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## DERIVING PSEUDOPASSIVES BY PAIR-MERGE\*

## 1 INTRODUCTION

Passive sentences like (1a), where the complement of P is raised to the subject position, are called *pseudopassives*.

- (1) a. John<sub>i</sub> was talked about *t<sub>i</sub>*. (cf. Hornstein and Weinberg (1981: 65))  
 b. Who<sub>i</sub> did you write about *t<sub>i</sub>*? (cf. *ibid.*: 56)

Pseudopassives, as in (1a), are a case of preposition stranding where the complement of P undergoes A-movement, while (1b) is another case where the complement of P undergoes A'-movement. Hornstein and Weinberg (1981) (hereinafter, H&W) postulates the filter in (2) to explain these two cases.

- (2) \*<sub>[NP e<sub>oblique</sub>]</sub> (ibid.: 60)

The filter in (2) states that noun phrases with no lexical material (e.g. traces) that are marked oblique are to be ruled ungrammatical. The traces in (1) seem to be assigned oblique Cases since they are in the complement position of Ps, but, according to H&W, the verb *talk* and the preposition *about* form a complex V in (1a) and the verb *write* and the preposition *about* form a complex V in (1b) by a syntactic rule of Reanalysis. Thus, the traces in (1a, b) are not ruled out by the filter in (2) because they are the complements of the complex Vs; hence the grammaticality of (1).

Although there seems to be no grammatical difference between A- and A'-movement with regard to preposition stranding, we observe different grammaticality between them if there is another PP between V and P, as in (3).

- (3) a. \*John<sub>i</sub> was talked to Harry about *t<sub>i</sub>*. (cf. *ibid.*: 65)  
 b. Who<sub>i</sub> did Sam talk to Harry about *t<sub>i</sub>*? (cf. *ibid.*)

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H&W argue that a pseudopassive sentence is acceptable only if the string of the verb and the preposition constitutes a possible semantic word or is noncompositional. The string *talk about* in (1a) means ‘discuss’ and, semantically speaking, it is a possible predicate; hence the grammaticality of (1a). On the other hand, the string *talk to Harry about* in (3a) is not a possible predicate; hence the unacceptability of (3a). In contrast, such a restriction is not observed in the corresponding sentence with A'-movement, as in (3b).

Four questions arise here. First, how can we define the operation Reanalysis under the current Minimalist framework?; or more simply, what is the operation like? Second, why is the restriction observed in pseudopassives irrelevant to sentences like (3b)? Third, given that Ps can assign Cases to their complements, what becomes of their Case assigning ability when Reanalysis is applied? Fourth, if the complex of V and P constitutes a semantic predicate by Reanalysis, why is the sentence in (4b) unacceptable while its passive counterpart in (4d) is acceptable?

- (4) a. John insisted on your being here on time. (Inada (1981: 127))  
 b. \*John insisted on that you be here on time. (ibid.)  
 c. John insisted that you be here on time. (Rosenbaum (1967: 83))  
 d. That you be here on time was insisted on by John. (ibid.)  
 e. \*That you be here on time was insisted by John. (ibid.)

In this article, I will answer these four questions based on Chomsky’s (2013) labeling algorithm (LA).

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### 2.1. Case Assignment of P

While it is controversial whether PPs are phases, Ps are assumed to be able to assign Cases to DPs like the phase heads C and  $v^*$  (or T and V that inherit  $\phi$ -features from the phase heads). Then, what occurs to the Case assigning ability of P in sentences like (5)?

- (5) a. John<sub>i</sub> was talked about  $t_i$ . (= (1a))  
 b. \*John<sub>i</sub> was talked to Harry about  $t_i$ . (= (3a))  
 c. Who<sub>i</sub> did Sam talk to Harry about  $t_i$ ? (= (3b))

It is assumed that Reanalysis applies to the verb *talk* and the preposition *about* and turns them into a complex verb. The complement of this complex verb, thus, can be passivized in the same way as the complement of a transitive verb. However, this

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kind of analysis does not shed light on the suppression of Case assignment of P in pseudopassives, nor does it clarify how Ps assign Cases to their complements.

The phase heads C and  $v^*$  possess unvalued  $\phi$ -features and their complements, i.e. T and V, inherit the features, which then agree with matching interpretable features of the subject DP and the object DP, respectively. As a reflex of this agreement, T and V value the unvalued Case features of the subject DP and the object DP, respectively. As in the widely accepted assumption that the unvalued  $\phi$ -features of T and V are valued by Agree with the interpretable  $\phi$ -features of DP, unvalued features are generally assumed to be valued by Agree with matching interpretable features.

In addition to this way of feature valuation, Abe (2018) proposes default agreement, as in (6), to explain *there*-constructions as in (7).

- (6) a. Default agreement occurs if two occurrences of unvalued  $\phi$ -features establish an Agree relation. (Abe (2018: 104))  
 b. Unvalued  $\phi$ -features may be supplied with default values as specified in a given language. (ibid.: 105)
- (7) a. There seems to Mary to be a man in the room.  
 b. \*?There seem to Mary to be men in the room.  
 c. There seems to Mary to be men in the room. (Boeckx (1999: 230))

Abe assumes that the expletive *there* carries uninterpretable and unvalued  $\phi$ -features and that the values of the  $\phi$ -features of *there* may be supplied by its associate. According to Abe's analysis, *there* optionally agrees with its associate. If the  $\phi$ -features of *there* agree with the interpretable  $\phi$ -features of its associate, *there* carries uninterpretable valued  $\phi$ -features, which can enter into an Agree relation with T. In order to explain the case in (7), Abe proposes another option where the expletive *there* does not agree with its associate, leaving the  $\phi$ -features of *there* unvalued. In that case, the expletive *there* undergoes Move to SPEC-T before an Agree relation with T is established, and then, the unvalued  $\phi$ -features of *there* act as probes and agree with the unvalued  $\phi$ -features of T. Otherwise, the experiencer would cause the intervention effect. As in (6), Abe proposes that default agreement occurs if two occurrences of unvalued  $\phi$ -features establish an Agree relation, thereby deleting the label [uninterpretable] of relevant features. Unvalued  $\phi$ -features may be supplied with default values as specified in a given language as a last resort strategy, and Abe argues that the third person singular form is the default in English.

Based on Abe's (2018) default agreement of  $\phi$ -features, I assume (8) to explain the Case assignment of P.

- (8) a. Ps optionally bear unvalued Case features, which can trigger default agreement with an unvalued Case feature of another element.  
 b. Unvalued Case features may be supplied with default values, and oblique is the default in English.

Consequently, in structures like (9a), unvalued Case features of P and DP establish an

Agree relation and they are supplied with oblique value as the default value, as shown in (9b).

- (9) a. [PP P<sub>[uCase]</sub> DP<sub>[uCase]</sub>]  
 b. [PP P<sub>[Oblique]</sub> DP<sub>[Oblique]</sub>]

Under these assumptions, whether the P *on* in (10) bears an unvalued Case feature is optional.

- (10) [<sub>v\*P</sub> John [<sub>v\*</sub> [<sub>VP</sub> put the book [<sub>PP</sub> on<sub>([uCase])</sub> [<sub>DP</sub> the desk]<sub>([uCase])</sub>]]]]]

However, if P does not bear any Case feature, *the desk* cannot agree with any element and its unvalued Case feature remains unvalued, which causes the derivation to crash. Thus, P needs to bear an unvalued Case feature in such a case.

## 2.2. Reanalysis Is Pair-Merge

If the P *about* in (5a) bears an unvalued Case feature, default agreement occurs between unvalued Case features of *about* and its complement *John*, as we have assumed in the structure in (10). Then, the unvalued Case feature of *John* is valued oblique, which makes it impossible for T to probe the interpretable  $\phi$ -features of *John* because *John* is no longer active. Thus, pseudopassive sentences like (5a) cannot be derived if the P bears an unvalued Case feature.

On the other hand, if the P *about* in (5a) does not bear any feature that can agree with its complement *John*, the unvalued Case feature of *John* is not valued and *John* can establish an Agree relation with T. Accordingly, pseudopassive sentences are derived if the P bears no unvalued Case feature.

One might wonder why sentences like (5b) are unacceptable. If the P *about* in (5b) lacks an unvalued Case feature like the P *about* in (5a), the Case feature of *John* in (5b) remains unvalued and it seems possible for T to agree with *John*.

To answer the question, let us consider how the operation Reanalysis is defined under the current Minimalist framework. In the Minimalist literature, it is assumed that *Merge* is the only operation that exists in human language. Thus, Reanalysis that combines V and P should be defined by Merge. If V and P are Set-Merged, we obtain the set {V, P}. According to Chomsky (2013), with regard to the form {H, XP}, H a head and XP not a head, LA selects H as the label, but the form {V, P} cannot be labeled because it is of the form {H, H}. The solution to this problem is to assume that V and P are Pair-Merged, which forms the pair <V, P>, not the set {V, P}. Let us consider a structure where the pair <V, P> and DP are Set-Merged, as in (11).

- (11) {<V, P>, DP}

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In the Pair-Merged syntactic object, one of the members is adjoined to the other. In (11), either V or P can select DP as its complement, but the set in (11) needs to be selected by a light verb to derive sentences like (5a). Thus, P is adjoined to V in the pair  $\langle V, P \rangle$  in (11). In such a case, P lacks an unvalued Case feature; otherwise, the feature would not be valued by any element because P is on a separate plane from the other elements (see Chomsky (2004)). This indicates that, with regard to the relation between V and DP, (11) is basically identical to (12), which is a canonical structure of VP of transitive constructions.

(12)  $\{V, DP\}$

Consequently, it is not surprising that DP in (11) can be passivized and sentences like (5a) are derived.

Next, let us consider the structure of (5b). There are two PPs in (5b) and we need to clarify the relation between them first. It is pointed out that there are certain asymmetries of binding domains in double PP complements, as in (13).

- (13) a. I talked to John and Bill about themselves/each other.<sup>1</sup>  
 b. \*I talked to themselves/each other about John and Bill.  
 c. ??I talked about John and Bill to themselves/each other.  
 d. \*I talked about themselves/each other to John and Bill.

(Jackendoff (1990: 431))

The contrasts between (13a) and (13b) and between (13c) and (13d) indicate that the complements of the first PPs asymmetrically c-command those of the second PPs. However, if we assume a structure like (14) for double PP complements, it is unclear how such an asymmetrical c-command is possible.

(14) ... [PP<sub>1</sub> to [DP<sub>1</sub> John and Bill]] ... [PP<sub>2</sub> about [DP<sub>2</sub> themselves]] ...

Wherever PP<sub>1</sub> is located in the structure in (14), DP<sub>1</sub> can never c-command DP<sub>2</sub> because DP<sub>1</sub> is within the complement position of *to*.

To account for such phenomena, I propose that the P of the first PP in double PP complements is Pair-Merged with V, as we have assumed in (11), and that the complement DP of P is virtually the complement of V. Pointing out the binding relation as in (15a), Chomsky (2008) claims that complements of Vs are raised to SPEC-V, as illustrated in (15b).

- (15) a. The slave<sub>i</sub> expected [the picture of him\*<sub>i</sub>] to be somewhere else.  
 (adapted from Chomsky (2008: 149))

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<sup>1</sup> As can be seen in the contrast between (13a) and (13c), it sounds natural when the *to*-PP precedes the *about*-PP but I do not discuss this matter in this paper.

- b. [<sub>v\*P</sub> the slave [<sub>v\*</sub> [<sub>VP</sub> [the picture of him]<sub>i</sub> [expect [<sub>TP</sub> *t<sub>i</sub>* to be *t<sub>i</sub>* somewhere else]]]]]

Based on Chomsky's claim, I propose that the complement DP of the Pair-Merged <V, P> is also raised to SPEC-V, as illustrated in (16).

- (16) [<sub>v\*P</sub> I [<sub>v\*</sub> [<sub>VP</sub> [John and Bill]<sub>i</sub> [<sub>v'</sub> [<sub>v'</sub> [<sub>v</sub> talk to] *t<sub>i</sub>*] [<sub>PP</sub> about themselves]]]]]

According to Chomsky (2008), V undergoes head movement to *v\** in (15b); thus, it is natural to assume that V also raises to *v\** in (16). As Chomsky (2004) postulates that Pair-Merged adjuncts are invisible to the outside elements until Transfer, the verb *talk* pied-pipes *to* when it undergoes head movement to *v\**. Thus, the word order *talk-to-[John and Bill]* is eventually retained. Note that *John and Bill* asymmetrically c-commands *themselves* in (16). This correctly predicts the asymmetries of binding domains in double PP complements as in (13).

Furthermore, *to* in (16) should lack an unvalued Case feature; otherwise, the feature would not be valued because *to* is Pair-Merged with V and cannot agree with any element. On the other hand, *about* in (16) needs to bear an unvalued Case feature; otherwise, the unvalued Case feature of *themselves* would remain unvalued.

In passive sentences, it is assumed that the transitive light verb *v\** never appears and that the complement DP of V agrees with T. Types of the light verb in passives are still controversial in literature (see Honda (2009)), but it does not matter here, and let us just assume that it is the same light verb as the one that selects unaccusative verbs as proposed by Chomsky (2001). Then, the structure for (5b) should be like the structure in (17).

- (17) ... [T [<sub>v</sub> [<sub>VP</sub> [<sub>v'</sub> [<sub>v</sub> talk to] Harry] [<sub>PP</sub> about John]]]]]

However, as we have discussed above, *to* in (17) lacks an unvalued Case feature, and *Harry* is to agree with T, which derives a grammatical sentence as in (18) instead.

- (18) Harry was talked to about John.

On the other hand, if *about* in (17) bears an unvalued Case feature, the unvalued Case feature of *John* agrees with the Case feature of *about*, and T cannot agree with *John*, which has turned inactive. If *about* in (17) lacks an unvalued Case feature, T might be able to agree with *John*, but, then, *Harry* could not agree with any element and the Case feature of *Harry* remains unvalued, which causes the derivation to crash. This is why sentences like (5b) cannot be derived.

Note that the present analysis contains no restriction on *wh*-movement and nothing bans deriving sentences like (5c). Accordingly, to explain preposition stranding, we

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can dispense with the notion of possible semantic predicates.<sup>2, 3</sup>

## 3 SENTENTIAL SUBJECT CONSTRUCTIONS

Although we have assumed that pseudopassive sentences can be explained by treating Reanalysis as Pair-Merge, we still cannot explain (19)(= (4)).

- (19) a. John insisted on your being here on time.  
 b. \*John insisted on that you be here on time.  
 c. John insisted that you be here on time.  
 d. That you be here on time was insisted on by John.  
 e. \*That you be here on time was insisted by John. (= (4))

Given that (19d) is grammatical, *insist* and *on* should be Pair-Merged and the *that*-clause should be the object of the complex verb *insist-on* in (19d). Then, what restricts (19b) from deriving? Such a restriction is not observed when the complement of the complex verb is a gerundive, as in (19a).

## 3.1. Tanigawa (2018)

Before explaining (19), I introduce Tanigawa's (2018) analysis of sentential subject constructions, which provides a clue to the question here. Noting that sentential subjects exhibit both subject and topic properties, Tanigawa (2018) assumes that *that*-clauses are divided into two types, i.e. CP-*that*-clauses and DP-*that*-clauses, as in (20).

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<sup>2</sup> Takami (1992) regards (i) as a counterexample to H&W's semantic word analysis, and claims that a pseudopassive sentence is acceptable if the subject is characterized by the rest of the sentence.

(i) This river should not be swum in. (Takami (1992: 101))

This might also be a counterexample to the present analysis because the subject of (i) is the complement of an adjunct PP. According to Kageyama and Ura (2002), however, a sentence like (i) is not a pseudopassive sentence but a "peculiar passive" sentence, which is derived in a quite different way from pseudopassive sentences like (5a). I do not take up this matter in this paper, but I simply point out that peculiar passives are acceptable only if the predicate represents an individual-level predication, as in (ii).

(ii) a. This spoon has been eaten with. (Kageyama and Ura (2002: 183))

b. \* This spoon was being eaten with. (ibid.: 185)

<sup>3</sup> One might claim that sentences like (i) should be possible if we can freely combine V and P.

(i) \*John discussed about this problem.

Given that Merge occurs freely, the verb *discuss* and the preposition *about* can be Pair-Merged, and then the pair <discuss, about> can Set-Merge with *this problem*. I assume that the pair <discuss, about> is ruled out at the interface. If we have the relation "discuss = talk + about," then the pair <discuss, about> corresponds to "talk + about + about." I assume that this extra "about" cannot be interpreted at the interface. Therefore, it might be possible to interpret H&W's possible semantic words as the interface condition on the pair <V, P>, but I leave this issue for future research.



- (20) a. CP-*that*-clauses: [<sub>CP</sub> C=*that* TP ]  
 b. DP-*that*-clauses: [<sub>DP</sub> D=∅ [<sub>CP</sub> C=*that* TP ]] (Tanigawa (2018: 317))

According to Tanigawa, CP-*that*-clauses bear neither  $\phi$ -features nor Case features, while DP-*that*-clauses bear  $\phi$ -features but lack Case features. In addition, Tanigawa postulates a valued topic-related feature and an unvalued operator feature on DP-*that*-clauses, which can agree with the matching features that T inherits from C. With these assumptions, Tanigawa explains the following examples:

- (21) a. That John won the first prize seems to be true.  
 (McCloskey (1991: 564))  
 b. \*I believe that John won the first prize to be true.  
 (Tanigawa (2018: 314))

As we have observed in (15), ECM-subjects are raised to SPEC-V, but V does not inherit any unvalued topic-related feature since it is unlikely that  $v^*$  possesses such a feature. Therefore, the matrix V cannot value the unvalued operator feature of the DP-*that*-clause in (21b) nor can the DP-*that*-clause value the unvalued  $\phi$ -features of V; hence the ungrammaticality of (21b). In contrast, if the DP-*that*-clause is in the matrix subject position as in (21a), the unvalued topic-related feature of T that is inherited from C can agree with the matching feature of the DP-*that*-clause, valuing the unvalued  $\phi$ -features of T as well.

### 3.2. Selection of P and That Clauses

If we adopt Tanigawa's analysis, the *that*-clause in (19d) bears a valued topic-related feature and an unvalued operator feature, which makes it possible for the matrix T to agree with the *that*-clause. As we have assumed, the complement of the pair  $\langle V, P \rangle$  has the same status as that of V. Thus, the ungrammaticality of (19b) can be explained by the same reason as the ungrammaticality of (21b); namely, (19b) is ungrammatical because the unvalued operator feature of the *that*-clause cannot be valued by any element.

Then, it is mysterious why (19c) is grammatical. I suggest that the *that*-clause in (19c) corresponds to a CP-*that*-clause, as in (20a). Here, I assume that the verb *insist* selects PP or CP but never selects DP. Thus, as Tanigawa assumes that CP-*that*-clauses bear neither  $\phi$ -features nor Case features, there is no feature that requires valuation in the *that*-clause in (19c). This also explains the ungrammaticality of (19e). The unvalued  $\phi$ -features of the matrix T cannot probe CP-*that*-clauses, which are inactive without any unvalued feature.

One might claim that this assumption contradicts the abovementioned proposal, i.e., that the pair  $\langle V, P \rangle$  selects the DP-*that*-clause in (19d) because P is invisible to the complement DP and the DP-*that*-clause is virtually selected solely by V.

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However, such a contradiction disappears if we assume the structure in (22) for (19d).

(22) ... [T [<sub>v</sub> [<sub>VP</sub> [<sub>v'</sub> [<sub>v</sub> insist on<sub>i</sub>] [<sub>PP</sub> *t<sub>i</sub>*] [<sub>DP</sub> D=Ø [<sub>CP</sub> C=that TP ]]]]]]]

To derive the structure in (22), first, the DP-*that*-clause is Set-Merged with P, resulting in PP. Then, V and PP are Set-Merged, resulting in VP. This is possible because the verb *insist* can select PP. Finally, P internally Pair-Merges with V, forming the pair <V, P>. Therefore, we can explain (19) based on Tanigawa's (2018) analysis on sentential subjects in addition to the proposal in section 2.

## 4 CONCLUSION

In this paper, I have revisited the classic operation Reanalysis and captured the operation as Pair-Merge. I have demonstrated that we can dispense with H&W's semantic predicate analysis and explained Case assignment of P in pseudopassive sentences and active sentences under the assumptions in (8). Noting the asymmetric binding relation in double PP complements, I have explained the grammatical difference between A- and A'-movement with regard to preposition stranding. Furthermore, by adopting Tanigawa's (2018) analysis on *that*-clauses, I have clarified the derivation of pseudopassives with sentential subjects.

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