

A SMUGGLING APPROACH TO THE PASSIVE IN ENGLISH

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Abstract. I propose a theory of the passive that combines aspects of the principles and parameters analysis (no specific rules, no downward movement) and Chomsky's (1957) *Syntactic Structures* analysis (the arguments in the passive are generated in the same positions as they are in the active).

1. Introduction

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 θ -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, θ -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 propose an analysis of the passive where the external argument in the passive (1b) occupies the 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.

2. 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; Afarli 1989, and many others).

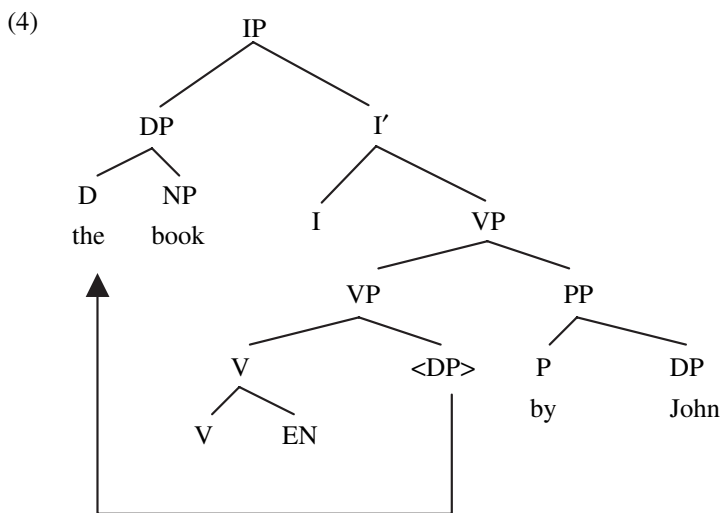
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- (2) a. The passive suffix *-en* absorbs accusative Case.
 b. The passive suffix *-en* absorbs the external θ -role.

In the standard treatment, these two properties are related by assuming that the passive suffix *-en* is itself an argument that is assigned Case and receives the external θ -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) θ -role. Because the DP [_{DP} 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 θ -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 reject both of the assumptions (2a) and (2b).



In the standard principles and parameters analysis, how does the postverbal DP get assigned a θ -role in the passive? Jaeggli (1986:599) points out that the preposition *by* does not on its own assign a θ -role (see also Lasnik 1988). Some examples that 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 θ -role of the postverbal DP is not agent but rather varies with the verb, which suggests that the preposition *by* does not assign a θ -role. Examples (5h,i) from Postal 2004 show that even idiomatic subjects can appear in *by*-phrases.

These examples¹ 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 (i.e., those yielding locative semantics, on which see Collins 2001a).

Based on facts like those in (5), Jaeggli (1986:590) explains θ -role assignment in the passive in the following way. First, the passive suffix *-en* absorbs the external θ -role of the verb. Second, the passive suffix assigns the PP headed by the preposition *by* the external θ -role (θ -role transmission). Third, the θ -role assigned to the PP percolates to the preposition *by*, and lastly *by* assigns the external θ -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 nonmovement chain, similar to clitic doubling (see also Lasnik 1988:10). In the remainder of the paper, I focus on Jaeggli's analysis, although both analyses suffer from similar problems (see also Baker 1988 and Fox & Grodzinsky 1998:323 for discussions of θ -transmission).

The main problem with Jaeggli's analysis is that the external argument in the passive is assigned a θ -role (via θ -role absorption and transmission) in a way that is totally different from how the external argument is assigned a θ -role in the active (in 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 a restrictive theory of θ -role assignment. All θ -role assignment is configurational, in the sense that each syntactic position (e.g., Spec,vP, complement V) is associated

¹ The idiomatic expression *the shit* (*is about to*) *hit the fan* lacks a passive (**the fan was [about to be] hit by the shit*). If *by* assigned a θ -role, this fact would be explained, given that an idiom chunk such as *the shit* cannot receive an independent θ -role. However, this argument is weakened by the fact that many idiomatic expressions where the subject is not an idiom chunk also do not passivize (**the bucket was kicked by John*).

with a particular θ -role (or set of θ -roles). From the point of view of the Minimalist Program, it is necessary that the θ -role of the external argument in the passive be assigned in exactly the same way as the external θ -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 S_1 is a grammatical sentence of the form
 $NP_1 - Aux - V - NP_2$
 Then the corresponding string of the form
 $NP_2 - Aux + be + en - V - by + NP_1$
 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 of downward movement and the passive, see Chomsky 1975:110).

I would like to propose an analysis that combines the best aspects of the *Syntactic Structures* and principles and parameters analyses. As a first step, I propose that the external argument is merged into the structure in the passive in the 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, Watanabe 1993:337, Mahajan 1994:297, which come to the same conclusion). This type of analysis of the passive is illustrated thus:

- (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. Given that *by* makes no semantic contribution, its presence must be forced by syntactic reasons. I return to this issue in detail in section 4, where I 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 θ -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 θ -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 θ -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, which 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, 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.²

3. 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 [_{PP} *by John*] is merged in Spec,vP, and if specifiers precede heads and complements in English (specifier-head-complement), we predict the word order in (9a):

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

² There might be some parametric variation in the position of PartP, as in the Slavic languages, where subject agreement is possible.

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, (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 [_{PP} *by John*].

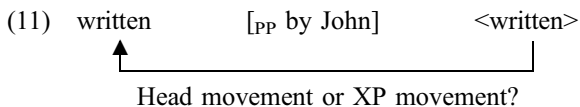
On the rightward specifier analysis, the structure of the passive would be: [_{VP} [_{V'} v PartP] [_{PP} by DP]]. The rightward specifier analysis violates the generalization in English that specifiers always precede heads (spec-head-comp1). Furthermore, the rightward specifier analysis makes the wrong predictions about standard Barss and Lasnik (1986) c-command tests.³

- (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 7, 9, and 10, I 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.



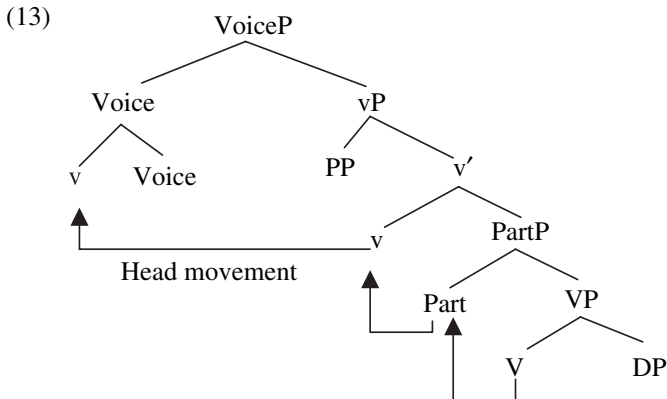
What is the landing site of the participle? Consider the following passive verbs from Kiswahili (see Hinnebusch & Mirza 1998:111):

³ I am assuming that X asymmetrically c-commands Y iff Y is contained in the sister of X. Barss and Lasnik (1986:352) suggest that their anaphora conditions (binding principles, scope conditions, etc.) be formulated in terms of the *domain* relation, defined as follows: "Y is in the domain of X iff X c-commands Y and X precedes Y." Given this definition, in (10a), *no professor* could c-command *any student*, without *any student* being in the domain of *no professor*. If this is the correct way to formulate the Barss and Lasnik tests, the empirical support for my theory of the passive is weakened (as a reviewer points out).

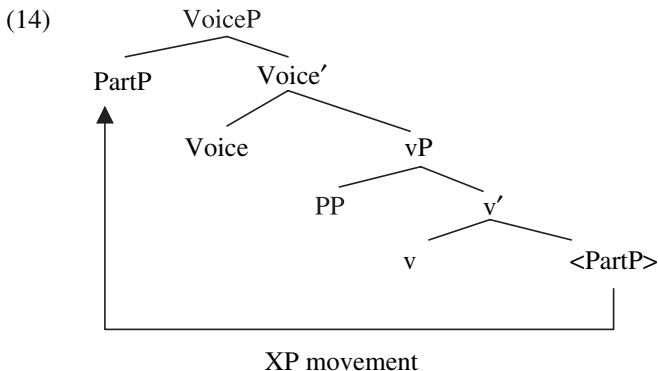
- (12) a. Mama yangu a-li-tengenez-a shati langu.
 mother my 1AGR-PAST-made-FV shirt my
 'My mother made my shirt.'
- b. Shati langu li-li-tengenz-w-a na mama yangu.
 shirt my 5AGR-PAST-made-PASS-FV by mother my
 'My shirt was made by my mother.'

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 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 nonfinite) form in the passive. I return to this fact about English in the discussion of (24) and (25), and I return to the analysis of Kiswahili in section 5.

Given the existence of VoiceP, the head-movement analysis of the passive is sketched in (13) (see Kural 1998 for a head-movement analysis).



In the XP-movement analysis, there is also a VoiceP, but this time the movement is into Spec,VoiceP. This analysis is illustrated in (14).



Note that both the head-movement and XP-movement analyses result in the verb preceding the external argument. I 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 adopt the analysis of particle constructions (see Collins & Thráinsson 1996), where the *Prt* occupies the complement position of VP:

- (17) [_{VP} Subj [_{V'} v [_{VP} Obj [_{V'} V *Prt*]]]]

Given this 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 *v* raises to Voice. However, I see no natural way of 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: [...*Prt* 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 postverbal PPs (e.g., **John teamed with Bill up*; see Kayne 1985:104). 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:

- (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 P 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.

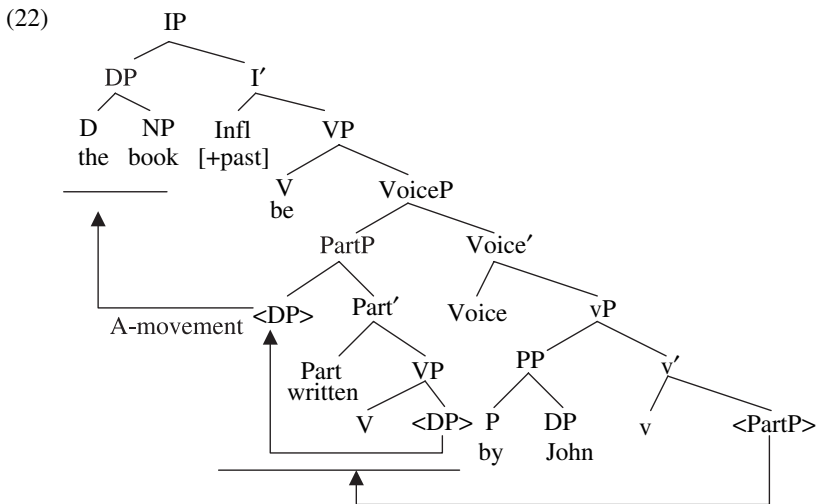
Postal (2004) and Baltin and Postal (1996) provide abundant evidence against reanalysis proposals. For example, Postal (2004) gives the following examples:

- (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. Baltin and Postal (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 return to this point in section 4.

Since the verb followed by the preposition does not form a single lexical item, pseudo-passives are evidence for a 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, stranding the preposition in its underlying position (complement of the verb), yielding the order [...V EA P...].

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: [_{VP} <DP> [_{v'} V Prt]]. In fact, there is crosslinguistic evidence that particles undergo movement to Spec,PredP (see Koster 1994, Kayne 1998:136). What is important on my analysis is that the particle does not move to a position outside of PartP, because, if it did, PartP movement to Spec,VoiceP would strand the particle in a position following the external argument (giving rise to the unacceptable sentences (15b) and (16b)).

Note that I am 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 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:

- (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:⁴

- (24) A participle (PartP) must be licensed by
- being c-selected by the auxiliary *have* or
 - moving to Spec,VoiceP.

⁴ 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 do not develop this idea here for reasons of space.

- (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., P, 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 (contra Jaeggli 1986 and Baker, Johnson & Roberts 1989), 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 include the feature [+past], because 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*⁵ 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).⁶

Now consider again the paradigm in (23). A partial syntactic structure of (23a) is given here:

- (26) [_{IP} John [_{I'} [_{Infl} has] [_{VP} <have> [_{vP} <John> [_{v'} v [_{PartP} seen DP]]]]]]]

In (23a), the auxiliary *have* has a vP complement.⁷ I assume that the auxiliary *have* raises to Infl and that the main verb *see* has raised to Part (the head of PartP; see (8)). Because VoiceP is not present, PartP has not moved to Spec,VoiceP in the active. Therefore, PartP is still dominated by vP. According to (25a), *have* c-selects a participle. I assume that the c-selection relation between *have* and the participle can be satisfied in this structure. Therefore, both (24a) and (25a) are satisfied.

In (23b), 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 & Szabolsci 2000:49 for a similar principle concerning infinitives in Hungarian).

⁵ More precisely, the auxiliary *have* has an uninterpretable [uV] categorial feature. Once the relation Agree(*have*, participle) is formed, the uninterpretable feature of the participial *-en* affix is deleted as a reflex.

⁶ 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*). I would assume *get*-passives involve a VoiceP, but I have not worked out the details.

⁷ The auxiliary *have* is not dominated by vP. For example, I am assuming that in deletion structures like *I would have*, the vP complement of *have* is deleted.

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

Because *be* takes a wide range of complements, we might 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 contrasts:

- (27) 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 (27a), Voice requires a participle, and the participle needs to be licensed, which it is. In (27b), the participle needs to be licensed, but there is neither a Voice head nor the auxiliary *have*.

A reviewer points out that there is a similar contrast with absolute constructions, which must be interpreted passively:

- (28) a. Written in only three days, this book sold millions of copies.
 b. *Written her dissertation in only three days, Sue took a break.
 c. Having written her dissertation in three days, Sue took a break.

The participle in (28a) is passive. For example, it admits a *by*-phrase (*written in only three days by a group of children*). Therefore, I assume that there is a VoiceP present and that PartP moves to Spec,VoiceP, satisfying (24b) and (25b). In (28b), there is neither a Voice head nor an auxiliary *have*, so the sentence is ruled out by (24).

4. *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. Recall that UTAH (Baker 1988:46) states the following: Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure. In both

the passive and the active, *v* is the θ -role assigner. In both the passive and the active, the DP is interpreted as the external argument. In other words, the DP bears the same thematic relationship to *v* in both the passive and the active. Therefore, the structural relationship between *v* and DP must be the same in both the passive and the active. Since DP is in Spec,vP in the active, it must also be in Spec,vP in the passive. If DP were dominated by a PP (a *by*-phrase), which occupied Spec,vP, then the structural relationship between *v* and DP (which bears a thematic relationship to the *v*) would be different in the passive and the active. Note that I am not claiming that only DPs can occupy Spec,vP.

Furthermore, the account I presented (see (22)) 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?

- (29) *John was written by the book.
 'The book was written by John.'

Instead of the direct object DP [_{DP} 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*, [_{DP} the book]), and Merge(*write*, PP) yielding (29).

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: [_{vP} [_{PP} *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 *v*, and *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, given that *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 (29) 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* would not

subcategorize for a *by*-phrase, but in a passive clause it would. Therefore, *v* would have the optional subcategorization frame [$_\text{byP}$].

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 discussion⁸) can be passivized and have a *by*-phrase. I am assuming that a lexical entry consists solely of unpredictable 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 [$_\text{byP}$] as part of the lexical entry of *v*.

Given that the subcategorization frame [$_\text{byP}$] is not present in the lexical entry of *v*, one approach would be to claim that the subcategorization frame [$_\text{byP}$] is an optional feature added when the numeration is formed (e.g., when *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.⁹ On the other hand, if *vP* appears, there is no guarantee that there will be a dummy *by* in the structure (e.g., in active clauses there is no *by*). This asymmetry in selection suggests that *by* subcategorizes for a *vP*, and not the other way around. In other words, the preposition *by* must be listed with the subcategorization frame [$_\text{vP}$].

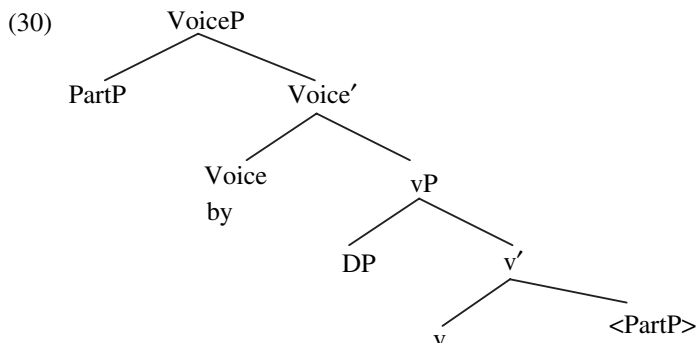
Lastly, I have given no account of how accusative Case is "absorbed in the passive." Crucially, I am assuming that the passive suffix is not an argument, so there is no reason that the passive suffix needs to be assigned Case. Furthermore, I am assuming that the passive and past participles are identical, so I need to explain how they appear to differ in terms of Case checking.

I have listed three problems with an approach where the *by*-phrase PP is generated in Spec,*vP*: the strict UTAH problem, the syntactic distribution problem, and the Case-absorption problem. I propose to solve all of these problems by postulating that the preposition *by* does not form a constituent

⁸ Postal (2001) claims that there are three different types of object relation in English (2 = direct object, 3 = indirect object, and 4 = subobject). 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.

⁹ I put aside the use of *by* in nominals, like *a book by Chomsky*, where the interpretation suggests that there is an implicit (phonetically empty) verb meaning *produce* and that *Chomsky* is the external argument of that verb. The following example provided by a reviewer presumably has a similar analysis: *the argument by the author to eliminate θ -role absorption*. For nominals denoting events such as *destruction of the city by the Romans*, it seems plausible 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.

with the following DP at all. In other words, there is no PP of the form $[_{PP} \textit{by DP}]$. Rather, *by* is the head of VoiceP, as in the following structure (of the sentence *The book was written by John*):



An immediate objection to this analysis is that it postulates a functional head consisting entirely of uninterpretable features (see Chomsky 1995:349 for arguments against Agr). However, Collins 2003a, 2005b, and Baker and Collins 2003 discuss the syntax of linkers in great detail, showing that they are precisely functional heads composed purely of uninterpretable features. Similarly, even in the standard theory of the passive, it must be admitted that the preposition *by* in the structure $[_{PP} \textit{by DP}]$ does not have interpretable features (see (5)).

Consider now the issues raised above. Consider first (29) (**John was written by the book*). It is impossible for the structure of this sentence to be $[_{VP} \textit{written} [_{PP} \textit{by} [_{DP} \textit{the book}]]]$, since Voice *by* must occur external to vP, and hence cannot appear within VP.¹⁰

Now consider again examples like: *the leg of (*by) the table*, *student of (*by) physics*, *proud of (*by) his son*, and *for (*by) John to be happy*. Since Voice *by* can only occur with a vP complement, these examples are impossible.

Lastly, how does Case checking work in the passive? In the structure in (30), I assume that Voice *by* checks the accusative Case of the DP in Spec,vP, in a way that is very similar to how the prepositional complementizer *for* checks the case of a DP in Spec,IP in phrases like $[_{CP} \textit{For John to win would be nice}]$. I return to this analogy between *by* and a prepositional complementizer in section 6.

¹⁰ Given (22), suppose that $[_{\text{PartP}} \textit{written} [_{PP} \textit{by} [_{DP} \textit{the book}]]]$ were generated, and then PartP moved to Spec,VoiceP. Assuming that the external argument DP in Spec,vP is blocked from moving to Spec,IP (for reasons not completely clear), then Spec,IP would remain unfilled, and the external argument would not have its Case feature checked. Therefore, it may be possible to account for (29) without postulating that *by* is the head of VoiceP. This approach would still need to deal with the strict UTAH problem, the rest of the syntactic distribution problem, and the Case-absorption problem. It would also miss the parallelism between *by* and the complementizer *for*, and it would not extend to linkers (see Collins 2003a, 2005b).

The question is why the passive participle does not check accusative Case but the past participle does. In other words, what accounts for the impression that Case is absorbed in the passive? In minimalist syntax, accusative Case is checked by *v* (see Chomsky 1995, Collins 1997), which also assigns the external θ -role. These two features (Case checking and external θ -role) are distinct, so it is natural to ask whether they can ever be dissociated. I suggest that it is precisely in the passive that the two features come apart and are projected on two different heads:

- (31) a. active: *v* assigns external θ -role
 v checks accusative Case
 b. passive: *v* assigns external θ -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.¹¹ To be more precise, I adopt the following condition:

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

Recall that Baltin and Postal (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 *speak*, 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 & Roberts 1989:229):

- (33) 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, and Roberts (1989:230), the problem with (33b,c) is that the passive suffix is external to the VP (generated in Infl), so it must receive the external θ -role, but *seem* does not have an external θ -role to assign to the passive suffix.

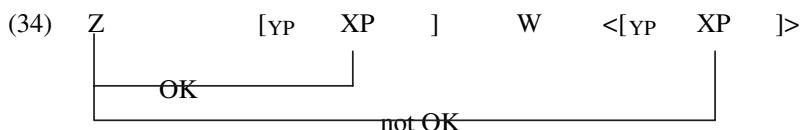
¹¹ My position is similar to that of Hoekstra (1996:43), who postulates that “Accusative is the result of the incorporation of an oblique feature.” Also relevant here is Koizumi 1995, where the head that checks Case (Agr_o) and the head that assigns the external θ -role are always dissociated.

In my approach, the passive suffix does not receive a θ -role, so Baker, Johnson, and Roberts's (1989) approach is unavailable to me. First, I assume that the examples in (33b,c) involve a VoiceP. Otherwise, they are ruled out because the participle is not licensed. One way to form (33b,c) 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).¹²

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 directly to 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: [_{PP} *in* DP] (on locative prepositions see Reinhart & 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, 2003a).

5. 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). 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.¹³

It is important to note that smuggling derivations assume that Freezing (Müller 1998:124) does not hold for all types of movement, where Freezing is

¹² I assume that the VP headed by *seem* is dominated by vP, as for unaccusatives. See Collins 1997 for the claim that unaccusatives involve a vP.

¹³ 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 example of a smuggling derivation.

defined as follows (see also Takahashi 1995 and Koopman & Szabolcsi 2000:38).

- (35) *X [_Y ... <X>...] <Y>

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

- (36) *The book was by John written.

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 2003). For example, because 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 3 (see (13)). 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 entail that passive *v* is a *v** (a strong phase head), given that 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 that 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 externally 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 (i.e., 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.

In this paper, I have restricted the discussion to English. I will now briefly consider the crosslinguistic implications of my analysis for the passives found in Kiswahili and Japanese.

Consider a language with a morphological passive, where the passive is not formed with a participle but rather with a verbal passive suffix. For example, in Kiswahili the passive suffix is *-w*, which is added to the verb (see also (12)), as in the examples provided to me by Aggrey Wasike:

- (37) a. Juma a-li-andik-a ki-tabu.
 Juma 1AGR-PAST-write-FV book
 ‘Juma wrote the book.’
 b. Kitabu ki-li-andik-w-a *(na) Juma.
 book 7AGR-PAST-write-PASS-FV na Juma
 ‘The book was written by Juma.’

I assume that the passive suffix is the realization of Voice, heading a VoiceP and taking a vP complement. Note that I do not assume that the passive suffix in Kiswahili corresponds to the participle suffix in English. The main reason is that the participle in English is not specific to the passive (see section 2). A standard view of derivational morphology (such as the passive suffix) is that the verb combines with the suffix by verb movement (see Baker 1988). Putting these assumptions together, we have the following (abbreviated) derivation:

- (38) a. [_{VP} DP₁ [_V v [_{VP} V DP₂]]] → Merge Voice, Move v, V
 b. [_{VoiceP} Voice [_{VP} DP₁ [_V <v> [_{VP} <V> DP₂]]]]
 → Merge Infl, Move DP₂ to Spec,IP
 c. [IP DP₂ [_{I'} Infl [_{VoiceP} Voice [_{VP} DP₁ [_V <v> [_{VP} <V> <DP₂>]]]]]

In this derivation, the verb raises to *v*, which in turn raises to Voice (forming the head adjunction structure [_{Voice} v Voice]).¹⁴ Such a structure should be disallowed, since movement of DP₂ to Spec,IP will be blocked by the external argument in Spec,vP. The problem is that verb movement to Voice does not allow for smuggling to take place.

The failure of derivation (38) for morphological passives shows that some additional head must be introduced to allow the VP to smuggle the DP₂ past the external argument. I propose that this function is accomplished by *na* (see (37b)).

Recall that I used this Kiswahili example to motivate the existence of a Voice head (the passive suffix *-w*) in UG (see (12)). Given my analysis of English, Kiswahili poses the following problem. Should the *na* obligatorily

¹⁴ This head movement of V to Voice might account for the lack of a participle in the Kiswahili passive. Suppose that universally a Voice head must attract V: either V is embedded in PartP (to satisfy (25b)) or Voice is an affix to which V adjoins. The two mechanisms might be in competition: if one is used, the other is not necessary.

preceding the external argument in Kiswahili be analyzed in the same way as the *by* preceding the external argument in English? If Kiswahili *na* were to be analyzed as the head of VoiceP, there would be two VoicePs (one for the passive suffix *-w* and one for *na*), which is presumably not allowed by UG. Another reason to think that *na* is not the head of VoiceP is that it seems to have a very different syntactic distribution in Kiswahili than *by* in English. Consider the following examples (Aggrey Wasike, p.c.):

- (39) a. Ni-li-sem-a na Juma. (with)
 1SG-PAST-speak-FV with Juma
 'I spoke with Juma.'
- b. Ku-na mtu hapa. (existential)
 17AGR-with person here¹⁵
 'There is a person here.'
- c. Yohana na Maria wa-na-pend-an-a. (conjunction)
 John and Mary 2AGR-PRES-love-REC-FV
 'John and Mary love each other.'
- d. Yohana a-na-pend-an-a na Maria (reciprocal)
 John 1AGR-PRES-love-REC-FV with Mary
 'John and Mary love each other.'

The identity of *by* and *with* holds in many other Bantu languages—for example, Chichewa, Lubukusu (Aggrey Wasike, p.c.), Kisukuma (Herman Batibo, p.c.), but not Setswana. If the different uses of *na* are to be given a unified treatment, then obviously *na* cannot be identified with the syntactic category of *by* in English, which is restricted to occurring in passives.

Many descriptive questions needed to be addressed before I could even start to give an adequate analysis of the Kiswahili passive, including the following: Can *na* be used with a wide range of external arguments, as *by* in English (see (5))? Does the Kiswahili passive even involve A-movement? Without further information, I reluctantly leave Kiswahili passives for further research.

Consider now what the implications of my analysis of the passive are for SOV languages. In an SOV language, the passive usually has following form (POST is postposition, and PASS is a passive suffix):

- (40) a. DP₁ DP₂ V
 b. DP₂ DP₁-POST V-PASS

If we make the assumption that movement is to the left (see Kayne 1994), then it cannot be the case that VP movement smuggled DP₂ over DP₁ since such a derivation would place the verb to the left of the external argument (as in English). Now consider the particular example of a direct passive from Japanese (from Kitagawa & Kuroda 1992:33):

¹⁵ See Collins 2004 on *na* in existential constructions in Kiswahili.

- (41) Yuube, kuruma ga (doroboo ni) ni-dai nusum-are-ta.
 last-night car NOM thief by two-vehicles steal-PASS-PAST
 'Last night, two cars were stolen by thieves.'

The problem is that the subject DP *kuruma* must raise over the external argument. But since the verb *steal* does not precede the external argument, it is not possible for smuggling to play a role. There are at least three solutions to the locality problem posed by the passive in Japanese (and SOV languages more generally). First, the passive in Japanese might not involve movement at all. In fact, Kitagawa and Kuroda (1992:5) propose that in Japanese the "direct passive does not involve movement; instead, it contains an empty pronominal base-generated inside the complement VP and bound by the matrix subject."¹⁶ Second, it might be that the passive in an SOV language involves A'-movement (e.g., A'-scrambling) instead of A-movement. Third, it might be that the external argument in (40b) is not in Spec,vP but is rather an adjunct. I have not tried to distinguish these three solutions for Japanese.

Another issue that comes up in analyzing SOV languages is the fact that the external argument in the passive is followed by a postposition. Is it possible to analyze *ni* in the Japanese example (41) as a Voice head? Analyzing *ni* as the head of Voice poses the same problem as analyzing *na* as the head of Voice in Kiswahili. First, there would be two Voice heads. Second, *ni* does not seem to have a distribution restricted to the passive (rather it is used in the causative and for datives, as well). Therefore, I would not analyze *ni* as a Voice head in Japanese, but I would assume that it should receive the same analysis as the other Case markers (e.g., nominative *ga*) in Japanese.

6. 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 are data showing that even though the external argument in short passives is not phonetically overt, it is syntactically present:

- (42) 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)
- (43) 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)

¹⁶ A major problem with the nonmovement approach is that it seems to be possible for object idiom chunks to undergo movement in the Japanese passive; see Watanabe 1996 (p. 160, fn. 77). Thanks to Ken Hiraiwa and Yoshi Dobashi for discussing the passive in Japanese with me.

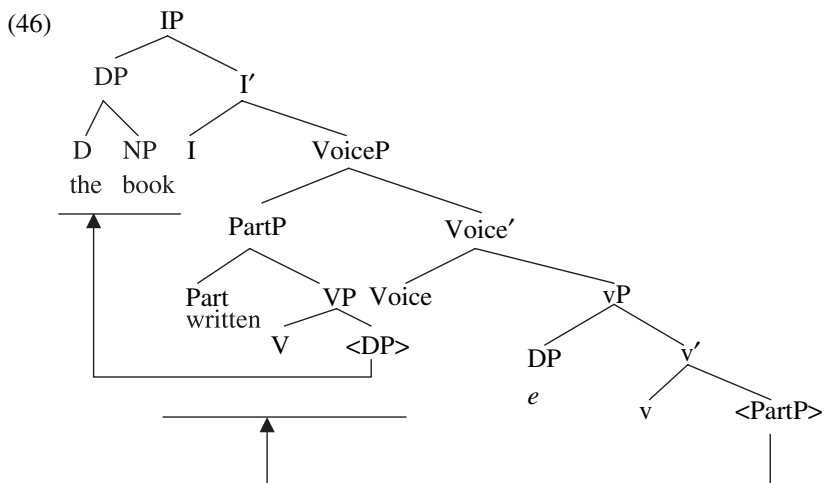
- (44) a. Breakfast is eaten nude by the campers.
 b. Breakfast is eaten by the campers nude.

These examples show that the external argument in a passive without a *by*-phrase is structurally present. The examples in (42) show an implicit argument can bind a reflexive. The examples in (43) show that an implicit argument can license a depictive secondary predicate.¹⁷ In this way, an implicit argument is exactly like an overt external argument, as shown by (44).

Because the implicit argument is structurally present, the question is whether it precedes or follows the PartP. In other words, should we give short passives the representation in (a) or (b) (*e* = empty category)?

- (45) a. The book was written *e*.
 b. The book was *e* written.

In (45a), *e* is in Spec,vP, and PartP smuggles the DP [*the book*] over the *e*. In (45b), *e* is also in Spec,vP, but no smuggling takes place. The locality considerations discussed in section 5 suggest that the correct representation is the one given in (45a). If there were no smuggling, then *The book was written* should be as bad as **The book was by John written*, but it is completely acceptable. I will henceforth assume that short passives involve PartP movement to Spec,VoiceP, as illustrated here:



¹⁷ Contrary to Jaeggli (1986:614), Landau (2000:170, fn. 10), Roberts (1987:70, sect. 3.2.2), and Watanabe (1993:334, fn. 56). See Landau 2000 for a review of the literature on implicit arguments and control.

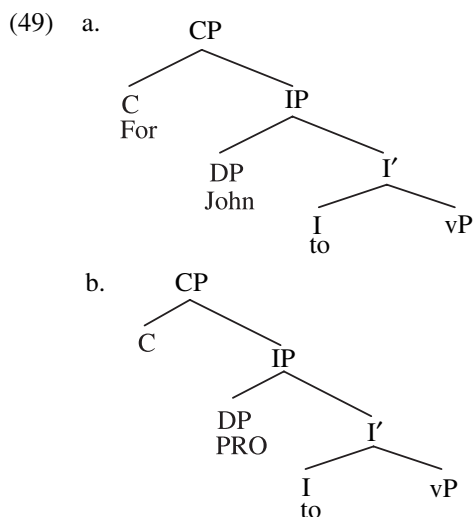
In summary, Voice can be spelled out in the following ways:

- (47) a. Voice = *by* (with overt DP)
 b. Voice = \emptyset (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.

- (48) 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 (48a,b) have a filled Spec,IP but that the element filling Spec,IP is overt only in (48a). The two structures are given here:



A natural question is whether the empty category 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 Chomsky 1995:chap. 1) suggest that PRO bears null Case, which is checked by *to* (see Bošković 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, given that no Case is checked by that embedded Infl.

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 control *to* and raising *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 (48), where the PRO variant and the lexical-subject variant each have the same *to*. Assuming that only PRO bears null Case, the examples in (48) raise the following question: If *to* checks null Case in [PRO *to win*], then why doesn't the Infl *to* check null Case in [*for John to win*]?

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 latter. 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 (48b) 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 in (48b) 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 *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, whereas the latter takes an IP complement. Second, the latter does not trigger XP (PartP) movement to its specifier.

7. Remnant Movement and Stranding

Recall from section 3 that particles and stranded prepositions (in pseudo-passives) cannot occur following the external argument in a passive:

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

- (51) a. John was spoken to by Mary.
b. *John was spoke by Mary to.

As discussed in section 3, the data in (50) and (51) 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. Consider resultative secondary predicates:

- (52) 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 (52) are much more acceptable when they precede the external argument than when they follow the external argument, which suggests that these resultative AdjPs do not undergo movement out of the PartP but rather must be pied-piped with the PartP just like particles.¹⁸

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

- (53) 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):

- (54) a. [_{PartP} Mary [_{Part'} Part [_{ApplP} <Mary> [_{Appl'} Appl [_{VP} V [_{DP} the book]]]]]]]
b. [_{XP} [_{DP} the book] [_{X'} X [_{PartP} Mary [_{Part'} Part [_{ApplP} <Mary> [_{Appl'} Appl [_{VP} V <DP>]]]]]]]]]

The data suggest that the licensing position for [_{DP} the book] is dominated by ApplP, and that movement to a position outside of PartP is impossible.

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

¹⁸ On Koster's (1994) analysis, Dutch resultative secondary predicates pattern like particles in moving to Spec,PredP.

- (55) 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.
- (56) 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.
- (57) It was believed by the students that they would have an exam.

I analyze the IP, PP, and CP data in (55)–(57) in terms of remnant PartP movement along the lines of (58) (illustrated with a PP, for the sentence *The book was given by John to Mary*).¹⁹

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

What is the identify of X in this derivation? In Collins and Thráinsson 1996, a AgrP projection is postulated internal to the vP. In Collins 2003a and Baker and Collins 2003, a Lk projection is postulated internal to the vP. It is possible that XP in (58) is either AgrP or LkP.

An alternative analysis of the order of the *by*-phrase and the *to*-phrase in (56d) is that the *to*-phrase undergoes rightward movement extraposing it to a position higher than the *by*-phrase:

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



¹⁹ A reviewer suggests the following alternative: IP/PP/CP extraposes and right-adjoins to PartP. Subsequently, the lower segment of the PartP raises into Spec,VoiceP (stranding IP/PP/CP). This extraposition analysis avoids having to postulate an extra XP dominated by vP but dominating PartP. On this analysis, the external argument, in Spec,vP, would c-command the IP/PP/CP adjoined to PartP, thus accounting for the data in (60). As far as I can see, this alternative accounts for the relevant data, but the use of extraposition will probably require formulating the Barss and Lasnik (1986) c-command tests in terms of *domain* (see fn. 3 for discussion).

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

- (60) a. A gift was given by every student to his professor.
b. Books were given by the students to each other.
c. Books were given by each professor to the other.
d. The book was given by no professor to any student.
e. *The book was given by him₁ to John₁'s mother.

Example (60a) shows that quantifier in the external argument position can bind a following variable. Example (60b) shows that an external argument can bind a reciprocal. (60c) shows that *each* in the external argument licenses a following *the other*. (60d) shows that a negative quantifier as the external argument licenses a following negative polarity item. The example in (60e) shows that a pronoun external argument cannot be coreferential with a following R-expression, which is predicted by principle 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 ECM (*John was believed by Mary to be telling the truth*) bear 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 the Minimal Link Condition or Relativized Minimality. In Collins 2003b, 2005a, I argue that raising over an experiencer involves movement of the infinitival IP, followed by smuggling of the embedded subject over the experiencer.

8. 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 a similar 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 cannot be moved by heavy NP shift. The DP following *by* cannot be so moved, either (thanks to Paul Postal for bringing this to my attention):

- (61) 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.

These data seem 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*.

- (62) 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 heavy NP shift. But the standard analysis of *for* is as a prepositional complementizer, not as the head of a constituent of the form [_{PP} P DP].²⁰ Therefore, the lack of heavy NP shift in (61d) does not show that the sequence “*by* DP” is a PP.

Consider now the fact that two “*by* DP” sequences can be conjoined, which suggests that the sequence “*by* DP” is a constituent (a point emphasized by a reviewer):

- (63) a. The book was written by John and by Bill.
 b. The book was written [_{ConjP} [_{PP} by John] and [_{PP} by Bill]].

Since on my theory, there is no constituent [_{PP} *by John*], there can be no coordinate structure such as the one in (63b). Rather, the underlying structure must be one where two VoiceP projections are conjoined:

- (64) a. The book was written by John and written by Bill.
 b. The book was [_{VoiceP} written by John] and [_{VoiceP} ____ by Bill].

In (64a), in both the first and the second conjunct, PartP moves to Spec,VoiceP. Then the DP [*the book*] undergoes ATB movement to Spec,IP. I claim that the apparent PP conjunction seen in (63a) is the result of deletion of the second PartP, as shown in (64b).²¹ There is some evidence for this deletion analysis. First, as pointed out to me by Richard Kayne, (63a) is slightly

²⁰ 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?* (cf. *Who was the book written by?*).

²¹ A reviewer points out the following contrast:

- (i) The shed was built by my friends and by me.
 (ii) I built the shed with my friends and for my mother.

The reviewer claims that coordination of unlike PPs in (ii) requires the type of prosody “we expect to see in cases of VP ellipsis.” On the other hand, for (i) there is no ellipsis prosody. The facts are not that clear to me. Example (i) seems more like (ii) prosodically than *I saw John and Bill*, for example. The question calls for instrumental investigation that I have not yet done.

bizarre, as compared to *the books were written by John and by Bill*. If co-authorship is intended, then the sentence would need to be *the book was written by John and Bill*. This fact would make sense if (63a) involved coordinated VoicePs and deletion.

Second, consider the following examples that require deletion:

- (65) a. Books were written slowly by John and quickly by Mary.
b. Books were written by John to Mary and by Bill to Sue.

Example (65a) shows that there needs to be a deleted verb for the adverb to modify, whereas (65b) shows that there needs to be a deleted verb in the second conjunct to assign a θ -role to the PP [_{PP} to Sue]. Given the possibility of deletion in (65a,b), it must be admitted that deletion is a possibility in (63a), which would be consistent with my theory of the passive.²²

Another argument that the sequence “*by DP*” forms a constituent is that it undergoes movement, just as a PP does.²³ In particular, consider the following examples:

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

Consider the structure of (66a) before the sequence “*by whom*” moves to Spec,CP:

- (67) [_{VoiceP} PartP [_{Voice'} by [_{VP} DP [_{V'} 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

²² Deletion might be at play in the following sentence (based on a sentence provided by a reviewer):

(i) How is language used by, to, and about women?

As a reviewer points out, in this example, Voice seems to have been coordinated with prepositions. Another possibility worth exploring is that (i) is derived from (ii) by right node raising (of *women*) followed by deletion (of *used* in the last two conjuncts):

(ii) How is language used by women, used to women, and used about women?

²³ A reviewer points out the following contrast:

(i) *It was by my friends that the shed was built.
(ii) It was for my friends that the shed was built.

Movement of the *by*-phrase does seem in general more degraded than moving other PPs. It is unclear how general this difference is, and whether or not it supports my general theory. On the other hand, *na*-phrases in Kiswahili cannot be clefted at all, a fact resembling (i) (Aggrey Wasike, p.c.)

Voice' constituent *by*-DP can undergo movement, now the question is why can't such movement pied-pipe a PP that follows the external argument:

(68) The paper was given by Mary to John.

I claimed earlier that (68) is a case of remnant PartP [_{PartP} given <PP>] movement to Spec,VoiceP (see (58)). Therefore, the vP contains both the DP *Mary* and the PP [*to John*]. Fronting of the *by*-phrase should yield (69d).

- (69) 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?

These data strongly suggest that if VoiceP undergoes movement, everything except Spec,vP must be evacuated. The relevant principle is the following (see Bošković 2004 for empirical support in the domain of floated quantifiers):

(70) 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 (70), 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, given that such sentences do not occur in colloquial English:

(71) 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 (71) 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 (69c) again. Since *whom* is attracted to Spec,CP, it can optionally pied-pipe the preceding *by* (by the stylistic rule). (69d) is unacceptable because it violates (70).

9. The Binding Theory in the Passive

In this section, I explore the 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.

9.1 Principle A

Consider first the following examples, showing that the external argument in the passive can bind a reflexive ((72a) is due to Goodall [1997:137], (72b) is due to Roberts [1987:101]).

- (72) 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 (72a), the PartP [_{PartP} sent to herself] is initially c-commanded by the external argument *Mary*. I 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:

- (73) 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 are murky. There is a lot of variation among people as to the acceptability of the judgments in (72). I suggest that this fact indicates that reconstruction is difficult in the passive. I return to this fact in section 9.2. When reconstruction is not necessary, the examples are perfect (see (58) for the derivation):

- (74) 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:

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

Why doesn't (75) give rise to a strong Weak Crossover Condition violation? Once the PartP is reconstructed, the quantifier bindings c-commands the pronoun, and hence there is no violation of Weak Crossover.

9.2 *Principle C*

Consider the following sentences:

- (76) a. The magazines were sent to Mary₁'s mother by her₁ (the idiot₁, the idiot₁ herself) yesterday.
 b. Money was hidden from Bill₁'s son by him₁ (the bastard₁, the bastard₁ himself) yesterday.
 c. Tabs were kept on Bill₁'s workers by him₁ (the idiot₁, the idiot₁ 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:

- (77) a. Sue was told that Mary liked Bill₁ by the bastard₁ himself.
 b. Sue was fooled into believing that Bill₁ was rich by the bastard₁ himself.

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

- (78) a. *She₁ sent the magazines to Mary₁'s mother.
 b. *He₁ hid the money from Bill₁'s son.
 c. *He₁ kept tabs on Bill₁'s workers.
 d. *The bastard₁ (himself) told Sue that Mary liked Bill₁.
 e. *The bastard₁ (himself) fooled Sue into believe that Bill₁ was rich.

Suppose that the passive involved PartP movement and obligatory reconstruction. Then there should be strong principle C effect (see Fox 1999, 2003 on principle C with reconstruction). Since there is no principle C effect in the passive, then it must be the case that reconstruction is not obligatory. Given the principle 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 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.²⁴

²⁴ 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 2003.

These considerations suggest that PartP does not undergo obligatory reconstruction in the passive because PartP is not a quantificational expression. Nevertheless, I will assume that reconstruction is in principle possible because of the copy theory of movement, thus accounting for the principle 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.

9.3 Principle B

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

- (79) a. *The money was sent to him₁ by John₁.
b. ?(?)The money was sent to him₁ by John₁'s mother.

Coreference between the pronoun *him* and *John* is completely impossible in (79a). One possible account of this is that the pronoun *him* c-commands *John* in (79a), giving rise to a principle C violation. The acceptability of (79b) argues against a principle C account. Apparently, (79a) is unacceptable due to a principle B violation.

Other examples illustrate principle B in the passive:

- (80) a. *The magazines were sent to her₁ by Mary₁.
b. *Testimony was given about him₁ by the suspect₁.
c. *Books were sent to them₁ by the students₁.
d. *Money was hidden from him₁ by Bill₁.
e. *Chocolate eggs were hidden from them₁ by the children₁.
f. *Medals were given to them₁ by the generals₁.
g. *Tabs were kept on them₁ by the agents₁.

Unlike principle A in the passive, the principle B facts are crystal clear. Binding in ECM constructions reinforces the conclusion that principle B is at work in ruling out (79a) and (80). Consider the following examples:

- (81) a. The books were believed to have been given to him₁ by John₁.
b. The books were believed by John₁ to have been given to him₁.

The sentences in (81a,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 principle B.

Under the PartP-movement theory, for principle B to rule out (80a), PartP would have to undergo obligatory reconstruction. The reconstructed representation of (80a) would be as follows:

- (82) a. Spell-Out:
 The magazines were [_{PartP} sent to her] by Mary < [_{PartP} sent to her]>
 b. LF-Interface:
 The magazines were ___ by Mary₁ [_{PartP} sent to her₁]

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 9.1 and 9.2) (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 principle B, which I present in a modified version:

- (83) 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:

- (84) *The magazines were sent to her₁ by Mary₁.
 a. [_{PartP} sent to her]
 b. [_{vP} Mary [_{PartP} sent to her]] (*principle B)
 c. [_{VoiceP} by [_{vP} Mary [_{PartP} sent to her]]]
 d. [_{VoiceP} [_{PartP} sent to her] [_{Voice'} by [_{vP} Mary <sent to her>]]]

The larger question is now why principles A and C should be given representational treatments, but not principle B. If the interpretation of coindexing is as bound-variable anaphora (see Reinhart & Reuland 1993), then there will have to be reconstruction in case of principle A (assuming that in bound-variable anaphora the antecedent must c-command the variable at LF). No such requirement exists for principle B, so it is free to apply derivationally. On the distinct status of principle C, see Reinhart and Reuland 1993.

10. 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. Principle C effects seem to confirm this prediction:

- (85) a. The book was given to him₁ by John₁'s mother.
 b. *The book was given by him₁ to John₁'s mother.

- (86) a. Testimony was given about him₁ by John₁'s mother.
b. *Testimony was given by him₁ about John₁'s mother.
- (87) a. Tabs were kept on him₁ by John₁'s mother.
b. *Tabs were kept by him₁ on John₁'s mother.

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

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

- (88) a. Who were the books given to by the students?
b. ?Who were the books given by the students to?
- (89) a. Who where the chocolate eggs hidden from by the children?
b. ?Who were the chocolate eggs hidden by the children from?
- (90) 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 PartP movement), and gives rise to a Freezing effect (see Müller 1998).²⁵ 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:

- (91) a. Books were given by the students to each other.
b. *Books were given to the students by each other.
- (92) a. Chocolate eggs were hidden by the children from each other.
b. *Chocolate eggs were hidden from the children by each other.
- (93) 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

²⁵ 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 other 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.

preposition: example (92b) 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 adverbial interpretation of *by himself* and *by themselves* is excluded. These facts follow because a DP internal to PartP does not c-command the external argument.

Now consider the following data that suggest the opposite conclusion from that reached on the basis of (85)–(93):

- (94) 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.
- (95) 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.
- (96) 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 (94) show that a negative quantifier can license a negative polarity item that is the external argument. (95) shows that *each* can license a following *the other*, and (96) shows that a QP headed by *every* can bind a pronominal variable contained in a following external argument. These data suggest that *no student* in (94a), *each student* in (95a), and *every student* in (96a) are not contained in PartP, which has been fronted to Spec,VoiceP. It may be that such quantificational expressions as *no student*, *each student*, and *every student* actually undergo movement (covertly or perhaps overtly as argued for in Kayne 1998; see Bell 2004 on negation and negative quantifiers crosslinguistically). 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:

- (97) 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.
- (98) 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.

These 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.

11. 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 θ -role assignment (which subsumes the vP Internal Subject Hypothesis), the binding theory and other LF-interface conditions based on c-command, locality theory (Relativized Minimality, Minimal Link Condition), 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 differs so radically from that analysis.

What are the parameters in my analysis? They are all of the form X (X a functional head, 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, and Borer):

- (99) 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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