement is derived when H has P-features. When C and *v* have a *wh*-feature, which is one instance of P-features, movement attracted to [Spec, C] and [Spec, *v*] is regarded as $\bar{\text{A}}$-movement. When *v* has both ϕ-features and a *wh*-feature, we assume that either ϕ-features or a *wh*-feature will be selected as the attractor of XP so that a convergent structure can be derived. In the case of (23), the proper $\bar{\text{A}}$-

to-$\bar{\text{A}}$ movement is derived when the *wh*-feature on the matrix *v* is selected as the attractor of the *wh*-phrase. If ϕ-features is chosen, the improper $\bar{\text{A}}$-to-A movement is derived and the derivation crashes.

Finally, let us consider the following unacceptable French sentence, which provides further support of the CP analysis of French infinitives.

(30) *Pierre a   été   cru   [CP t' C [TP t avoir   acheté
     Pierre has been believed   to-have bought
     des   fraises]
     some strawberries

Since the lexical argument *Pierre* in the Spec of the embedded TP cannot enter into a Case-checking relation with the matrix T directly, because it is blocked by Phase-Impenetrability Condition, it needs to be raised to the Spec of the embedded CP. In order to be attracted into [Spec, CP], the argument must have a *wh*-feature. However, lexical arguments other than *wh*-phrases are not allowed to have a *wh*-feature. Since there is no available way to raise the argument into the Spec of TP due to the presence of the embedded C, the derivation crashes.[4]

6. Conclusions

In this paper I have reformulated the Visibility Condition and proposed that an argument is visible for θ-marking if it has *u*T. Based on the proposed Visibility Condition, it has been argued that the CP/TP status of finite and infinitival complements is determined by T-features of the

head T. Since my analysis of infinitival complementation enables us to dispense with c-selection, it is superior to the standard account, in which it is stipulated that the infinitival complement of *believe* is a TP, and that of *try* a CP.

Notes

1. More precisely, P & T (2001) assumes that *wh*-movement to [Spec, CP] is independently triggered by an uninterpretable *wh*-feature ($u$wh) on C. Note that they assume that uT on the subject DP, which has been marked for deletion by T in [Spec, TP], is accessible to further operations at least as long as the CP cycle.

2. In order to maintain the proposed account, it must be stipulated that the uT on C in French infinitives lacks EPP property and that the embedded subject in [Spec, TP] is not attracted to [Spec, CP] by uT. This argument is similar to the claim made in P & T (2001) that uT on C does not have the EPP property in a declarative clause whose subject is PRO.

3. Here I point out some inconsistency in Chomsky (2000). He argues in note 50 that both the Case/agreement properties of v and the Q-feature of interrogative C are regarded as the P-feature. If ϕ-features like the Case/agreement properties of v are included among P-features, it becomes impossible to distinguish A- or $\bar{\text{A}}$-movement depending on whether the phase head has ϕ- or P-features.

4. Even if it is assumed that the lexical argument could be attracted by some P-feature on C, our analysis can rule out the unacceptable (30). When the lexical argument *Pierre* in the Spec of the embedded TP is attracted by a P-feature on C, this movement is regarded as $\bar{\text{A}}$-movement. The argument moved into [Spec, CP] is then attracted by ϕ-features on the matrix T given that T, which is not the phase heads v/C, may not assigned a *wh*-feature, as assumed in Chomsky (2000). The operation derives an improper $\bar{\text{A}}$-to-A movement and the derivation crashes.

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