

## A Smuggling Approach to the Passive in English

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The analysis of the passive is one of the cornerstones of the Principles and Parameters approach to syntax. Consider the following example of a passive:

- (1) a. John wrote the book
- b. The book was written by John

According to the standard analysis, the passive suffix absorbs the accusative Case and external theta-role of the verb. The direct object (lacking Case) then raises to Spec IP. In the Principles and Parameters framework, there is no passive construction (see Chomsky 1982: 68, 126). Rather, principles of UG (e.g., Case Filter, Theta-Criterion, and properties of movement) determine the properties of sentences involving a passive participle.

A severe problem with the Principles and Parameters analysis of the passive is that the external argument DP *John* is generated in a completely different position in the active (Spec IP) than in the passive (complement of the preposition *by*). In this paper, I will propose an analysis of the passive where the external argument in the passive (1b) occupies the exact same underlying position as the external argument in an active sentence. In this way, the theory I propose here is more like that of *Syntactic Structures* (Chomsky 1957) than more modern analyses in the Principles and Parameters tradition.

### 1. Principles and Parameters Meets Syntactic Structures

The Principles and Parameters treatment of the passive is based around the following two principles (see Chomsky 1982: 124, Baker 1988, Jaeggli 1986, Roberts 1987, Baker, Johnson, Roberts 1989, Abarli 1989, and many others).

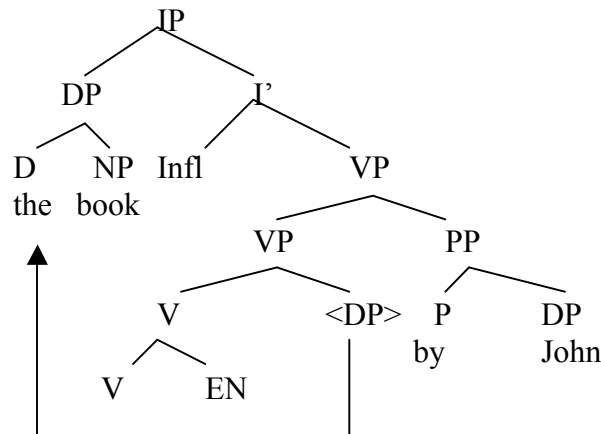
- (2) a. The passive suffix *-en* absorbs accusative Case
- b. The passive suffix *-en* absorbs the external theta-role

In the standard treatment these two properties are related by assuming that the passive suffix *-en* is itself an argument which is assigned Case and receives the external theta-role (particularly Jaeggli 1986, Baker 1988: 313, Baker, Johnson, Roberts 1989). Given these assumptions, consider how they apply to the following sentence:

- (3) the book was written by John

The passive suffix *-en* absorbs the accusative Case of *write* and the external (agent) theta-role. Since the DP [<sub>DP</sub> the book] needs to have Case assigned to it, it raises to Spec IP (a nominative Case position). Since the passive suffix *-en* has absorbed the external theta-role of the verb, the external argument does not need to raise to Spec IP to get Case, thus leaving Spec IP available for the direct object to move into. The structure of (3) is given in (4). In my analysis, I will reject both of the assumptions (2a) and (2b).

(4)



In the standard Principles and Parameters analysis, how does the post-verbal DP get assigned a theta-role in the passive? Jaeggli (1986: 599) points out that the preposition *by* does not on its own assign a theta-role (see also Lasnik 1988). Some examples which show this point are the following

- (5)
- a. The book was written by John
  - b. It was believed by everybody that Mary was a thief
  - c. Danger was sensed by John
  - d. A black smoke was emitted by the radiator
  - e. That professor is feared by all students
  - f. Mary was respected by John
  - g. A copy of Guns, Germs and Steel has now been received by each member of the incoming class.
  - h. Ted was bitten by the lovebug
  - i. I was told that by a little bird

In (5a), the DP *John* is an agent. In (5b-g), the theta-role of the post-verbal DP is not agent, but rather varies with the verb, suggesting that the preposition *by* does not assign a theta-role. The examples in (h) and (i) from Postal (2004) show that even idiomatic subjects can appear in *by*-phrases.

These examples show that the preposition *by* used in the passive is a dummy preposition. Dummy prepositions consist entirely of uninterpretable features, whereas locative ones also contain interpretable features (those yielding the locative semantics, on which see Collins 2001a).

Based on facts like those in (5), Jaeggli (1986: 590) explains theta-role assignment in the passive in the following way. First, the passive suffix *-en* absorbs the external theta-role of the verb. Second, the passive suffix assigns the PP headed by the preposition *by* the external theta-role (theta-role transmission). Third, the theta-role assigned to the PP percolates to the preposition *by*, and lastly *by* itself assigns the external theta-role to its DP complement. Baker, Johnson and Roberts (1989: 223) claim that the passive suffix *-en* is related to the DP in the *by*-phrase by virtue of forming a non-movement chain, similar to clitic doubling (see also Lasnik 1988: 10). In the remainder of

the paper, I will focus on Jaeggli's analysis, although both analyses suffer from similar problems (see also Baker 1988, and Fox and Grodzinsky 1998: 323 for discussions of theta-transmission).

The main problem with Jaeggli's analysis is that the external argument in the passive is assigned a theta-role (via theta-role absorption and transmission) in a way that is totally different from how the external argument is assigned a theta-role in the active (Spec IP in the Principles and Parameters framework). This difference is a clear violation of UTAH (Uniformity of Theta-Assignment Hypothesis) (Baker 1988: 46, 1997: 74): Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-Structure. In the Minimalist Program, there is no independent UTAH, rather the effects of UTAH follow from the restrictive theory of theta-role assignment. In the Minimalist Program, all theta-role assignment is configurational, in the sense that each syntactic position (e.g., Spec vP, complement V, etc.) is associated with a particular theta-role (or set of theta-roles). From the point of view of the Minimalist Program, it is necessary that the theta-role of the external argument in the passive be assigned in the exact same way as the external theta-role in the active.

Given this criticism of the Principles and Parameters treatment, consider now the analysis of the passive given by Chomsky (1957: 42-43, 78-81) in Syntactic Structures.

(6) If S1 is a grammatical sentence of the form

NP<sub>1</sub> – Aux – V – NP<sub>2</sub>

Then the corresponding string of the form

NP<sub>2</sub> – Aux + be + en – V – by + NP<sub>1</sub>

is also a grammatical sentence.

One of the main arguments for this rule is that it allows one to avoid restating all the selectional restrictions found in the active (e.g., \*"John frightens sincerity") for the passive as well (\*"sincerity was frightened by John"). The underlying structure of the active and the passive are identical. This identity accounts for the identity of selectional restrictions. Of course, there are many reasons, from the standpoint of the Principles and Parameters theory for rejecting (6). For example, it postulates a particular passive rule, and there are no particular rules or constructions in the Principles and Parameters theory. Second, translating (6) directly into the Principles and Parameters theory would involve accepting downward movement of the subject to the complement position of *by* (for a discussion assuming downward movement in the passive, see Chomsky 1975: 110).

I would like to propose an analysis that combines the best aspects of the Syntactic Structures analysis, and the Principles and Parameters analysis. As a first step, I propose that the external argument is merged into the structure in the passive in the exact same way as in the active. In particular, I propose that the external argument is merged into Spec vP in the passive, just as the external argument is merged into Spec vP in the active (see Goodall 1997, and Watanabe 1993: 337 who come to the same conclusion). This type of analysis of the passive is illustrated below:

- (7) “the book was written by John”
- a. John → Merge with *by*
  - b. [PP by John ]
  - c. [vP v VP] → Merge external argument
  - d. [vP [PP by John ] [v' v VP ] ] → Merge *be*
  - e. [vP *be* [vP [PP by John ] [v' v VP ] ] ] → Merge Infl
  - f. [IP Infl [vP *be* [vP [PP by John ] [v' v VP ] ] ] ]  
→ Internal Merge of [DP the book] into Spec IP
  - g. [IP [DP the book ] [I' Infl [vP *be* [vP [PP by John ] [v' v VP ] ] ] ] ]

In this derivation, a PP *by*-phrase is merged into Spec vP. Since *by* makes no semantic contribution, its presence must be forced by syntactic reasons. I will return to this issue in detail in section 3, where I will suggest that in fact DP not PP merges into Spec vP.

Putting aside the exact syntax of the preposition *by* for the moment, the analysis of the passive involving an external argument in Spec vP entails that the passive suffix *-en* does not absorb the external theta-role. In my theory, the past participle suffix (“I have seen John”) and the passive participle suffix (“John was seen”) do not differ with regard to being able to absorb an external theta-role. In fact, I would like to make an even stronger claim: there is no difference at all between the passive participle suffix and the past participle suffix. Neither one absorbs an external theta-role and neither one absorbs Case. In support of this claim, note that there is no morphological difference between the passive participle and the past participle in English. In fact, Quirk et. al. (1985: 97), simply refer to the *-ED* participle, which they define as a nonfinite verb form that appears in the perfective aspect following *have* and in the passive voice following *be* (see also Watanabe 1993: 299, 364, who makes a similar point).

I will assume that the participle morpheme *-en* heads a PartP, and that V raises and adjoins to Part (forming the participle). Furthermore, I will assume that Part takes a VP complement, and that PartP is the complement of *v*. Such a structure (where vP dominates PartP) is suggested by the fact that in a language like French the external argument never agrees with a participle (since the external argument starts out in Spec vP, which dominates PartP) (see Kayne 2000: 21, 2000: 114, 115 on past participle agreement).

Putting these assumptions together, we have the following representation for vP with a participle:

- (8) [vP DP [v' v [PartP *en* [vP V DP ] ] ] ]

In this structure the verb undergoes head movement to Part, giving rise to the participle. Furthermore, the presence of participle agreement (e.g., in French) suggests that in the passive there is A-movement through Spec PartP.<sup>1</sup>

<sup>1</sup> There might be some parametric variation in the position of PartP, as in the Slavic languages, where subject agreement is possible.

## 2. PartP Movement in the Passive

A major problem with the derivation in (7) is that it seems to yield the wrong word order of a passive sentence. If [<sub>PP</sub> by John] is merged in spec vP, and if specifiers precede heads and complements in English (Spec-Head-Complement), we predict the word order in (9a):

- (9) a. \*the book was by John written  
b. the book was written by John

The fact that (9a) is unacceptable suggests one of the following three possibilities: (i) that the specifier of vP is to the right of v, or (ii) that the by-phrase moves to the right of the participle by extraposition or (iii) that there is movement of the participle *written* to the left of [<sub>PP</sub> by John].

On the rightward specifier analysis, the structure of the passive would be: [<sub>vP</sub> [<sub>v'</sub> v PartP ] [<sub>PP</sub> by DP ] ]. The rightward specifier analysis violates the generalization in English that specifiers always precede heads (Spec-Head-Compl). Furthermore, the rightward specifier analysis makes the wrong predictions about standard Barss and Lasnik (1986) c-command tests.

- (10) a. \*the book was given to any student by no professor  
b. \*the book was given to the other by each professor  
c. the book was given by no professor to any student  
d. a book was given by each professor to the other

For example, the rightward specifier analysis wrongly predicts that a negative quantifier in the by-phrase should license a preceding negative polarity item (see (10a)) and that *each* in the by-phrase should license a preceding *the other* (see (10b)). Note that the external argument can c-command following constituents, as shown in (10c) and (10d).

Similarly, the rightward movement (extraposition) analysis of by-phrases makes the wrong predictions about c-command. As is well known, a moved negative quantifier can license a negative polarity item ("at no time did anybody enter the museum"). Given this fact, under the extraposition analysis (where the by-phrase extraposes and right adjoins to vP), we would expect a negative quantifier in a by-phrase to license a preceding negative polarity item (\*"the book was given to any student by no professor"), contrary to fact. In sections 6, 8 and 9, I will discuss c-command facts more systematically.

Excluding the rightward specifier and the rightward movement (extraposition) analysis of the by-phrase, there are in principle two possibilities for deriving the word order in the passive: head movement and XP movement.

- (11)    written                    [PP by John]                    <written>
- 
- Head Movement or XP Movement??

What is the landing site of the participle? Consider the following passive verbs from Kiswahili (see Hinnebusch and Mirza 1998: 111):

- (12)    a.        Mama yangu a-li-tengenez-a        shati    langu  
                  mother my    SM-past-made-fv    shirt    my  
                  “My mother made my shirt”
- b.        Shati langu    li-li-tengenz-w-a        na mama yangu  
                  shirt my        SM-past-made-pass-fv by mother my  
                  “my shirt was made by my mother”

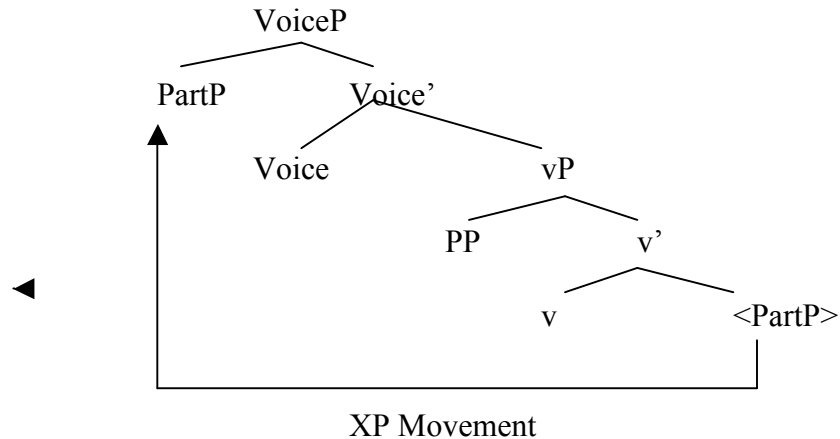
In this example, the verb *tengenez* “make” is followed by the passive suffix *-w*. I will call the projection that the passive suffix heads VoiceP. Given the existence of VoiceP in the passive in Kiswahili, I will assume that such a phrase exists in UG. Since we need a position to which the participle can move in English, it seems natural to employ the VoiceP. English and Kiswahili differ in that English uses the participle in the passive, whereas Kiswahili does not use a participial (or non-finite) form in the passive. I return to this fact about English below (see (24) and (25)).

Given the existence of VoiceP, the head movement analysis of the passive is sketched below (see Kural 1998 for a head movement analysis).

- (13)
- 
- Head Movement

In the XP movement analysis, there is also a VoiceP, but this time the movement is into Spec VoiceP. This analysis is illustrated below:

(14)



Note that both the head movement and the XP movement analyses result in the verb preceding the external argument. I will present two arguments in this section that word order in the passive is due to XP movement, not head movement.

Consider first the distribution of particles in the passive construction. When a verb with a particle is passivized, the only order possible is [...V Prt EA ...] (EA stands for external argument). The order [...V EA Prt...] is impossible, as the following examples show:

- (15) a. The argument was summed up by the coach  
b. \*The argument was summed by the coach up

- (16) a. The paper was written up by John  
b. \*The paper was written by John up

In no case can a particle follow the external argument in the passive (b) sentences (see Collins 2003c for a similar observation about Quotative Inversion). I will adopt the analysis of particle constructions below (see Collins and Thráinsson 1996), where the Prt occupies the complement position of VP:

- (17) [<sub>VP</sub> Subj [<sub>v'</sub> v [<sub>VP</sub> Obj [<sub>v'</sub> V Prt ] ] ] ]

Given the above structure, if the passive did involve verb movement to Voice, then a possible word order would be [...V EA prt ...], which is impossible. One way that we could force the order [...V prt EA ...] would be to add an additional stipulation that the particle must incorporate into the verb and remain incorporated into the verb when little v raises to Voice. However, I see no natural way forcing the particle to incorporate into the verb. For example, neither the verb nor the particle are affixal, which might motivate the incorporation. Additionally, on the incorporation analysis, we would have to explain why the particle adjoins to the right of the verb instead of to the left of the verb (as might be expected on the assumptions of Kayne 1994 where only left adjunction is possible). If left adjunction of the particle to the verb were possible, the order of the verb and particle should be the following: [...part V EA ...] contrary to fact. Lastly, if particle

incorporation were obligatory in the passive, it is unclear why it is not obligatory in the active, where the verb can be separated from the particle (“I will call John up”).

It is a general fact about particles that they never follow post-verbal PPs (see Kayne 1985: 104) (e.g., \*”John teamed with Bill up”). I suspect that the ultimate explanation for Kayne’s generalization about particles and PPs will probably involve VP movement (similar to the PartP movement found in the passive).

Another argument against head movement in the passive comes from the pseudo-passive, illustrated below:

- (18) a. John was spoken to by Mary  
b. \*John was spoken by Mary to
- (19) a. The clown was laughed at by the children  
b. \*The clown was laughed by the children at

In pseudo-passives, it is not just the participle alone that precedes the external argument, but rather the participle followed by the stranded preposition. If the sequence *spoken-to* in (18a) were a head, then the order [...V prep EA...] could be derived by head movement. In fact, Bresnan (1982: 51) analyzed pseudo-passives as a form of incorporation, where under adjacency, the V-P sequence forms a single complex verb. The evidence for this analysis includes the following adjacency data (Bresnan 1982: 54):

- (20) a. \*The fields look like they’ve been marched so recently through  
b. \*Everything was paid twice for  
c. \*Your books were gone most thoroughly over

Postal (2004) and Baltin and Postal (1996) provide abundant evidence against reanalysis proposals. For example, Postal (2004) gives the following examples:

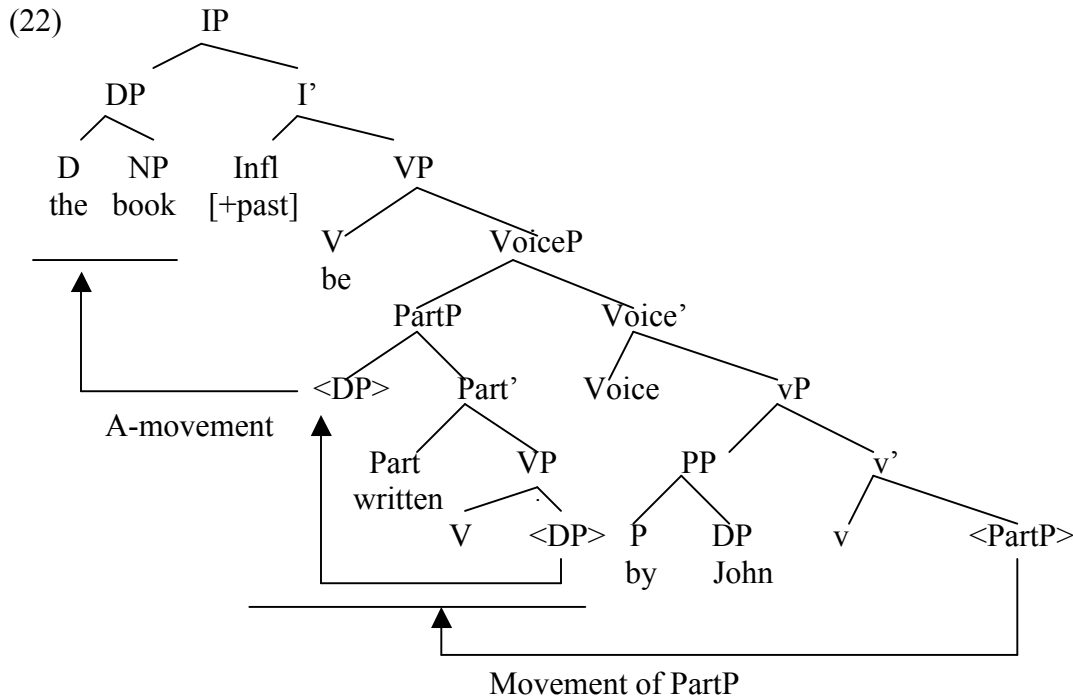
- (21) a. The bridge was climbed onto by the gorilla, and then,  
a few minutes later, off of by the chimp.  
b. The bridge was flown over but never, I am quite sure, under by  
the daredevil pilot.

In (21), *off of* and *under* are not adjacent to any verb, and so it seems implausible that incorporation is at play here. Postal and Baltin (1996: 143) also note that the lack of reanalysis in passives poses a problem for the Case absorption account of passives: “...if the Ps stranded in pseudopassives are independent of V, the need for NP-movement, which is a key element of the received GB account of passives in general, would not arise in any previously principled way in pseudopassives.” I will return to this point in section 3.

Since the verb followed by the preposition does not form a single lexical item, pseudo-passives are evidence for phrasal movement analysis of the passive. For example, a head movement analysis wrongly predicts the sentence in (18b) to be well-formed. In (18b), the head *spoken* by itself would move to Voice, leaving the stranded preposition in its underlying position (complement of the verb), yielding the order: [...V EA Prep...].



Given the above two arguments (based on particles and pseudo-passives), I will henceforth assume that the passive involves phrasal PartP movement and not head movement (namely, V to Part to v to Voice movement). Putting all these conclusions together, we have the following structure for the passive (“the book was written by John”).



The structure of a passive with a particle verb would be exactly like the structure in (22), except that the VP would contain a particle: [<sub>VP</sub> <DP> [<sub>V'</sub> V prt ] ]. In fact, there is cross-linguistic evidence that particles undergo movement to Spec PredP (see Koster 1994, Kayne 1998: 136). What is important on our analysis is that the particle does not move to a position outside of PartP, since if it did PartP movement to Spec VoiceP would strand the particle in a position following the external argument (giving rise to the unacceptable (15b-16b)).

Note that we are making the assumption that V does not raise to v in the passive. Rather V raises to Part, and then PartP raises to Spec VoiceP. The more general principle seems to be the following: V raises to v, unless it raises to Part first (contra Chomsky (2001b: 10) who claims that little v determines that a root is verbal, which in turn explains the obligatoriness of verb raising to v).

Given the structure in (22), we can explain auxiliary selection in the passive in English. The facts are show below:

- |      |    |                            |                           |
|------|----|----------------------------|---------------------------|
| (23) | a. | John has seen the book     | (active, no VoiceP)       |
|      | b. | *the book has seen by Mary | (passive, VoiceP present) |
|      | c. | the book was seen by Mary  | (passive, VoiceP present) |
|      | d. | *John was seen the book    | (active, no VoiceP)       |

This distribution suggests the following two principles<sup>2</sup>:

- (24) a participle (PartP) must be licensed, by
  - a. being c-selected by the auxiliary *have*, or
  - b. moving to Spec VoiceP
- (25) a. the auxiliary verb *have* obligatorily c-selects for a participle
- b. Voice requires a participle (PartP) to move to Spec VoiceP

The situation is reminiscent of structural Case on DPs. A structural Case feature needs to be checked by one of a small number of heads (e.g., Prep, Infl), and the heads that can check structural Case must do so. The analogy between the licensing of a participle and structural case is strengthened by the observation that the participle affix does not seem to have any interpretable features. The participle suffix *-en* cannot be interpreted as an external argument, since the external argument is actually in Spec vP in the passive. On the hypothesis elaborated in section 1, there is no difference between the past and passive participles (see also Watanabe 1993: 299, 364). Therefore, the semantic contribution of the participial suffix *-en* cannot have the feature [+past], since the event described by “the book is being written” does not have to take place in the past. Therefore, *-en* has no interpretable features, and it is very similar to structural Case in English. Since *-en* has uninterpretable features, they must be checked. I propose that checking the uninterpretable features of *-en* is the syntactic function of the auxiliary *have*<sup>3</sup> and the Voice head (See Collins 2002 on the theory of subcategorization, where it is suggested that some cases of subcategorization fit into checking theory)<sup>4</sup>.

Now consider again the paradigm in (23). In (23a) the auxiliary verb *have* takes a vP complement containing a participle, which is allowed under (24a, 25a). In (23b), the auxiliary *have* has a VoiceP complement. A PartP is in the specifier of VoiceP, but the participle has already been licensed by Voice, and so cannot enter a checking relation with *have* as well (see Koopman and Szabolsci 2000: 49 for a similar principle concerning infinitives in Hungarian).

In (23c), the auxiliary verb *be* takes a VoiceP complement, which is consistent with the fact that the auxiliary *be* in English takes a wide range of complements (e.g.,

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<sup>2</sup> The fact that *have* and Voice both license participles indicates that they share a common component, which could be captured by postulating that *have* is equal to Voice+be (see Kayne 2000: 107-130). I will not develop this idea here for reasons of space.

<sup>3</sup> More precisely, the auxiliary *have* has an uninterpretable [uV] categorical feature. Once the relation Agree(have, participle) is formed, the uninterpretable feature of the participial *-en* affix is deleted as a reflex.

<sup>4</sup> I do not adopt a checking analysis for present participles (“having no money at all, I couldn’t buy that”), nor for adjectival participles (“John kept the door closed”). On the other hand, adjuncts such as, “caught in the act, I decided to make a run for it” would be given a similar analysis. I assume get-passives involve a VoiceP, but I have not worked out the details.

AdjP, progressive participles, PPs, etc.). In general, the auxiliary *be* does not seem to impose any syntactic requirements on its complement.

Since *be* takes a wide range of complements, we may also expect it to appear with the past participle, as in (23d), which is not possible. The sentence is straightforwardly ruled out by (24), the requirement that a participle be licensed. Assuming that (23d) does not involve a VoiceP, the only way for the participle to be licensed is for it to be c-selected by *have*, which is not present. Now, suppose that (23d) had a VoiceP (so in effect, it is passive). Then (23d) is ruled out for the Case reasons given in detail in the next section.

Given these principles, consider the following contrast:

- (26) a. A book written by John is on the table  
b. \*The man written a book just came in  
“The man who has written a book just came in”

A passive participle, but not a past participle, can serve as a modifier of a noun phrase. This contrast follows straightforwardly from my theory. In (26a), Voice requires a participle, and the participle needs to be licensed, which it is. In (26), the participle needs to be licensed, but there is neither a Voice head, nor the auxiliary *have*. Therefore the sentence is ungrammatical.

### 3. *By* as the head of VoiceP

There are a number of problems with the above analysis all related to the status of the by-phrase. The first problem is that normally a DP (not a by-phrase) is generated in Spec vP in the active. By a very strict interpretation of UTAH, we expect that a DP (not a PP) should be generated in Spec vP in the passive as well.

Furthermore, the account I presented above leaves unexplained the distribution of the by-phrase in English. Why is the by-phrase restricted to the external argument? Why can't by-phrases occur in other syntactic positions? Why aren't sentences like the following possible:

- (27) \*John was written by the book  
“the book was written by John”

Instead of the direct object DP [<sub>DP</sub> the book] moving to Spec IP in the passive, the external argument would move to Spec IP, and the direct object (internal argument) would be in a by-phrase. Recall that the by-phrase occurs in Spec vP because of the sequence of operations Merge(by, John), and Merge(PP, vP). There is nothing to enforce this sequence of operations instead of a different sequence Merge(by, [<sub>DP</sub> the book]), and Merge(write, PP) yielding (27).

In fact, the problem is more general. What would block by-phrases from occurring in all kinds of positions? For example, why couldn't a by-phrase appear in nominals such as “the leg of (\*by) the table” or “student of (\*by) physics”, and in the complement position of an adjective “proud of (\*by) his son”, and in certain subject positions “for (\*by) John to be happy”.

Facts such as these make it clear that on the analysis of the passive proposed in the preceding sections we need to impose a requirement on the by-phrase that it appear in Spec vP: [<sub>VP</sub> [<sub>PP</sub> by DP ] v']. The question is how such a requirement could be imposed. A theory based on Agree seems impossible. Since *by* does not c-command little *v*, and little *v* does not c-command *by* (at any step in the derivation), it is not possible to claim Agree(*v*, *by*) (or Agree(*by*, *v*)) enforces the requirement that the by-phrase appear in Spec vP. Furthermore, it is impossible to state the requirement at the LF-interface, since *by* must be deleted by then (since *by* consists purely of uninterpretable features). Lastly, it is impossible that the requirement be stated at the PF-interface, given the syntactically impoverished nature of that interface.

It might be possible to solve the problem in (27) by making reference to subcategorization (this seems to be the position of Watanabe 1993: 337). Assume that *v* can optionally subcategorize for a by-phrase specifier (but that *V* cannot subcategorize for a by-phrase). In an active clause, *v* does not subcategorize for a by-phrase, but in a passive clause it does. Therefore, little *v* would have the optional subcategorization frame [<sub>byP</sub>].

The problem with the subcategorization approach is that the information that *v* can have a by-phrase specifier is predictable: all transitive verbs (with some systematic exceptions, see Postal 1995, 2001 for extensive discussion<sup>5</sup>) can be passivized and have a by-phrase. I am assuming that a lexical entry consists solely of non-predictable information. Chomsky (1995: 235) gives a recent statement of this idea: “I understand the lexicon in a rather traditional sense: as a list of ‘exceptions,’ whatever does not follow from general principles”. Furthermore, I am assuming that subcategorization frames are part of lexical entries. Therefore, there is no reason to list the subcategorization frame [<sub>byP</sub>] as part of the lexical entry of little *v*.

Given that the subcategorization frame [<sub>byP</sub>] is not present in the lexical entry of little *v*, one approach would be to claim that the subcategorization frame [<sub>byP</sub>] is an optional feature added when the numeration is formed (e.g., when little *v* is chosen from the lexicon, see Chomsky 1995: 236 on optional features). I believe that this approach misses the real generalization, which is that dummy *by* requires a vP (and not vice-versa): if dummy *by* appears, then it is certain that there is a vP in the structure<sup>6</sup>. On the other

<sup>5</sup> Postal (2001) claims that there are three different types of object relation in English (2=direct object, 3=indirect object, and 4=subject). Verbs with a 3 object (“her name escapes me”), or a 4 object (“a fish course began the dinner”) do not passivize. Crucially, there is much independent evidence for classifying objects in this way (as 2s, 3s or 4s). I believe it is possible to give phrase structure translations of Postal’s 3 and 4 relations, but I will not do so for reasons of space.

<sup>6</sup> I put aside the use of *by* in nominals, like “a book by Chomsky”, where the interpretation suggests that there is an implicit verb meaning “produce” and that “Chomsky” is the external argument of that verb. For cases such as “destruction of the city by the Romans”, it seems plausible to me that the nominalization contains a *v*. I also put aside the case of *faire-par* in French as beyond the scope of this article. Furthermore, I have nothing at present to say about Italian and German where the preposition used in derived nominals is different from the preposition used for the external argument in a passive.



Chomsky 1995, Collins 1997), which also assigns the external theta-role. These two features (Case checking and external theta-role) are distinct, so it is natural to ask whether they can ever be dissociated. I suggest that it is precisely in the passives that the two features come apart and are projected on two different heads:

- |      |    |          |           |                              |
|------|----|----------|-----------|------------------------------|
| (29) | a. | active:  | v         | assigns external theta-role, |
|      |    |          | v         | checks accusative Case       |
|      | b. | passive: | v         | assigns external theta-role  |
|      |    |          | Voice[by] | checks accusative Case       |

In the passive, the Case feature of *v* is divorced from *v* and is projected as part of the VoiceP<sup>7</sup>. To be more precise, I will adopt the following condition ([uF] stands for “uninterpretable/unvalued feature”):

- (30) Suppose X (little *v* or Prep) has a Case checking feature [uF], then it is possible for [uF] to be dissociated from [uF], and for [uF] to be added to the numeration as part of the functional head VoiceP.

Recall that Postal and Baltin (1996) argued that reanalysis does not exist, and hence pseudo-passives pose a problem to GB analyses of the passive. To rephrase their problem, how can the Case feature on a preposition be absorbed by a passive suffix *-en* that does not appear on the preposition but rather on the verb (e.g., “John was spoken to”, not \*“(John was speak to-ed)”, especially if there is no reanalysis (incorporation) of the preposition into the verb? The account of Case checking in the passive outlined above solves this problem easily. In a passive, the Voice head takes the place of the Case feature of the preposition (instead of the verb, which is unergative). There is no Case absorption, so no need for reanalysis.

In light of the above analysis, where *by* heads VoiceP, consider the following sentences (see Baker, Johnson and Roberts 1989: 229):

- (31) a. John seemed to have left  
b. \*It was seem-ed by John to have left  
c. \*It was seem-ed to have left by John

According to Baker, Johnson, Roberts (1989: 230), the problem with (31b-c) is that the passive suffix is external to the VP (generated in Infl), so it must receive the external theta-role, but *seem* does not have an external theta-role to assign to the passive suffix.

In my approach, the passive suffix does not receive a theta-role, so Baker, Johnson and Robert’s (1989) approach is unavailable to me. First, I assume that the examples in (31b-c) involve a VoiceP. Otherwise, they will be ruled out since the

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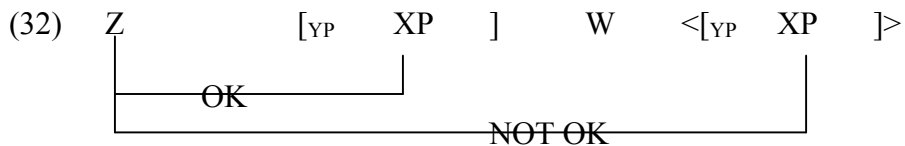
<sup>7</sup> My position is similar to that of Hoekstra 1996:43, who postulates that “Accusative is the result of the incorporation of an oblique feature”. Also relevant here is Koizumi (1995) where the head that checks Case (Agro) and the head that assigns the external theta-role are always dissociated.

participle is not licensed. One way to form (31b) and (31c) is if the DP *John* moved to Spec vP (recall that vP is the complement of VoiceP), which I assume is impossible (since Spec vP is the position for external arguments, which *seem* does not have).

In this section, I have analyzed *by* as the head of VoiceP. This analysis supports the conclusions of Kayne (2000, 2001, 2003), and Collins (2003a), where an adposition composed purely of uninterpretable features does not take a DP complement. I do not think the analysis of *by* given here would extend to directly locative prepositions, such as *on* or *in*. Locative prepositions have an argument structure and locative semantics (given in Collins (2001a)). Therefore, we expect the locative preposition to combine directly with its argument: [<sub>PP</sub> in DP] (on locative prepositions see Reinhart and Reuland 1993). Similarly, in many languages locative adpositions are clearly inalienable nouns, with a syntax completely different from uninterpretable adpositions (e.g., see Collins 2001a, 2003).

#### 4. Smuggling

Smuggling is defined as follows: Suppose a constituent YP contains XP. Furthermore suppose that XP is inaccessible to Z because of the presence of W (a barrier, phase boundary, or an intervener for the Minimal Link Condition and/or Relativized Minimality) which blocks a syntactic relation between Z and XP (e.g., movement, Case checking, agreement, binding, etc.). If YP moves to a position c-commanding W, we say that YP smuggles XP past W. This is illustrated as follows:



In this example, YP is the smuggler, XP is the smugglee, and W is the blocker<sup>8</sup>.

It is important to note that smuggling derivations assume that Freezing (Muller 1998: 124) does not hold for all types of movement, where Freezing is defined as follows (see also Takahashi 1995, and Koopman and Szabolcsi 2000: 38).

(33) \*X [<sub>Y</sub> ... <X>... ] <Y>

Now suppose that in deriving the passive, PartP movement to Spec VoiceP had not taken place:

(34) \*the book was by John written

<sup>8</sup> Baker (1988: 180, 189) discusses smuggling derivations in the context of the causative. Basically, VP movement to the embedded Spec CP in a causative allows an embedded object to show properties of a matrix object (e.g., being able to undergo A-movement to the matrix Spec IP in the passive). This derivation is remarkably similar to what I propose for the passive. See also Poletto and Pollock (2004) for another kind of smuggling derivation.

In this sentence, the object must raise over the in-situ subject into Spec IP. This should give rise to a Minimal Link Condition violation (see Chomsky 2000: 122) and a violation of Relativized Minimality (see Rizzi 2001). For example, since the external argument in a passive is in Spec vP, an A-position, it should block A-movement of the object to Spec IP by Relativized Minimality.

Smuggling gives us another argument against the head movement analysis of the passive outlined in section 2. If the head movement analysis of the passive were correct, there would be no way that the direct object of transitive verb could be smuggled over the external argument in the passive.

Consider now the implications of my analysis of the passive for the definition of strong phase. Chomsky (2001a: 12, 43 fn. 8, 2001b: 25) suggests that  $v^*$  ( $v$  with full argument structure) is a strong phase head. For Chomsky, the  $v$  found in passives and unaccusatives does not count as a strong phase head, because it lacks an external argument. The data in this paper entails that passive  $v$  is a  $v^*$  (a strong phase head), since it has an external argument. Therefore, there is a near paradox: the passive has a syntactically present external argument, but it behaves identically to unaccusatives as far as phases go.

One possible solution to this dilemma is the following. At the point in the derivation where PartP has moved to Spec VoiceP, PartP is in a sense dissociated from the external argument which has been left behind in Spec vP. So this PartP is like an unaccusative (for which vP does not have an external argument). Therefore, neither the moved PartP nor an unaccusative vP are strong phases.

But what about passive  $v$ , could it be a strong phase head? Consider the sentence “the book was written by John”. After *John* is merged into Spec vP, the DP [the book] is still contained within PartP. Therefore, the complement of  $v$  cannot be spelled out at that point. Only when PartP raises to Spec VoiceP can the complement of  $v$  be spelled out. This conclusion suggests that Voice, not  $v$  could be the strong phase head in the case of the passive (that is the head triggering spell-out of its complement). In effect, Spec VoiceP is providing the escape hatch (via smuggling) for the movement of the internal argument to Spec IP.

## 5. The Passive without the By-Phrase (Short Passives)

We can now ask whether PartP movement is needed in passives without by-phrases. As is well known, there is data showing that even though the external argument in short passives is not phonetically overt, it is syntactically present:

- (35) a. Such privileges should be kept to oneself  
(Baker, Johnson Roberts 1989: 228)
- b. Damaging testimony is always given about oneself in secret trials  
(Roberts 1987)
- (36) a. The book was written drunk
- b. At the commune, breakfast is usually eaten nude
- c. This song must not be sung drunk (Baker 1988: 318)



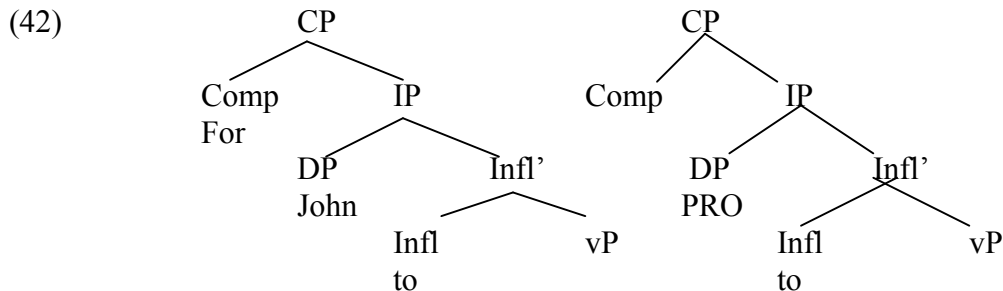


- (40) a. Voice = by (with overt DP)  
 b. Voice = null (short passives)

The relationship between the passive with a by-phrase and the passive with an implicit argument is similar to the relationship between infinitival clauses with an overt lexical subject and infinitival clauses with a PRO subject.

- (41) a. For John to win would be exciting  
 b. PRO to win would be exciting

In particular, it is standardly assumed for infinitival clauses that both (a) and (b) have a filled Spec IP, but that the element filling Spec IP is overt only in (a). The two structures are given below:



A natural question is whether the *to* in the short passive has a Case feature, and if so, how it is checked. A similar question comes up in the case of PRO in Spec IP. Chomsky and Lasnik (see Chapter 1 of Chomsky 1995) suggest that PRO bears null Case, which is checked by *to* (see Boskovic 1997 for the most complete development of this idea). As is well known, this analysis cannot extend to the Infl *to* involved in raising constructions, since no Case is checked by the embedded clause Infl in raising construction.

Although the null Case analysis is appealing in various ways, it suffers from many difficulties. First, it is difficult to draw a semantic distinction between raising *to* and control *to* (see Collins 2001b for a discussion). Second, control *to* and raising *to* are phonologically identical, and appear in the same position of the clause (e.g., both take a vP complement). In fact, outside of the suggestion that control *to* checks null Case, but raising *to* does not, there are no syntactic differences between them (in particular, both license vP deletion, see Collins 2001b for discussion). Lastly, there are cases like (41), where the PRO variant and the lexical subject variant each have the same *to*. If *to* checks null Case in [PRO to leave], then why doesn't the Infl *to* check null Case in [for John to leave].

All of these problems can be resolved if we postulate that Comp, not Infl, checks null Case. First, the same Infl *to* is used in both control and raising, so we do not expect to find any systematic semantic, phonological, or syntactic differences between them. Second, since the Infl *to* does not check null Case, the alternation “(for John) to win” poses no problem. On my theory, the only difference between “to win would be exciting”

and “John seems to be nice” is the fact that there is a null Comp checking null case in the former, but presumably no Comp at all in the later. In fact, Rizzi (1997: 304) arrives at an identical conclusion (Comp checks null Case), on the basis of a completely different argument. On the basis of adjacency effects between Comp (in particular, Fin in his system), Rizzi claims “Null Case is sanctioned by [-fin] under government”.

Therefore, in (41b) the minimal Comp checks the null Case of PRO in Spec IP under c-command. Extending this analysis to the null argument in the passive, we can say that null Voice checks the Case of the PRO found in the short passive. Therefore, the empty category in the passive is simply arbitrary PRO. As Baker, Johnson and Roberts (1989: 228) note, identifying the implicit argument of the passive with arbitrary PRO explains such sentences as the following: “such privileges should be kept to oneself”, on analogy with “to be nice to oneself is a priority”.

On my analysis, there are two differences between *by* and the prepositional complementizer *for*. First, the former takes a vP complement, while the later takes an IP complement. Second, the later does not trigger XP (PartP) movement to its specifier.

## 6. Remnant Movement and Stranding

Recall that particles and stranded prepositions (in pseudo-passives) cannot occur following the external argument in a passive:

- (43) a. The argument was summed up by the coach  
b. \*The argument was summed by the coach up
- (44) a. John was spoken to by Mary  
b. \*John was spoke by Mary to

As discussed in section 2, the data in (43) and (44) suggest that particles and the preposition stranded in the pseudo-passive do not undergo movement, or at least, they do not undergo movement to a position outside of the PartP.

These sentences raise the general question of what can appear after the external argument in the passive. A range of possibilities is illustrated below:

- (45) a. The table was wiped clean by John  
b. ??The table was wiped by John clean  
c. The metal was hammered flat by John  
d. ??The metal was hammered by John flat

The resultative secondary predicates in (45) are much more acceptable when they precede the external argument than when they follow the external argument, suggesting that these resultative AdjPs do not undergo movement out of the PartP, but rather must be pied-piped with the PartP just like particles<sup>10</sup>.

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<sup>10</sup> On Koster’s 1994 analysis, Dutch resultative secondary predicates pattern like particles in moving to Spec PredP.

The second object of a double object construction patterns like particles, stranded prepositions and resultatives. The examples below show that the theme in a DOC cannot follow the external argument in a passive.

- (46) a. Mary was given the book by John  
b. \*Mary was given by John the book

The only way to derive such a sentence would be to move the theme DP over the goal DP in Spec ApplP (see Collins 1997). The derivation is shown below:

- (47) a. [<sub>PartP</sub> Mary [<sub>Part'</sub> Part [<sub>ApplP</sub> <Mary> [<sub>Appl'</sub> Appl [<sub>VP</sub> V [<sub>DP</sub> the book ]]]]]]  
b. [<sub>XP</sub> [<sub>DP</sub> the book ] [<sub>X'</sub> X [<sub>PartP</sub> Mary [<sub>Part'</sub> Part [<sub>ApplP</sub> <Mary> [<sub>Appl'</sub> Appl [<sub>VP</sub> V <DP>]]]]]]]

The data suggests that the licensing position for [<sub>DP</sub> the book] is dominated by ApplP, and that further movement to a position outside of PartP is impossible.

Lastly, consider the following examples involving infinitival IPs, PPs and finite CPs:

- (48) a. I was convinced to leave by John  
b. I was convinced by John to leave  
c. John was believed to be telling the truth by Mary  
d. John was believed by Mary to be telling the truth

- (49) a. The car was driven to Maine by John  
b. The car was driven by John to Maine  
c. the book was given to Mary by John  
d. the book was given by John to Mary

- (50) It was believed by the students that they would have an exam


I analyze the IP, PP, and CP data in (48-50) in terms of remnant PartP movement along the lines of (51) below (illustrated with a PP, for the sentence “the book was given by John to Mary”):

- (51) a. [<sub>PartP</sub> DP [<sub>Part'</sub> Part [<sub>VP</sub> V PP]]]  
→ Merge X, Move PP  
b. [<sub>XP</sub> PP [<sub>X'</sub> X [<sub>PartP</sub> DP [<sub>Part'</sub> Part [<sub>VP</sub> V <PP>]]]]]  
→ Merge v, Merge external argument,  
Merge Voice,  
c. [<sub>VoiceP</sub> Voice [<sub>VP</sub> DP [<sub>v'</sub> v [<sub>XP</sub> PP [<sub>X'</sub> X [<sub>PartP</sub> DP [<sub>Part'</sub> Part [<sub>VP</sub> V <PP>]]]]]]]]]  
→ Move PartP to Spec VoiceP  
d. [<sub>VoiceP</sub> PartP [<sub>Voice'</sub> Voice [<sub>VP</sub> DP [<sub>v'</sub> v [<sub>XP</sub> PP [<sub>X'</sub> X <PartP> ]]]]]]

What is the identify of X in the above derivation? In Collins and Thrainsson (1996), a AgrP projection is postulated internal to the vP. In Collins (2003a) and Baker

and Collins (2004), a Lk projection is postulated internal to the vP. It is possible that XP in (51) is either AgrP or LkP.

An alternative analysis of the order of the by-phrase and the to-phrase in (49d) is that the to-phrase undergoes rightward movement extraposing it to a position higher than the by-phrase. This analysis is given below:

- (52) The book was [given <[to Mary]> by John] [to Mary]
- 

All the available data involving c-command argues against such a rightward extraposition analysis:

- (53) a. A gift was given by every student to his professor  
 b. Books were given by the students to each other  
 c. Books where given by each professor to the other  
 d. The book was given by no professor to any student  
 e. \*The book was given by him<sub>i</sub> to John<sub>i</sub>'s mother

Example (53a) shows that quantifier in external argument position can bind a following variable. Example, (53b) shows that an external argument can bind a reciprocal. (53c) shows that *each* in the external argument licenses a following the other. (53d) shows that a negative quantifier as the external argument licenses a following negative polarity item. The example in (53e) shows that a pronoun external argument cannot be coreferential with a following R-expression, which is predicted by Condition C under my analysis. In fact, for every possible test, the external argument c-commands what follows it (including PPs, IPs, and CPs) in the above structures.

The data involving the passives of verbs with an ECM (“John was believed by Mary to be telling the truth”) bears a striking resemblance to raising over an experiencer (“John seems to Mary to be nice”). In both cases, there is raising from an embedded clause, over an argument of the matrix clause in apparent violation of MLC/RM. In Collins (2003b), I argue that raising over an experiencer involves movement of the infinitival IP, followed by smuggling of the embedded subject over the experiencer.

## 7. Derived Constituent Structure

My analysis of the preposition *by* as the head of a functional projection VoiceP faces a serious problem: the sequence “by-DP” seems to be a constituent, and furthermore, it seems to be a PP. To resolve this problem, Chomsky 1957: 73 proposed a rule of derived constituent structure: If X is a Z in the phrase structure grammar, and a string Y formed by a transformation is of the same structural form as X, then Y is also a Z. Chomsky continued: “In particular, even when passives are deleted from the kernel we will want to say that the by-phrase (as in “the food was eaten – by the man”) is a prepositional phrase (PP) in the passive sentence.”

This solution violates a general economy condition that states that constituent structure that is already built cannot be changed at a later point in the derivation.

Therefore, I reject it. Consider some cases where the sequence “by DP” seems to be a PP. For example, the complement of a PP can not be moved by HNPS. The DP following by cannot be so moved either (thanks to Paul Postal for bringing this to my attention):

- (54) a. They fired missiles at the plane on Thursday.  
 b. \*They fired missiles at on Thursday - the plane.  
 c. They were attacked by the plane on Thursday.  
 d. \*They were attacked by on Thursday - the plane.

This data seems to show that the sequence “by DP” is a constituent, and that furthermore, it is a PP. But we see the same syntactic constraint with the complementizer *for*.

- (55) a. For John to leave would be unfortunate  
 b. \*For to leave John would be unfortunate

The DP in the sequence “for DP” cannot undergo HNPS. But the standard analysis of *for* is as a prepositional complementizer<sup>11</sup>, not as the head of a constituent of the form [<sub>PP</sub> P DP]. Therefore, the lack of HNPS in (54d) does not show that the sequence by-DP is a PP.

As another example, the sequence by-DP undergoes movement, just as a PP does. In particular, consider the following examples:

- (56) a. By whom was the car fixed?  
 b. The mechanic by whom the car was fixed

Consider the structure of (56a) before the sequence *by-whom* moves to Spec CP:

- (57) [<sub>VoiceP</sub> PartP [<sub>Voice'</sub> by [<sub>VP</sub> DP [<sub>v'</sub> v <PartP> ]]]]

How can the sequence *by-whom* undergo movement, stranding the participle in Spec VoiceP? It is normally assumed that intermediate categories cannot undergo movement (see Chomsky 1986). I reject this stipulation, but I will not consider the issue further for reasons of space. Assuming that the Voice' constituent by-DP can undergo movement, now the question is why can't such movement pied-pipe a PP which follows the external argument:

- (58) The paper was given by Mary to John

I claimed above that (58) is a case of remnant PartP [<sub>PartP</sub> given <PP>] movement to Spec VoiceP. Therefore, the VoiceP contains both the DP *Mary* and the PP [to John]. Fronting of the by-phrase should yield (59d):

<sup>11</sup> An important difference between *for* and *by* for which I have no explanation is that the DP following *for* cannot be extracted: \*Who would you prefer for to win?

- (59) a. The book was given to Mary by the editor  
 b. The book was given by the editor to Mary  
 c. By whom was the book given to Mary?  
 d. \*[VoiceP by whom to Mary ] was the book given?

This data strongly suggests that if VoiceP undergoes movement, everything except Spec vP must be evacuated. The relevant principle is the following (see Bo\_kovi\_2004 for empirical support in the domain of floated quantifiers):

- (60) F carries along just enough material for convergence  
 (Chomsky 1995: 262)

This principle states that in pied-piping the amount of material that is pied-piped is minimized, thus making the options for pied-piping extremely limited. Given the principle in (60), we need another principle to allow such cases as “In which house did you see a stranger?”. This new principle must be restricted to certain formal registers, since such sentences do not occur in colloquial English. I give this principle below:

- (61) Stylistic rule: If DP undergoes movement to Spec CP, it can optionally pied-pipe a preceding preposition (where the class of “preposition” includes both locative prepositions and uninterpretable prepositions such as *of* and *by*).

The principle in (61) is a stylistic principle of English, but also contains a minimizing component. Whenever a DP is attracted to Spec CP, and the DP is preceded by a preposition, then the sequence P-DP (but no other overt lexical items) can undergo movement to Spec CP.

In this light, consider (59c) again. Since *whom* is attracted to Spec CP, it can optionally pied-pipe the preceding *by* (by the stylistic rule). (59d) is unacceptable because it violates (60).

## 8. The Binding Theory in the Passive

In this section, I will explore how the theory I have developed in this paper, where the external argument is generated in Spec vP, and the PartP undergoes leftward movement, can handle binding facts in the passive.

### 8.1. Condition A

Consider first the following examples, showing that the external argument in the passive can bind a reflexive ((a) is due to Goodall 1997: 137, (b) is due to Roberts 1987: 101):

- (62) a. ??The magazines were sent to herself by Mary  
 b. ??Testimony was given about himself by the suspect  
 c. ??Books were sent to each other by the students  
 d. ??Money was hidden from himself by Bill  
 e. ??Chocolate eggs were hidden from each other by the children  
 f. ??Medals were given to themselves by the generals  
 g. ??Medals were given to each other by the generals  
 h. ??Tabs were kept on each other by the agents

In (62a), the PartP [PartP sent to herself] is initially c-commanded by the external argument *Mary*. I will assume that the binding theory requires that the reflexive be c-commanded at the LF interface by its antecedent. Therefore, assuming the copy theory of movement:

- (63) a. Spell-Out:  
           [VoiceP [PartP sent to herself ] by Mary < [PartP sent to herself ]> ]  
 b. LF-Interface (after deletion of highest copy):  
           [VoiceP \_\_\_ by Mary [PartP sent to herself ]

When the external argument binds the reflexive, there has been reconstruction of the moved PartP. The data involving reflexives and reciprocals in the passive is murky. There is lots of variation amongst people as to the acceptability of these judgements. I suggest that this fact indicates that reconstruction is difficult in the passive. I will return to this fact in section 8.2 below. When reconstruction is not necessary, the examples are perfect (see (51) for the derivation):

- (64) a. The magazines were sent by Mary to herself  
 b. Testimony was given by the suspect about himself

I believe that bound variable anaphora is also licensed in the passive:

- (65) ? Money was given to his mother by every boy

Why doesn't (65c) give rise to a weak crossover condition violation? Once the PartP is reconstructed, the quantifier bindings c-commands the pronoun, and hence there is no violation of WCO.

## 8.2. Condition C

Consider the following sentences:



- (66) a. The magazines were sent to Mary<sub>1</sub>'s mother by her<sub>1</sub>  
           (the idiot<sub>1</sub>, the idiot<sub>1</sub> herself) yesterday  
       b. Money was hidden from Bill<sub>1</sub>'s son by him<sub>1</sub>  
           (the bastard<sub>1</sub>, the bastard<sub>1</sub> himself) yesterday  
       c. Tabs were kept on Bill<sub>1</sub>'s workers by him<sub>1</sub>  
           (the idiot<sub>1</sub>, the idiot<sub>1</sub> himself) last year

None of these examples is very felicitous, but they do not seem totally unacceptable either. Using longer sentences (with an embedded clause) makes the result even better:

- (67) a. Sue was told that Mary liked Bill<sub>i</sub> by the bastard<sub>i</sub> himself  
       b. Sue was fooled into believing that Bill<sub>i</sub> was rich by the bastard<sub>i</sub> himself

These passives should be compared to the unacceptable active counterparts, which are ruled out by Condition C;

- (68) a. \*She<sub>1</sub> sent the magazines to Mary<sub>1</sub>'s mother  
       b. \*He<sub>1</sub> hid the money from Bill<sub>1</sub>'s son  
       c. \*He<sub>1</sub> kept tabs on Bill<sub>1</sub>'s workers  
       d. \*The bastard<sub>1</sub> (himself) told Sue that Mary liked Bill<sub>1</sub>  
       e. \*The bastard<sub>1</sub> (himself) fooled Sue into believe that Bill<sub>1</sub> was rich

Suppose that the passive involved PartP movement and obligatory reconstruction. Then there should be strong Condition C effect (see Fox 1999, 2003 on Condition C with reconstruction). Since there is no Condition C effect in the passive, then it must be the case that reconstruction is not obligatory. Given the Condition A facts and the bound variable anaphora facts, it must be the case that reconstruction is at least (marginally) possible.

Why is it the case that reconstruction is not obligatory (and furthermore, only marginally possible) with participle movement? Chomsky (1995: 326) suggested that reconstruction arises as a consequence of the formation of an operator-variable pair, which is a property of A'-movement. For Fox (1999) reconstruction in A'-movement is motivated by two factors: (a) an economy condition minimizing the restriction of a quantifier and (b) the reconstruction of a scope bearing element to the position of a copy (see also Heycock 1995). None of these conditions seems relevant to the movement of the PartP in the passive, which is not a quantificational expression<sup>12</sup>.

These considerations suggest that PartP does not undergo obligatory reconstruction in the passive because PartP is not a quantificational expression and PartP movement does not form an operator-variable pair. Nevertheless, I will assume that reconstruction is in principle possible because of the copy theory of movement, thus

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<sup>12</sup> The lack of Condition C effects in the passive also suggests that PartP not vP undergoes leftward movement. If vP underwent leftward movement, it would have to be obligatorily reconstructed according to the theory in Takano (1995), and Barss (2001).

accounting for the Condition A and bound variable anaphora facts. I will assume that it is a marginally available strategy in the sense that if it is employed the sentences are marginal.

### 8.3. Condition B

Now consider the following examples that show the effects of Condition B in passives:

- (69) a. \*the money was sent to him<sub>1</sub> by John<sub>1</sub>  
 b. ?(?)the money was sent to him<sub>1</sub> by John<sub>1</sub>'s mother

Coreference between the pronoun *him* and *John* is completely impossible in (69a). One possible account of this is that the pronoun *him* c-commands *John* in (69a) giving rise to a Condition C violation. The acceptability of (69b) argues against a Condition C account. Apparently, (69a) is unacceptable due to a Condition B violation.

Other examples illustrate Condition B in the passive:

- (70) a. \*The magazines were sent to her<sub>1</sub> by Mary<sub>1</sub>  
 b. \*Testimony was given about him<sub>1</sub> by the suspect<sub>1</sub>  
 c. \*Books were sent to them<sub>1</sub> by the students<sub>1</sub>  
 d. \*Money was hidden from him<sub>1</sub> by Bill<sub>1</sub>  
 e. \*Chocolate eggs were hidden from them<sub>1</sub> by the children<sub>1</sub>  
 f. \*Medals were given to them<sub>1</sub> by the generals<sub>1</sub>  
 g. \*Tabs were kept on them<sub>1</sub> by the agents<sub>1</sub>

Unlike Condition A in the passive, the Condition B facts are crystal clear. Binding in ECM constructions reinforces the conclusion that Condition B is at work in ruling out (69a) and (70). Consider the following example:

- (71) a. The books were believed to have been given to him<sub>1</sub> by John<sub>1</sub>  
 b. The books were believed by John<sub>1</sub> to have been given to him<sub>1</sub>

(71a,b) can have the interpretation that John believes that the books were given to him (that is, John), not that it is believed that John gave himself books. If *John* were the external argument of the embedded verb, the pronoun would not satisfy Condition B.

Under the PartP movement theory, in order for Condition B to rule out (70a), PartP would have to undergo obligatory reconstruction. The reconstructed representation of (70a) would be as follows:

- (72) a. Spell-Out:  
 The magazines were [PartP sent to her ] by Mary < [PartP sent to her ]>  
 b. LF-Interface:  
 The magazines were \_\_\_ by Mary<sub>1</sub> [PartP sent to her<sub>1</sub> ]

At the LF-interface, in the reconstructed position *Mary* would c-command *her*. We have already rejected obligatory reconstruction on the basis of fact that PartP is not a quantificational expression (see sections 8.1 and 8.2) (nor is PartP the operator of an operator-variable pair).

This pattern of data can be easily handled by Sabel's 1996 derivational treatment of Condition B, which I present in a modified version below:

- (73) Suppose that a pronoun P has its Case feature checked  
(it is the "head of an A-chain").  
Suppose Merge(DP, XP) where:
- a. XP dominates P
  - b. P is in the local domain of DP
  - c. DP and P are coindexed
- Then the derivation is cancelled.

To illustrate this principle, consider the following derivation:

- (74) \*The magazines were sent to her<sub>1</sub> by Mary<sub>1</sub>
- a. [PartP sent to her]
  - b. [<sub>VP</sub> Mary [<sub>PartP</sub> sent to her ]] \*Principle B
  - c. [<sub>VoiceP</sub> by [<sub>VP</sub> Mary [<sub>PartP</sub> sent to her]]]
  - d. [<sub>PartP</sub> sent to her ] [<sub>Voice'</sub> by [<sub>VP</sub> Mary <sent to her> ] ]

The larger question is now why Conditions A and C should be given representational treatments where the conditions apply at the LF-interface, but not Condition B. If the interpretation of coindexing is as bound variable anaphora (see Reinhart and Reuland 1993), then there will have to be reconstruction in case of Condition A (assuming that in bound variable anaphora, the antecedent must c-command the variable at LF). No such requirement exists for Condition B, since Condition B does not force coindexing. Therefore, there is nothing to prevent us from formulating Condition B as a derivational condition (as in (73)), applying at each step in the derivation. On the distinct status of Condition C, see Reinhart and Reuland 1993.

## 9. C-Command of by-Phrase

The analysis presented in the preceding sections makes the following prediction. If X is contained in the PartP, X should not c-command the by-phrase. Condition C effects seem to confirm this prediction:

- (75) a. The book was given to him<sub>1</sub> by John<sub>1</sub>'s mother  
b. \*The book was given by him<sub>1</sub> to John<sub>1</sub>'s mother
- (76) a. Testimony was given about him<sub>1</sub> by John<sub>1</sub>'s mother  
b. \*Testimony was given by him<sub>1</sub> about John<sub>1</sub>'s mother

- (77) a. Tabs were kept on him<sub>1</sub> by John<sub>1</sub>'s mother  
 b. \*Tabs were kept by him<sub>1</sub> on John<sub>1</sub>'s mother

In the (a) sentences, the pronoun does not c-command *John*, but in the (b) sentences it does (giving rise to a Condition C effect).

Extraction also suggests that an argument preceding the external argument can be located internal to PartP. Consider the following sentences:

- (78) a. Who were the books given to by the students  
 b. ?Who were the books given by the students to
- (79) a. Who where the chocolate eggs hidden from by the children  
 b. ?Who were the chocolate eggs hidden by the children from
- (80) a. Who were tabs kept on by the agents  
 b. ?Who were tabs kept by the agents on

The basic fact is that when a PP precedes the external argument in the passive, it is possible to extract a DP from it stranding the preposition. On the other hand, when the PP follows the external argument, such extraction is degraded. This suggests that a PP following the external argument has undergone movement (PP movement followed by vP movement), and gives rise to a Freezing effect (see Muller 1998)<sup>13</sup>. If this is so, then the PP preceding the external argument has not undergone such movement.

In light of this prediction, consider the following facts:

- (81) a. Books were given by the students to each other.  
 b. \*Books were given to the students by each other.
- (82) a. Chocolate eggs were hidden by the children from each other.  
 b. \*Chocolate eggs were hidden from the children by each other.
- (83) a. Tabs were kept by the agents on each other.  
 b. \*tabs were kept on the agents by each other.

There is a clear contrast between the (a) and (b) sentences, especially if the reciprocal is not stressed. There is also an effect due to the choice of the preposition: example (82b) may be worse than the others. Examples with reflexives are equally bad (\*"Tabs were kept on the agents by themselves"), if the reflexive is not stressed and the the adverbial interpretation of "by himself" and "by themselves" is excluded. These facts follow since a DP internal to PartP does not c-command the external argument.

<sup>13</sup> I do not know why certain movements (e.g., movement of DP to Spec IP in the passive, or movement of DP to Spec CP in wh-movement) give rise to freezing, but certain movements (e.g., movement of PartP to Spec VoiceP) do not. A PP that has been extracted from a PartP must count as a frozen structure.

Now consider the following data which suggests the opposite conclusion from that reached on the basis of (75-83):

- (84) a. Books were given to no student by any professor  
       b. Chocolate eggs were hidden from no child by any adult  
       c. Tabs were kept on no criminal by any agent
- (85) a. Books were given to each student by the other  
       b. Chocolate eggs were hidden from each child by the other  
       c. Tabs were kept on each agent by the other
- (86) a. Books were given to every student by his mother  
       b. Chocolate eggs were hidden from every child by his mother  
       c. Tabs were kept on every agent by his supervisor

The data in (84) shows that a negative quantifier can license a negative polarity item which is the external argument. (85) shows that *each* can license a following *the other*, and (86) shows that a QP headed by *every* can bind a pronominal variable contained in a following external argument. This data suggest that *no student* in (84a), *each student* in (85a) and *every student* in (86a) are not contained in PartP which has been fronted to Spec VoiceP. It may be that elements such quantificational expressions as *no student*, *each student* and *every student* actually undergo movement (perhaps overtly as argued for at length in Kayne 1998, see Bell 2004 on negation and negative quantifiers cross-linguistically). From this derived position, the quantifiers would bind the external argument. If the quantifier is prohibited from moving, it should not be able to license a following phrase. Indeed, examples with conjunction become much worse:

- (87) a. Books were taken from no student by any professor  
       b. Books were taken from no student and given to Mary  
       c. ??Books were taken from no student and given to Mary by any professor
- (88) a. Books were taken from each student by the other  
       b. Books were taken from each student and given to Mary  
       c. ??Books were taken from each student and given to Mary by the other

This facts follow if the quantifier is prohibited from raising out of the conjoined structure by the Coordinate Structure Constraint. The quantifier in the left conjunct will be prevented from moving (covertly, or overtly) to a position in the left periphery of the clause<sup>14</sup>.

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<sup>14</sup> The results of the c-command tests in the passive are similar to what is found with a possessor. In general a genitive possessor can bind a variable and license a negative polarity item outside of the DP that dominates it (“no student’s opinion is ever ignored”). On the other hand, a possessor cannot bind a reciprocal and does not give rise to Condition C-effects outside of the DP that dominates it (“his<sub>1</sub> mother loves John<sub>1</sub>”).

## 9. Conclusion

In conclusion, I have argued for an analysis of the passive with the following characteristic: The external argument is merged in the passive in *exactly* the same way as in the active (namely, Merge(DP, vP)). This property seems to me to translate into the minimalist program the central intuition of Chomsky's (1957) approach to the passive.

The analysis of the passive I have proposed is radically different from the standard Principles and Parameters analysis. Despite these differences, my analysis of the passive retains the most important feature of the Principles and Parameters analysis, namely the properties of the passive fall out from the interaction of invariant principles of UG and a few lexical parameters, restricted to properties of lexical items. The UG principles that I assumed were: the Minimalist theory of theta-role assignment (which subsumes the vP Internal Subject Hypothesis), the Binding Theory and other LF-interface conditions based on C-Command, locality theory (RM/MLC), the existence of remnant movement and smuggling, the distinction between interpretable and uninterpretable features (e.g., structural Case and certain adpositions), and the LCA. These principles are for the most part very different from those assumed in the Principles and Parameters analysis of the passive, which in part accounts for why my analysis is so radically different from the Principles and Parameters analysis.

What are the parameters in my analysis? They are all of the form X (X a functional head, perhaps composed uniquely of uninterpretable features) exists in L (an I-language). One such parameter is the existence of the past/passive participle functional head –EN, which I have argued to be composed of uninterpretable features. Another is the existence of the VoiceP. A natural hypothesis is the following (updating the approach to parametric variation of Chomsky/Fukui/Borer):

(89) all parametric variation is localized to variation in uninterpretable features

In an I-language without VoiceP (a projection composed purely of uninterpretable features), there would be no passive, and such I-languages do exist (e.g., Ewe, see also Keenan 1985: 247 for a list of languages with no passive).

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