

VP-internal Movement*

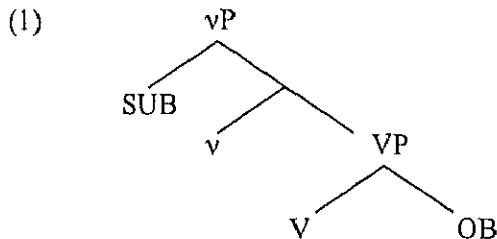
Toshifusa Oka

1. Introduction

In this paper I will discuss the internal structure of VP under the Minimalist Program. Adopting the layered VP hypothesis, I will argue that there is movement inside the VP. The phenomena considered here include the VP-internal connectivity with respect to binding, the behavior of the subject in West Ulster English, and the double object construction.

2. The VP-internal Subject Hypothesis

One of the implementations of the VP-internal subject hypothesis is to pose the subject in Spec of a lexico-functional head v , which heads the maximal VP (=vP), taking the lexical VP as its complement, as in (1):



This is Chomsky's (1995) interpretation of the original insight of Hale and Keyser (1993) that the constituent [v VP] works as a predicate that "externally" θ -marks the subject. Chomsky also assumes that v is responsible for the Accusative Case-checking for the object inside the lexical VP, eliminating the resort to the functional head AGR.

3. The Positions for the Object

In the mean time it has been pointed out in the literature that there is evidence suggesting that the object is moved somewhere between v and V. Thus, consider the following examples of "internal connectivity" (See Takano (1998), among others, and references cited there):

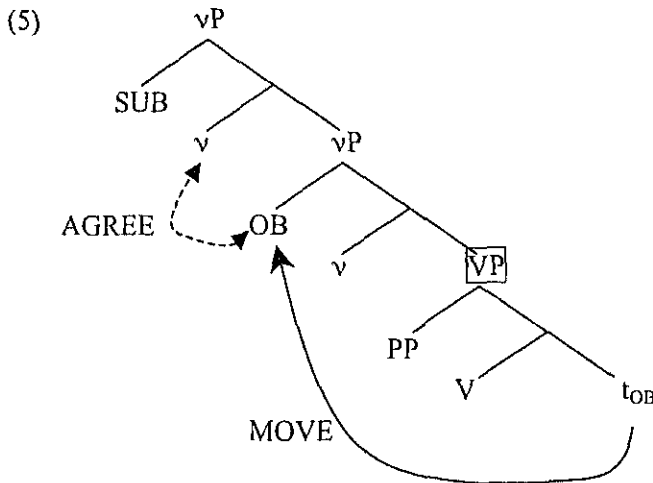
- (2) a. I showed Mary herself.
 b. * I showed herself Mary.

* I would like to thank Hiroyuki Ura and Yuji Takano for discussion and encouragement. I would also like to thank the audiences at the talks I gave at University of Tsukuba on February 19, 2002 and at Kwansei Gakuin University on November 1, 2003, where I made oral presentations of my ongoing study of syntactic features and operations, which the content of this paper is part of.

- (3) a. I showed Mary to herself.
 b. * I showed herself to Mary.
- (4) a. * I showed each other's mothers the babies.
 b. ? I showed each other's babies to the mothers.

The examples in (2) and (3) suggest that the first complement is higher than the second one, as far as the binding conditions are concerned. However, the examples in (4) show that the second complement can bind into the first in the DP(theme)-PP(goal) construction.

Takano argues the object in the DP-PP construction is raised somewhere to become close enough for Case-checking by *v*. More concretely, it is assumed to be left-adjoined to the lexical VP. Let us assume instead that the object is raised to Spec of another instance of *v*, as in (5):



The raised object is Case-checked by the higher *v* by the mechanism of Agree. The lexical *V* is raised up to the higher *v* whereas the subject is raised to Spec of Tense, yielding the surface word order.

The lower *v* is the functional head that can be identified with what has been semantically characterized as aspectual since Travis (1992). As Koizumi (1993, 1995), Bobaljik (1995) and others argue, this functional head could be regarded as semantically empty AGR, which is responsible for the Case-checking of the object. However, we are not going back to such an AGR-based theory of phrase structure. It is still possible to assume that it is this aspectual functional head that is responsible for Accusative Case-checking. For the discussion in the rest of the paper, however, I will maintain the assumption that the Accusative Case-checker is the externally θ -marking head. See Oka (2000, 2001) for arguments for my position, and Pesetsky and Torrego (to appear) for their arguments that the Accusative Case-checker is the

aspectual head.¹

A possibility to capture the connectivity in question is to assume that the antecedent-anaphor relation can be established at two levels: at the level of the lexical VP and at the level of TP. The binding condition (A) can be applied either when the lexical VP is built up in the course of derivation or when TP is build up. Thus, the example (4b) is well-formed, since *the mothers* c-commands *each other* at the VP level, assuming that the preposition *to* can be ignored for the binding purpose. The example (3a) is well-formed, since *Mary* c-commands *herself* at the TP level. The binding condition (C), on the other hand, is only applied at the TP level, so that the example (3b) is not well-formed with *herself* c-commanding *Mary* there. The fact that *herself* c-commands *Mary* at the VP level in (3a) is irrelevant with respect to the condition (C).

The crucial assumption here is that the PP complement is originally higher than the object inside the lexical VP. This follows from Baker's (1988) UTAH. I will leave for future research how UTAH itself is derived from more general considerations.

4. The Positions for the Subject

Consider now the following West Ulster English examples, which are observed by McCloskey (2000), who concludes that the subject is originally lower than the object:

- (6) a. What did she bring all to the meeting at the weekend?
 b. ? What did she bring to the meeting all at the weekend?
 c. * What did she bring to the meeting at the weekend all?
- (7) a. Who all built this house?
 b. * Who built all this house?
 c. ? .Who built this house all?
- (8) a. Who all was throwin' stones (around Butchers' Gate) (yesterday)?
 b. * Who was throwin' all stones (around Butchers' Gate) (yesterday)?
 c. Who was throwin' stones all (around Butchers' Gate) (yesterday)?
 d. * Who was throwin' stones around Butchers' Gate all yesterday?
 e. * Who was throwin' stones around Butchers' Gate yesterday all?
- (9) a. Who all was talking to the kids last night?

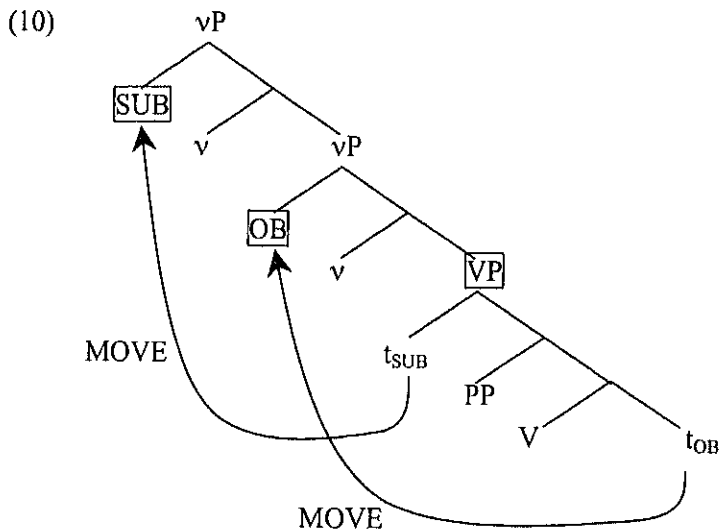
¹ Oka (2000, 2001) shares the same idea with Pesetsky and Torrego (2001, to appear), which I didn't know until recently: Case is nothing but the morphological realization of a set of verbal features on a nominal category. Thus, nominative Case is simply what a tense feature such as [\pm Past] is realized on DP.

b. * Who was talking to the kids all last night?

c. ? Who was talking all to the kids last night?

The floated quantifier marks a position that is occupied by the associated *wh*-phrase in the course of derivation. The examples in (6) show that the *wh*-object can be placed before and after the PP complement, but not after the PP adjunct. This immediately follows from our proposal of the VP-internal object movement. The examples in (7) show that the subject can occupy a position before and after the object, but not between the verb and the object. The examples in (8) and (9) show that the subject can occupy a position before the PP complement, but not after it.

These facts can be accounted for if we assume that the subject is originally placed before the PP complement and the object inside the lexical VP and then is raised crossing over the raised object, as in (10):



Inside the lexical VP the arguments are hierarchically aligned according to Baker's (1988) UTAH. Keeping to the VP-internal subject hypothesis, the subject is raised to Spec of the higher *v* to satisfy the predicate [*v* vP].²

In both cases of object raising and subject raising, the head whose Spec the DP

² One might think that the *v* that we have been assuming externally θ -marks the subject does not exist in the first place, so that the subject is directly raised to Spec of Tense from inside the lexical VP. Though no relevant evidence concerning West Ulster English found in McCloskey (2000), examples of quantifier floating such as the following are readily observed elsewhere:

(i) The dogs may have all eaten the fish in the house.

Such examples show that some VP-internal position at the left of the surface position of the main verb should be available for the subject, as has been argued since Sportiche (1988). Thus, it is not unreasonable to maintain the *v* for West Ulster English as well.

is raised to is not its Case-checker: the subject is Case-checked by a functional head outside the maximal VP, namely Tense in the usual case, and the object is Case-checked by the higher v . Although the object is raised to a non- θ -position, the subject is raised to the position where we assume it is externally θ -marked. It seems like the θ -role assigned inside the lexical VP is double checked outside. This clearly requires a deeper understanding of the nature of external θ -marking, or θ -marking in general, which I will not pursue here, though.

Note that there is a stage where the object is temporarily higher than the subject in the course of derivation, that is, when the object is raised while the subject is still in the original position. However, this does not mean the object can be the antecedent of an anaphor inside the subject. For the subject is necessarily higher than the object not only at the lexical VP level but also at the TP level, where the subject is has been raised crossing over the raised object.³ The same holds in the case of object shift of the Icelandic-type, which we may be able to consider as a movement of the object to an extra Spec of the higher v , which externally θ -marks the subject in its inner Spec (See Chomsky (1995, 2000, 2001) and Jonas (1995, 1996), and among others.)

A question is whether VP-internal movement of the subject is universal or parameterized. Though I cannot directly answer this question, I will argue in the next section that the behavior of the indirect object of the double object construction is subject to a parametric variation with respect to VP-internal movement.

5. The Double Object Construction

5.1. Parametric Differences

Ura (2000) proposes to associate the fact that American English (=AE) and British English (=BE) behave differently concerning the passivizability of the direct object over the indirect object in the double object construction with the difference concerning the possibility to interpolate an adverb between the indirect and the direct objects (See Ura (2000) and references cited there):

- | | | | |
|---------|------------------------------|----------|---------|
| (11) a. | The book was given to Mary. | (AE: OK, | BE: OK) |
| b. | The letter was sent to Mary. | (AE: OK, | BE: OK) |
| (12) a. | Mary was given the book. | (AE: OK, | BE: OK) |
| b. | Mary was sent the letter. | (AE: OK, | BE: OK) |
| (13) a. | The book was given Mary. | (AE: *, | BE: OK) |

³ The same holds in the case of object shift, which we may be able to consider as a movement of the object to an extra Spec of the higher v , which externally θ -marks the subject in its inner Spec. See Chomsky (1995, 2000, 2001), Jonas (1995, 1996) and Bobaljik (1995), among others.

- b. The letter was sent Mary. (AE: *, BE: OK)
 (14) a. I gave Bill reluctantly the keys. (AE: *, BE: OK/?)
 b. I sent Mary immediately the parcel. (AE: *, BE: OK/?)

In American English the direct object cannot be passivized over the indirect object and an adverb cannot be placed between the direct object and the indirect object, both of which are possible in British English. Ura points out that Danish and Swedish behave in the same way as American English in this respect while Norwegian behaves like British English.

The situation is illustrated as follows:

(15) American English (Danish and Swedish)

a. * SUB(DO) IO t [passive]

b. * SUB IO @ DO [@=adverb]

(16) British English (Norwegian)

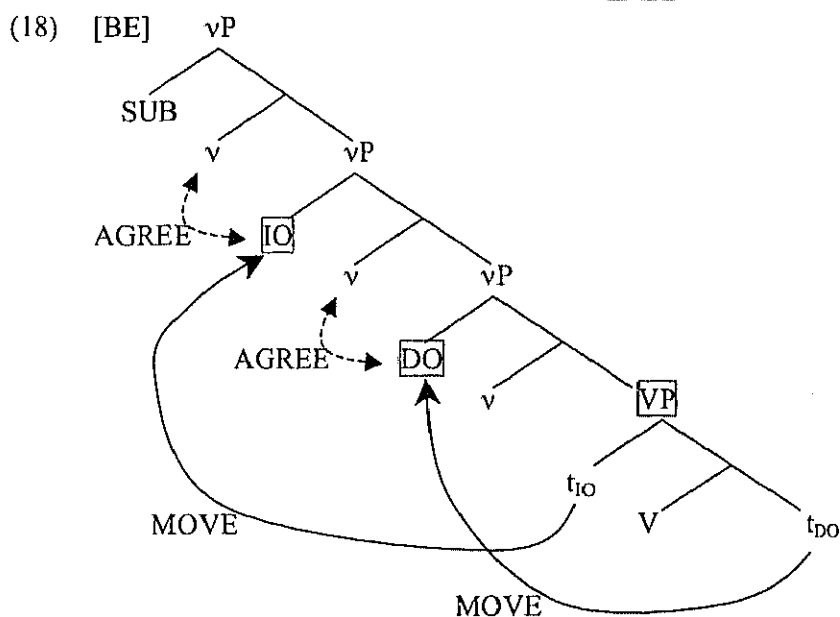
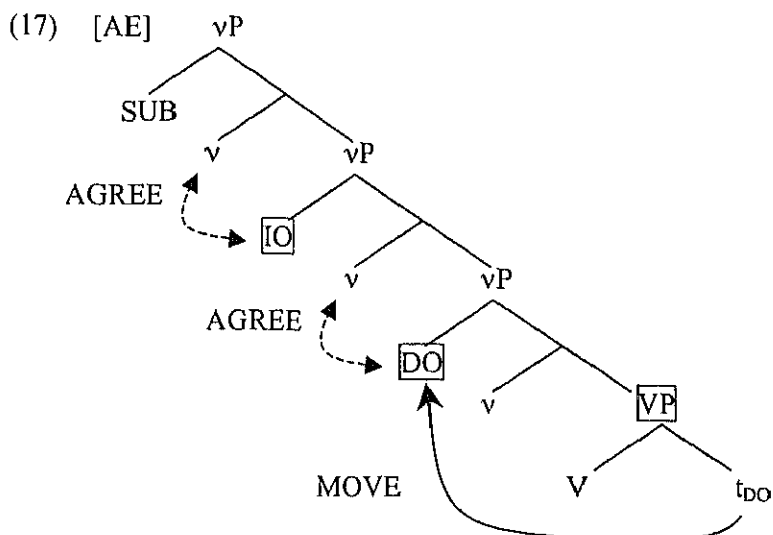
a. √ SUB(DO) IO t [passive]

b. √ SUB IO @ DO [@=adverb]

Ura (2000) argues that crossing of DO over IO is correlated with crossing of IO over Adv, assuming that the IO-Adv order is derived by movement of IO. Ura realizes his idea under his own theory of phrase structure. I will fit his insight into the present framework.

5.2. *The Positions for the Indirect Object*

Let us propose that another instance of v be placed for IO. Furthermore, this functional head is subject to parametric variation with respect to its ability to raise IO to its Spec from inside the lexical VP. Thus, the double object construction is illustrated as in (17) for American English, and as in (18) for British English:



IO is placed in Spec of the middle v in the first place in American English, and it is originally placed inside the lexical VP and raised to the Spec in British English. DO is raised to Spec of the lowest v in both cases. Here we are assuming for the moment that the subject is originally in Spec of the highest v , which we will return to below.

The middle v θ -marks IO in its Spec in terms of Goal-role, "externally" in the sense that it is done outside the lexical VP . This head also Case-checks DO , just as the head θ -marking the subject Case-checks DO in the single object construction. The highest v θ -marks the subject just as before, and it Case-checks IO , ignoring the

possible Accusative/Dative distinction.

It is not the case that movement to Spec of v is made possible by feature checking, since Case-checking is not involved here. This situation will not be allowed to happen, if the mechanism Agree is incorporated in the mechanism of Move in the way proposed by Chomsky (1995). Note that Merge is necessarily incorporated in Move because it is impossible to move an element without merging it. Agree is different from Merge in this respect. The assumption that Agree is incorporated in Move is not logically necessary, however useful it is to reduce the possible operations in the course of derivation. It is a good thing to constrain Move, but there seems to be no reason to think that Move has to be constrained this way.

It is possible, however, to characterize Move in terms of the Probe-Goal relation just as Agree. While Agree applies to two heads, Probe and Goal, to delete matching features, Move applies to two heads in such a way that it makes a copy of K , $K = \text{Goal}$ or $K \supset \text{Goal}$ (Pied-piping), and merge the copy to Probe or to some projection of Probe. Both operations start with a Probe-Goal relation.

Let us suppose that Agree and Move use different sorts of search key for a head to search and select another head to establish a Probe-Goal relation. In the case of Agree, Probe searches Goal in terms of a morphological feature (set) of Probe so that Probe and Goal will have the same feature (set). A locality condition proposed in Chomsky (1995) is to require that the two relevant features (sets) should be the closest to each other. Let us suppose for preciseness as follows:

- (19) Goal must be the closest to Probe with respect to the relevant features (sets), where a head α is closer to a head β than a head γ , if some projection of α is c-commanded by β and asymmetrically c-commands β .

In the case of Move on the other hand, Probe has a kind of selectional feature as a lexical property, and search and select Goal among the heads that can satisfy that selectional feature. Unlike Agree, Move does not delete or affect a matching feature (set) of Probe or Goal. The selectional feature of Probe simply disappears when Probe satisfies it by selecting Goal. Since such a feature is not shared by Goal, it does not happen that the feature (set) acting as the search key is shared by Probe and Goal. Therefore, Move is not subject to the locality condition (19), though more general considerations of phase, which are brought up in Chomsky (2000, 2001), may be relevant.

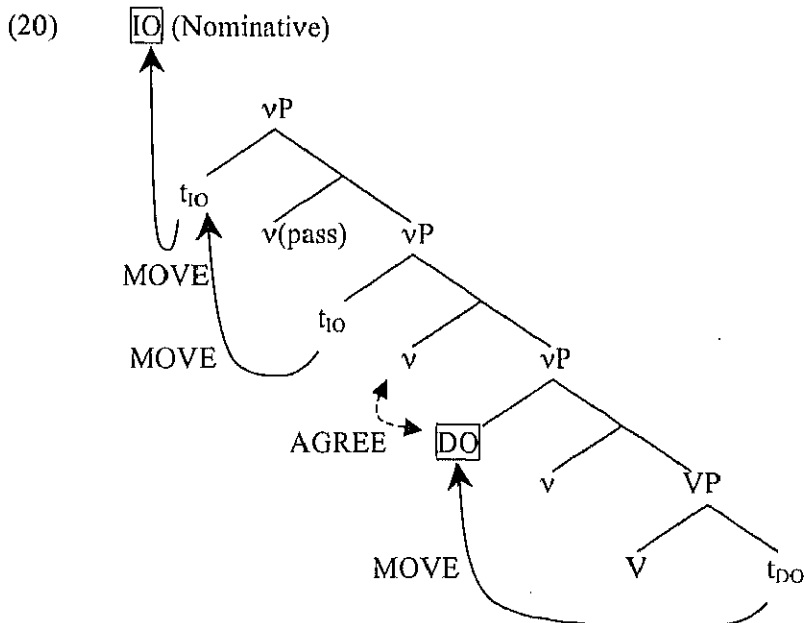
Thus, the middle v in British English has a selectional feature that enables it to select some D as Goal for the purpose of Move. The v selects the D that heads the phrase identified as IO so that IO is raised to its Spec, as is illustrated in (18). Note

that not only the D of IO but also the D of DO counts as a candidate for selection by the middle v , since the locality condition (19) is irrelevant here though the former is structurally closer than the latter. If the latter is selected and DO is raised to Spec of the middle v , then a mismatch will arise between the “internal” θ -marking of DO and its “external” θ -marking, DO being a theme inside the lexical VP but a goal outside.

As for the middle v in American English, it has the lexical property of lacking the selectional feature in question. This parametric difference can be regarded as one of the properties that lexical categories usually have. For example, the verb *put* obligatorily takes a PP complement as well as a DP complement, but the verb *place* does not have that property. This is a selectional difference. The light verb v is a lexico-functional and different from Tense, for example, which is a purely functional head that is only composed of morphological features. Thus it is not so unreasonable to think that the light verb is subject to parametric variation with respect to the selectional feature for Move.

5.3. The Passivizability of the Direct Object

Now let us consider the passivization of the double object construction. American English allows IO to be passivized, which I will assume to proceed as is illustrated in (20):



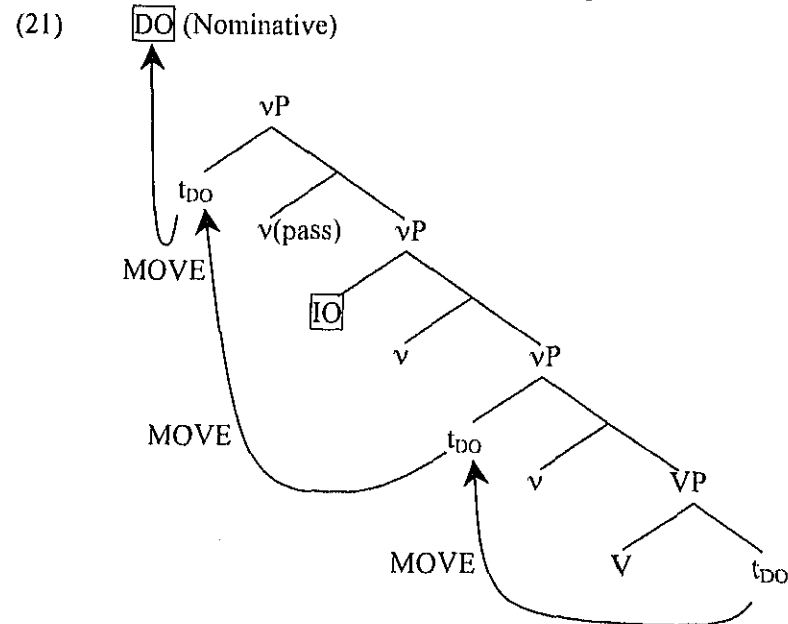
Here we have the passivized version of the highest v . The passive construction is characterized in terms of dethematization and Case absorption. Thus the passivized v does not θ -mark a DP in its Spec or Case-check any DP. The reason to posit this v rather than simply eliminating the active version of v is that there must be some

element that is responsible for the passive morphology of the verb. This *v* may also work to guarantee the existence of an “implicit argument,” for which see Baker, Johnson and Roberts (1989).⁴

The passivized *v* is combined with *vP* which the middle *n* is head of to form [*v vP*], which functions as a non-thematic predicate. The passivized *v* must have an element in its Spec to satisfy the derived predicate. This is basically the idea of Rothstein (1995). See also Oka (2000, 2001) for an attempt to derive the EPP effect from more general considerations of economy of derivation, adapting Rothstein’s idea.

Thus the passivized *v* in (20) must have the selectional feature to raise IO to its Spec. No thematic mismatch arises here, since the passivized *v* is not θ -marking. IO is further raised to end up in Spec of Tense. Case-checking of IO is successfully done by Tense, as far as IO assumes Nominative Case. Case checking of DO is done by the middle *v*, just as in the corresponding active construction. The derivation proceeds essentially in the same way in British English.

If DO is passivized over IO in American English, it will proceed as follows:



The raising of DO over IO is possible since the locality condition (19) is irrelevant. Case-checking of DO is also possible, as far as it has Nominative Case. However,

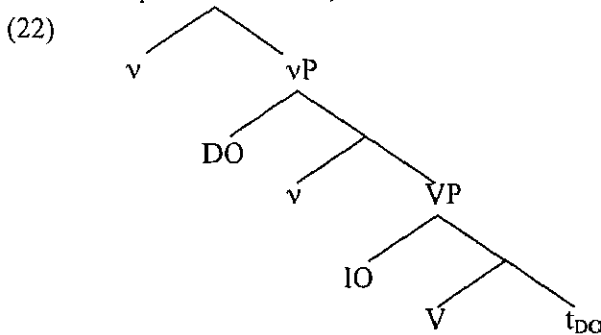
⁴ Radford (1997a, b) points out the following examples as evidence to support that the passivized verb have an VP-internal subject position:

- (i) The students were all arrested.
- (ii) There were several students arrested.

See Chomsky (1995) for more discussion about examples such as (ii).

there is no Case-checker for IO available here. The middle *v* cannot Case-checks IO under the mechanism of Agree, given Chomsky's (1995) reasonable assumption that Goal must be found in the complement domain of Probe. Thus, the derivation crashes.

Also in British English, IO cannot be Case-checked in Spec of the middle *v*. Note, however, that when the middle *v* is introduced in the course of derivation, IO is still inside its complement domain, as is illustrated in the following:

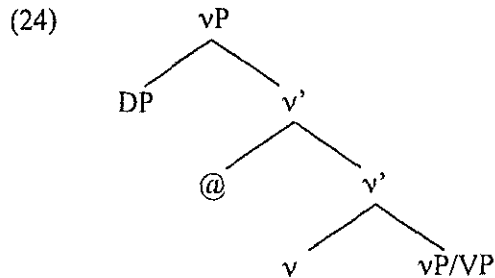
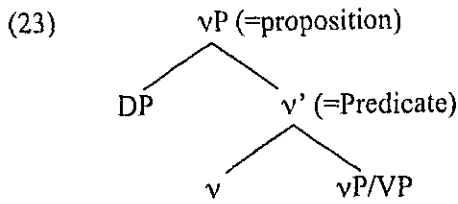


Under the locality condition (19), the middle *v* (the higher one in (22)) cannot select the D of IO as Goal for the purpose of Agree with respect to the relevant features for Case-checking, since DO is intervening. However, it can select IO as Goal for the purpose of Move, in which case the condition (19) is irrelevant. We may be able to think that a sort of “free rider” effect is showing up here. Let us suppose that once a Probe-Goal relation is established by an operation of Agree or Move, it can be used by another operation of Agree or Move. Thus in (22) the Probe-Goal relation that is established between the middle *v* and the D of IO for Move is also exploited by Agree for Case-checking.

5.4. *The Interpolation of an Adverb*

The parametric difference about whether the middle *n* raises IO from inside the lexical VP gives an account for the (in)possibility of interpolating an adverb between IO and DO.

First suppose that an adverb is merged to a predicate that is consisted of *v* and *vP/VP*, which is illustrated as in (23), yielding (24):



Here the merged adverb, modifying the predicate, scopes over the proposition.⁵

In the double object construction, thus, there are three predicates inside the maximal VP, since three instances of *v* are involved there. To intervene between IO and DO, an adverb must be merged to the predicate headed by the middle *v*, which is illustrated as the following:

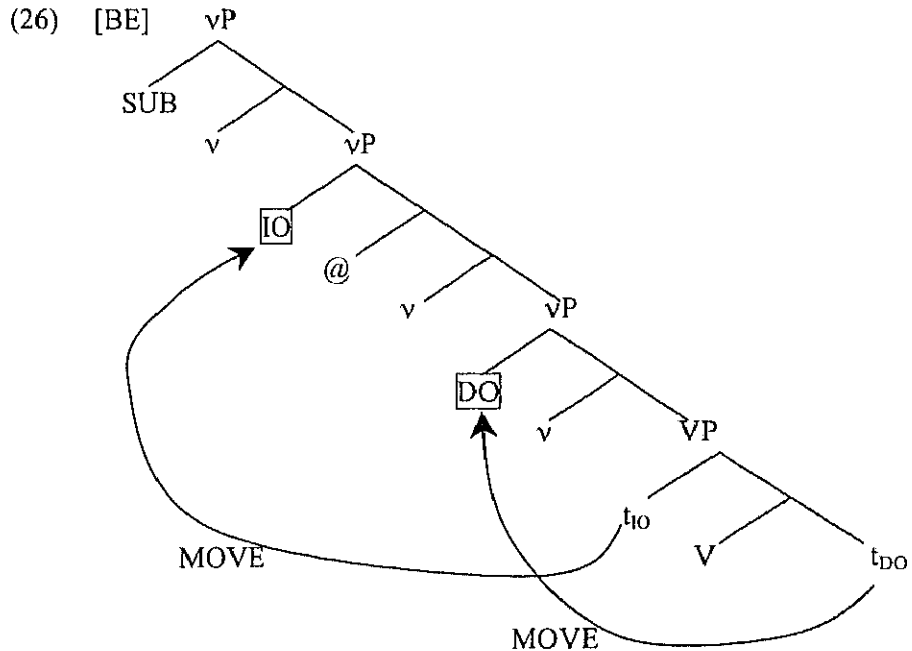
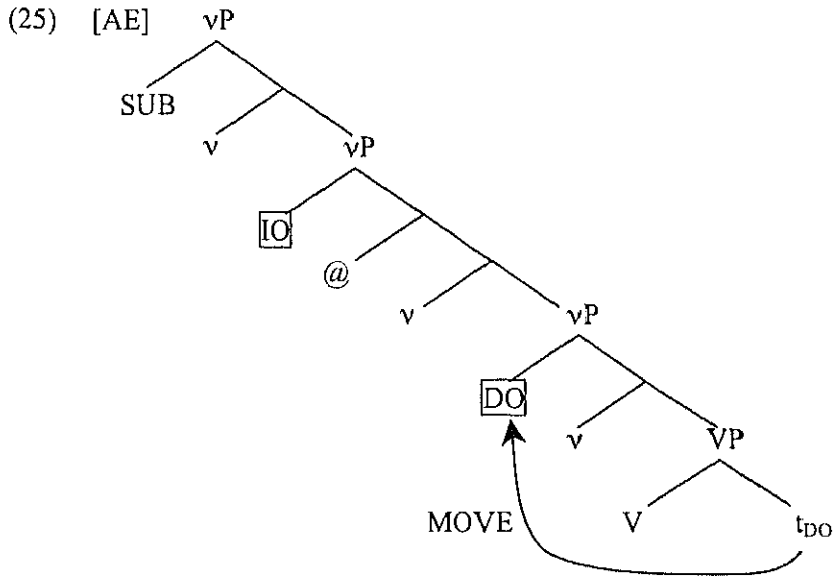
⁵ If the merger of the adverb is not a substitution but an adjunction, then the relative order between DP and the adverb will be indeterminable, under Chomsky's (1995) way of implementing Kayne's (1994) idea of antisymmetry, where the notion of c-command is defined as in (i):

- (i) X c-commands Y if (a) every Z that dominates X dominates Y and (b) X and Y are disconnected.

Suppose that c-command is defined in terms of not definition but containment, as in (ii):

- (ii) X c-commands Y if (a) every Z that contains X contains Y and (b) X and Y are disconnected.

Then DP asymmetrically c-commands the adverb, so that the order will be DP-Adverb. I will leave open whether the adverb is substituted or adjoined. I will not pursue the possibility of adjoining the adverb to *n*, either, which will yield the same order.



The verb is raised up to the highest v , so that the word order will be V-IO-Adv-DO at surface.

A difference between American English and British English is whether the original position of IO is included in the predicate [v vP] or not. Let us assume that the scope of a relevant adverb must properly include the core θ -proposition, which is defined as the minimal proposition that includes all the arguments except for the subject or their original positions. Thus, the core θ -proposition is the middle vP in

American English, and the lexical VP. In the former case the scope of the adverb, namely the middle vP , fails to properly include the core θ -proposition, yielding the ill-formedness.

The proviso "except for the subject" in the definition of θ -proposition will be eliminated, if the subject is universally originated inside the lexical VP. With this move, the θ -proposition will be the same as before in either type of English.

6. A Further Consequence: the Nature of Tense

So far we have seen the argument that the lexico-functional head v can have a selectional feature to raise DP to its Spec. This can be regarded as a property that reflects the lexical side of v . It is natural to suppose that Tense, on the other hand, cannot have such a selectional feature, since it can be considered as a purely functional in the sense that it only consists of morphological features.

In order to raise DP to its Spec, Tense must exploit the Probe-Goal relation established for Agree with respect to Case and agreement features. This is the reverse of the situation found in the case of passivization of DO over IO in British English. As a result, DP in Spec of Tense is with nominative Case and in agreement with the verb in the usual case of finite sentences. As far as Tense is concerned, movement to Spec can be always viewed as driven by morphological features, unlike in the case of v .

It is not unreasonable, however, to ask whether there is parametric variation about Tense in this respect. Suppose that Tense has a selectional feature for Move, then it will be possible that a phrase is raised to Spec of Tense without having nominative Case or agreeing with respect to other features.

Suppose that in ergative languages Tense is incapable of Case-checking, and that instead the aspectual v Case-checks with respect to the unmarked Case, namely, Absolutive Case. In the transitive construction the object is raised to Spec of the aspectual v and at the same time is Case-checked by this v for Absolutive.

Suppose further that the marked Case is checked by the v that externally θ -marks the subject, just as in the case of accusative languages, though the Case is called Ergative in this case. The subject is raised to Spec of this v from inside the lexical VP and its Ergative Case is checked at the same time. To satisfy the EPP, Tense further raises the subject, without Case-checking.

The derived structure is the same as in the case of accusative languages, with the subject and the object being in Spec of Tense and Spec of the aspectual v , respectively, though the former has the marked Case and the latter has the unmarked one. Thus, Tense is a kind of v in ergative languages. Various sorts of ergative

constructions in accusative languages, including the quirky Case subject, the Nominative object, the locative inversion, etc., may be able to be dealt with along the same line.

Another case that the lexical Tense could work is scrambling in languages such as Japanese. Since Kuroda (1988), an analysis has been to raise the scrambled phrase to Spec of Tense while leaving the subject in VP. This will be possible if Tense uses a selectional feature to raise some phrase over the subject while Case-checking the subject in Spec of externally θ -marking v . Oka (1996) also argues that A-scrambling in Japanese involves extra θ -marking in the scrambled position. This, if tenable, even means that Japanese Tense is more like a lexical verb.

Note that there is a tendency that languages with a rather free word order are OV-languages rather than VO-languages. If scrambling contributes to the flexibility of word order and the Tense's property of being lexical in the above sense is a necessary condition for scrambling, then it will not be uninteresting to try to relate the verb-finality with the lexicality of Tense. I will pursue this issue at another opportunity.

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