

STRENGTHENING THE ROLE OF CASE IN ELLIPSIS*

Kensuke Takita
Mie University

1. Introduction

Although it is uncontroversial that an elided constituent is required to be identical to its antecedent, much controversy arises when it comes to the nature of the identity in question. Some of the earlier approaches to ellipsis, no matter whether ellipsis is implemented in terms of deletion or copying, have assumed that it is *syntactic*. (see, e.g., Ross 1969, Sag 1976, Williams 1977, Fiengo and May 1994, Chung, Ladusaw, and McCloskey 1995, Fox 2000). Merchant (2001) on the other hand develops a theory that allows ellipsis even when an elided constituent and its antecedent have different syntactic structures, as long as they are *semantically* identical to each other. Specifically, it is proposed that ellipsis can be legitimate if an elided constituent and its antecedent entail each other. Since such a mutual entailment relation is a purely semantic notion, it can hold between two constituents that have completely different syntactic structures.

While various researchers have offered supportive arguments for both positions after Merchant's work, (see, e.g., Lasnik 2001, Fox and Lasnik 2003, Merchant 2008, 2013 for syntactic identity; see, e.g., Potsdam 2007, van Craenenbroeck 2010, Yoshida 2010 for semantic identity), Chung (2013) proposes an idea called *limited syntactic identity*, claiming that on top of Merchant-type semantic identity, syntactic identity is also necessary in a crucial but limited way. That is, semantic identity and syntactic identity are both necessary, although certain limited varieties of syntactic properties can play a role for ellipsis to be legitimate. In particular, it is argued that the condition concerning Case and the one concerning argument structure are the only syntactic identity requirements in ellipsis (details are reviewed in the subsequent section).

Pointing out several problems of Chung's (2013) specific implementations of limited syntactic identity, this paper proposes a more unified implementation of limited syntactic

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identity. Although Chung (2013) argues that both Case and argument structure play a role in ellipsis, I propose to reduce these two to one, strengthening the role of Case. Then, it is shown that the revised formulation, which I call *Case-oriented syntactic identity*, not only simplifies the notion of syntactic identity in ellipsis by reducing the number of the conditions but also offers a unified treatment of a wide range of data.

This paper is organized as follows: Section 2 reviews Chung’s (2013) analysis, pointing out that it has the following two problems: First, there is a redundancy between the condition concerning Case and the one concerning argument structure; second, the condition regarding argument structure should be reconsidered if we look at ellipsis constructions other than sluicing, which is the main focus of Chung (2013). In Section 3, I argue that the idea that Case is the key syntactic factor in ellipsis solves these problems, when combined with Merchant’s (2008, 2013) insight that the size of the elided constituent has a significant consequence for the possibility of ellipsis. Section 4 demonstrates that Case-oriented syntactic identity can capture a wide range of facts in a unified manner, providing a number of consequences. Section 5 concludes this paper.

2. Background and the Problems

Chung (2013) states the basic idea of limited syntactic identity as in (1), and to implement it, she proposes the conditions in (2).

(1) *Limited syntactic identity in sluicing (the basic idea)* (Chung 2013:29)

The interrogative phrase of the sluice must be integrated into a substructure of the syntax in the ellipsis site that is identical to the corresponding substructure of the antecedent clause.

(2) *Limited syntactic identity (specifics)* (Chung 2013:30)

- a. Argument structure condition: If the interrogative phrase is the argument of a predicate in the ellipsis site, that predicate must have an argument structure identical to that of the corresponding predicate in the antecedent.
- b. Case condition: If the interrogative phrase is a DP, it must be Case-licensed in the ellipsis site by a head identical to the corresponding head in the antecedent clause.

Let us see what these conditions are designed to capture. Assuming that an active predicate and its passive counterpart have different argument structures, Chung (2013) takes the impossibility of voice mismatches under sluicing, exemplified by (3) (adopted from Merchant 2013:81; see also 2001, 2008, 2013, Chung 2006, 2013 and references cited therein), as a typical violation of the argument structure condition (following the notation in Merchant 2013, the intended elided materials are put in angled brackets).

(3) a. * Someone murdered Joe, but they don’t know who by. <he was murdered>

b. * Joe was murdered, but they don't know who. <murdered him>

For instance, sluicing is blocked in (3b) because the argument structure of the active *murder*, which takes *who* as its argument, is not identical to that of its passive counterpart in the antecedent.

Note that the ungrammaticality of voice-mismatched sluicing is unexpected under Merchant's (2001) formulation of semantic identity based on a mutual entailment relationship. For Merchant, ellipsis is allowed if the condition in (4) is satisfied, and the notion of *e-GIVENness* is defined as in (5), where *F-clo* stands for *Focus-closure*.¹

(4) *Focus condition on ellipsis* (Merchant (2001: 38))

A constituent α can be deleted only if α is e-GIVEN.

(5) *E-GIVENness* (Merchant (2001: 31))

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting,

(i) A entails F-clo(E), and

(ii) E entails F-clo(A).

The elided TP (notated as TP_E) and its antecedent TP (notated as TP_A) in (3a) have the following semantic representations. Provided that *he* in (6b) refers to *Joe*, TP_A entails F-clo(TP_E) and TP_E entails F-clo(TP_A). Hence, TP_E counts as e-GIVEN by (5).

(6) a. TP_A = F-clo(TP_A) = $\exists x$. x murdered Joe

b. TP_E = F-clo(TP_E) = $\exists x$. he was murdered by x

Consequently, ellipsis of TP should be possible, contrary to fact, if the notion of identity in ellipsis is purely semantic. Chung (2013) takes this point as evidence for the necessity of syntactic identity, and argues that argument structure is the crucial syntactic factor in the case of voice-mismatched sluicing.

Let us turn to the Case condition. One of the cases that the Case condition is designed to cover has to do with the examples in (7), adopted from Chung (2013:27) (see also Merchant 2001:22).

(7) a. Decorating for the holidays is easy if you know how. <to decorate for the holidays>

¹ Some additional definitions are: “[t]he F-closure of α [...] is the result of replacing F-marked parts of α with \exists -bound variables of the appropriate type (modulo \exists -type shifting) (Merchant (2001: 14))”, and “ \exists -type shifting is a type shifting operation that raises expressions to type <t> and existentially binds unfilled arguments (Merchant (2001: 14, fn. 3))”.

- b. *Having to compromise is inevitable, but they have no idea who. <has to compromise>
- c. I remember meeting him, but I don't remember when. <I met him>

As in (7a), a *to*-infinitive can be elided taking a gerund as its antecedent, despite their morphological mismatches. Note that what is elided in (7a) cannot be the gerundive clause, which is identical to the antecedent, because a *wh*-phrase cannot take scope within a gerundive clause (i.e., **how decorating for the holidays*). On the other hand, sluicing is blocked in (7b), which involves ellipsis of a finite TP with a gerundive antecedent, though the relevant mismatch is highly similar to the one in (7a). Since a gerundive clause can be an antecedent for a finite TP as in (7c), the fact that the elided TP in (7b) is finite cannot be the source of the ungrammaticality.

According to Chung (2013), sluicing is blocked in (7b) by the Case condition, which essentially requires the presence of an identical Case-licensor in the antecedent that corresponds to the Case-licensor of the DP sluicing remnant. To be more specific, the Case condition is violated in (7b) since the finite T^0 in the ellipsis site, which Case-licenses the subject interrogative phrase (i.e., *who*), does not have a corresponding finite T^0 in the gerundive antecedent *having to compromise*.² As for (7a) and (7c), the interrogative phrases *how* and *when* are not a DP but an adjunct, so that Case-licensing is not necessary. Hence the Case condition is (vacuously) satisfied. Furthermore, assuming that the elided *to*-infinitive and the gerundive antecedent can stand in a mutual entailment relation in (7a) and (7c), the semantic identity requirement is also satisfied (recall that Chung (2013) argues for both syntactic and semantic identity). Hence, nothing prevents ellipsis from being legitimate.³

² Readers may wonder whether (7b) is ungrammatical because there is no Case-licensor in the antecedent (the account in terms of the Case condition) or simply because PRO cannot serve as a correlate. Note however that these two are not mutually exclusive. Rather, Chung's (2013) analysis offers an *account* of the inability of PRO to serve as a correlate: The Case condition demands that the Case-licensor of the DP remnant have a corresponding head in the antecedent, which means that the correlate must also be Case-licensed by the head in the antecedent. This excludes the possibility for PRO to be a correlate, because PRO cannot receive Case that the overt remnant does.

³ The examples in (7) do not necessarily support the Case condition if there are certain alternative ways of capturing the examples in question. For instance, Tanaka (2011b) analyzes (7a) as involving VP-ellipsis instead of ellipsis of *to*-infinitives, followed by concomitant dropping of the infinitive marker *to* as in (i).

(i) Decorating for the holidays is easy if you know how (to) [_{VP} ~~decorate for the holidays~~].

Although Tanaka's (2011b) analysis might be correct for this particular example, the analysis does not seem to be able to be extended to all the other cases that Chung (2013) captures in terms of the Case condition.

Note at the same time that the argument structure condition cannot deal with the ungrammaticality of (7b). This is because the interrogative phrase in (7b), namely the sluicing remnant *who*, is an argument of *compromise*, and the gerundive antecedent involves the same predicate having an identical argument structure.

Similarly, the Case condition has nothing to say about voice-mismatched sluicing. For instance, (3b), which presumably has a structure like (8), observes the Case condition because the Case-licensor of *who* is T^0 in the elided TP and the antecedent TP does include T^0 .⁴

(8) * $[_{TPA} \text{Joe}_i [_{T^0} \text{was}] \text{murdered } t_i]$, but they don't know $\text{who}_j [_{TP_E} t_j \text{-} T^0 \text{murdered him}]$

Since the two conditions in (2) concern disjoint sets of data, both of them are claimed to be necessary. A close scrutiny however reveals that there is a redundancy between these two conditions. Namely, there are cases that can be excluded by both of them. One such case has to do with the examples that Chung (2013) analyzes as violating the argument structure condition.

The relevant examples come from an alternation between intransitive and derived transitive verbs found in Chamorro. In Chamorro, intransitive verbs like *ekgu* 'jealous' and *andi* 'flirt' can be turned into transitive verbs by taking the suffix *-i*. For instance, the first conjunct in (9a) contains the intransitive verb *ekgu* 'jealous' and the second conjunct

Another objection can be raised for (7c). So-called PRO-*ing* gerunds involved in (7c) and (ii) below can be an antecedent for a finite TP, while so-called *Ing-of* gerunds cannot, as the ungrammaticality of (iib) indicates. (The examples in (ii) are cited from Tanaka 2011b.)

(ii) a. I remember shooting the scene, but I don't remember when.

b. * I remember the shooting of the scene, but I don't remember when.

Chung's (2013) analysis (and my analysis to be proposed) should attribute the contrast found in (ii) to a semantic difference between PRO-*ing* gerunds and *Ing-of* gerunds, because the remnant is an adjunct *when* so that neither the argument structure condition nor the Case condition can exclude (iib). In fact, several researchers (Abney 1987, Grimshaw 1990, Kratzer 1996, Harley and Noyer 1997, Alexiadou 2001, and Moulton 2004, among many others) argue that PRO-*ing* gerunds contain a clausal structure where the external argument of the gerundive verb is present while *Ing-of* gerunds lack the external argument. This difference between these two kinds of gerunds with respect to the existence of the external argument has a significant effect for the calculation of semantic identity in terms of mutual entailment: A PRO-*ing* gerund but not an *Ing-of* gerund can enter a mutual entailment relationship with a finite clause because only the former has an external argument. As a result, ellipsis can be legitimate only in (iia). In this way, the contrast found in (ii) can be captured in terms of semantic identity.

⁴ Throughout this paper I represent ellipsis as if it involved deletion, but it is not the central claim of this paper. Although the analysis to be proposed straightforwardly fits in the deletion approach, Chung (2013:31-32) discusses a potential way of implementing her analysis, on which the proposed analysis is built, under the copying approach. Hence, I do not discuss how to implement ellipsis any further.

contains its derived transitive version (adopted from Chung 2013:16).⁵ These examples tell us the following two facts. First, an internal argument of the transitive version is realized as a direct object while it is marked by oblique or local case if it appears as a complement of the intransitive counterpart (e.g. *hao* vs. *nu hãgu* in (9a) and *si Maria* vs. *gias Maria* in (9b)). Second, a clause containing the intransitive version and one containing its transitive counterpart are synonymous, so that negating one of them results in a contradiction (notated as #).

(9) a. # Ekgu' yu' nu hãgu, lao ti hu ekgu'i hao.
 AGR.jealous I OBL you but not AGR jealous.of you
 'I'm jealous of you, but I'm not jealous of you.'

b. # Ha andidi'i si Juan si Maria, lao ti um-a'andi'
 AGR flirt.with.PROG UNM Juan UNM Maria but not AGR-flirt.PROG
 si Juan gias Maria.
 UNM Juan LOC Maria
 'Juan is flirting with Maria, but Juan isn't flirting with Maria.'

According to Chung (2013), the complements of the intransitive versions become implicit arguments when they are not overtly realized. A piece of evidence for her claim comes from the examples in (10a-b) (based on Chung 2013:16), where denying the existence of the referent of the implicit argument induces a contradiction.

(10) a. # Ekgu' gui', lao tâya' ha ekgu'i.
 AGR.jealous he but AGR.not.exist WH[OBJ] jealous.of
 'He's jealous, but there's no one that he's jealous of.'

b. # Um-a'andi' gui', lao tâya' ha andidi'i
 AGR-flirt.PROG he but AGR.not.exist WH[OBJ] flirt.with.PROG
 'He's flirting, but there's no one that he's flirting with.'

Bearing the facts above, let us consider the examples in (11), where the antecedent contains an intransitive version with an implicit complement while the ellipsis site contains its transitive counterpart (adopted from Chung 2013:18). The ungrammaticality of the examples in (11) indicates that sluicing fails.

⁵ Glosses for Chamorro examples are: AGR = agreement, COMP = complementizer, LOC = local case, OBJ = objective, OBL = oblique, PROG = progressive, UNM = unmarked case, WH = wh-agreement

Furthermore, there arises another motivation for reconsideration if we look at ellipsis constructions other than sluicing. As illustrated by the German examples in (13) (based on Merchant 2013:82), fragment answers (see, e.g., Merchant 2004 and Arregi 2010) are sensitive to voice mismatches, just like sluicing.

- (13) a. Q: Wer hat den Jungen untersucht?
 who.NOM has the boy examined
 ‘Who examined the boy?’
 A: * Von einer Psychologin.
 by a psychologist.DAT
 ‘(intended) (He was examined) by a psychologist.’
- b. Q: Von wem wurde der Junge untersucht?
 by who.DAT was the boy examined
 ‘Who was the boy examined by?’
 A: * Eine Psychologin.
 a psychologist.NOM
 ‘(intended) A psychologist (examined him).’

Since fragment answers are sensitive to voice mismatches, it is tempting to amend the argument structure to cover them. Recall that the argument structure condition is operative for the cases where interrogative phrases are involved. In order to make the argument structure condition applicable to fragment answers, it is necessary to change its formulation so as to cover not only the cases involving interrogative phrases but also the cases with non-interrogative ones. With this modification, we can block ellipsis in (13) under the argument structure condition, because the active version of *untersuchen* ‘examine’ and its passive counterpart have different argument structures.

This modification leads to a problem, however. As shown in (14), VP-ellipsis allows voice mismatches (adopted from Merchant 2013:78-79).⁷

- (14) a. The janitor must remove the trash whenever it is apparent that it should be.
 <removed>

⁷ Some instances of voice-mismatched VP-ellipsis have been reported to be unacceptable (see, e.g., Tanaka 2011a and references cited therein). Following Merchant (2013), I assume that their unacceptability is due to certain extra-syntactic factors, although certain researchers claim that apparent acceptability of voice mismatches results from extra-syntactic factors (see, for instance, Frazier and Clifton 2005, Hartman 2009).

- b. The system can be used by anyone who wants to. <use it>

Why is ellipsis possible even though the subject *it* in (14a), for instance, is an argument of the elided passive verb *removed* and its argument structure does not match that of the transitive verb *remove* in the antecedent? If the argument structure condition concerns only interrogative phrases as in the original formulation in (2a), one can assume that VP-ellipsis is outside the scope of it. Then, the fact that voice-mismatched VP-ellipsis is possible despite the apparent violation of the argument structure condition may not be problematic. Recall however that the argument structure condition should be extended to the cases involving non-interrogative phrases in order to cover the cases of voice-mismatched fragment answers. Hence, the argument structure condition raises an obstacle in order to accommodate the facts concerning voice mismatches under sluicing, fragment answers, and VP-ellipsis in a uniform manner.⁸

To sum up, Chung's (2013) specific implementations of the idea of limited syntactic identity have the following two problems: (i) there is a redundancy between the Case condition and the argument structure condition; (ii) once we look at ellipsis constructions other than sluicing, there are cases where the argument structure condition must be reconsidered to accommodate them. These problems seem to raise the following question: Is there any possibility of postulating a unified notion of syntactic identity, not specific to sluicing but covering other elliptic constructions such as VP-ellipsis and fragment answers?⁹ In Section 3, I propose an alternative implementation of the basic idea of limited syntactic identity in (1), which can provide a unified account of the facts discussed above.

3. Proposal

I first propose to abandon the argument structure condition as an independent condition. This proposal immediately solves the first problem concerning the redundancy between the argument structure condition and the Case condition, simplifying the notion of syntactic identity in ellipsis. I further propose to revise the Case condition so as to cover the facts originally accommodated by the argument structure condition and the ones concerning the elliptic constructions other than sluicing. In this way, I attempt to clarify the nature of limited syntactic identity, strengthening the role of Case in ellipsis.

⁸ Merchant's (2008, 2013) analysis of the difference between sluicing and VP-ellipsis regarding voice mismatches is reviewed in Section 3.

⁹ It should be noted that I am not claiming that Chung (2013) does not care about elliptic constructions other than sluicing. Rather, I believe that Chung (2013) eventually attempts to answer questions like the one raised in the text. In this study, I propose a possible answer to this question, extending the idea of limited syntactic identity.

As a first approximation, I propose to revise the Case condition as follows:¹⁰

(15) *Case-oriented syntactic identity (preliminary)*

If a DP is extracted from the ellipsis site, the DP must be Case-licensed in the ellipsis site by a head identical to the corresponding head that Case-licenses the correlating DP in the antecedent.

Compared to the original Case condition, the revised formulation, dubbed as *Case-oriented syntactic identity*, differs in the following two points. First, while only interrogative DPs are relevant for the original one, any types of extracted DPs are subject to this formulation. This revision is intended to accommodate the cases of VP-ellipsis and fragment answers. Second, Case-oriented syntactic identity requires not only an identical Case-licensor to be present in the antecedent (as in the original one) but also the DP Case-licensed by the Case-licensor in the antecedent to be a correlate of the extracted DP.

To see the second point more clearly, let us consider how the original Case condition and the reformulated version work differently in a stepwise fashion on the basis of (16).

- (16) [Antecedent ... DP₂ H'_{Case} ...] ... [... DP₁ ... [Ellipsis site ... t_{DP1} H_{Case}...]]
 (order irrelevant)

In the structure (16), where DP₁ is extracted from the ellipsis site, the original Case condition works as follows: First it finds the Case-licensing head of DP₁ (if DP₁ is an interrogative DP), notated as H_{Case}, and then, it checks whether the antecedent contains an identical head, H'_{Case}. When H'_{Case} is present in the antecedent, the Case condition is satisfied. Case-oriented syntactic identity in (15) involves the exactly same steps up to this point. The crucial difference is that Case-oriented syntactic identity further checks whether the DP Case-licensed by H'_{Case}, (i.e., DP₂) is a correlate of DP₁. Thus, Case-oriented syntactic identity imposes a more severe restriction than the original Case condition.

Readers may wonder whether Chung's (2013) original formulation of the Case condition may (at least implicitly) imply the existence of the correlate that Case-oriented syntactic identity explicitly demands. Chung's (2013) analysis of the Chamorro antipassive (to be reviewed in Section 4.1), however, tells us that the original Case condition can be satisfied without such a correlate (see the discussion around (27) below). While the original Case condition *only* concerns the presence of the Case-licensing heads, the proposed condition cares about *both* the Case-licensing heads and their licensees (namely, remnants and their correlates).

Recall that Case-oriented syntactic identity has a wider domain of application than the

¹⁰ It is worth noting here that I am not claiming that the information of whether the DP in the antecedent is a correlate or not is available in syntax. Rather, it can be the case that Case-oriented syntactic identity in effect instructs the interfaces to interpret the DP as a correlate of the extracted DP.

original Case condition, since extracted DPs of any type, including interrogative ones, are subject to it. Furthermore, it excludes all the cases that the original one does. Case-oriented syntactic identity thus covers all the cases that the original Case condition has covered including cases like (7). For instance, the contrast between (7a-b), repeated here as (17), is explained essentially in the same way as the original Case condition explains it. That is, the Case-licensor for the remnant *who* in (17b) is finite T^0 , which is absent from the gerundive antecedent clause, while Case-oriented syntactic identity is trivially satisfied in (17a) because the adjunct remnant *how* need not be Case-licensed.¹¹

¹¹ Martín-González (2013) and Thoms (2013) independently observe that there are cases where examples similar to (17b) become grammatical. One such example, taken from Martín-González (2013), is given in (i).

- (i) With all the groups fighting each other, everybody says that *having to compromise is inevitable, but since nobody specifies which groups <have to compromise>*, ours will refuse to do so for the time being.

As for the difference between examples like (17b) and ones like (i), Martín-González (2013:5-6) argues that the problem is non-syntactic, suggesting that it is “related to the computation of possible referents for PRO,” and “based on the possibility of interpreting the sluiced wh-remnant as a proper value for/a subset of the implicit correlate.” That is, “[17b] is] judged unacceptable because such inferences are not readily available. (*ibid.*)” Thoms (2013) also suggests a non-syntactic treatment of the relevant examples in terms of scope.

There is a potential way out of the apparent conflict between the proposed analysis and the non-syntactic treatments, however. Merchant’s (2004) analysis of so-called discourse-initial fragments, exemplified by (ii), gives us a clue. According to Merchant (2004), the discourse-initial fragment in (ii) has a structure like (iii), where ellipsis of the TP consisting of the pronoun *he* and the copula is licensed by the appropriate discourse context (see also van Craenenbroeck 2013a,b and references cited therein for this kind of “accommodation” and certain restrictions on it).

- (ii) [Abby and Ben are at a party. Abby sees an unfamiliar man with Beth, a mutual friend of theirs, and turns to Ben with a puzzled look on her face. Ben says:]
Some guy she met at the park.

- (iii) [_{FP} some guy she met at the park;_i [_{TP} ~~he~~’s ~~t_i~~]]

Suppose then that (17b) and (i) can have the structures in (iii). Notice that in these structures, the remnants are nominal predicates, which do not have to be Case-licensed. Hence, the issue regarding Case can be avoided. Then, if the referent of *they* in (iiib) can be computed more easily than that of *he* in (iiia), the contrast in question follows.

- (iii) a. Having to compromise is inevitable, but they have no idea [_{who_i} [_{TP} ~~he~~’s ~~t_i~~]]
b. With all the groups fighting each other, everybody says that having to compromise is inevitable, but since nobody specifies [_{which groups_i} [_{TP} ~~they~~ are ~~t_i~~]], ours will refuse to do so for the time being.

- (17) a. Decorating for the holidays is easy if you know how. <to decorate for the holidays>
 b. *Having to compromise is inevitable, but they have no idea who. <has to compromise>

Let us consider how Case-oriented syntactic identity captures the effects of the argument structure condition. Recall that Chung (2013) analyzes the Chamorro examples in (11), repeated as (18), as a violation of the argument structure condition, based on the assumption that the derived transitive verbs and their intransitive counterparts have different argument structures (cf. (12)).

- (18) a. *Ekgu' si Joe, lao ti hu tungu' hãyi. <ha ekgu'i>
 AGR.jealous UNM Joe but not AGR know who? WH[OBJ].AGR jealous.of
 'Joe is jealous, but I don't know who.'

- b. ?*Ilek-ña na um-a'andi' i asaguã-ña, lao ti ha tungu' hãyi.
 say-AGR COMP AGR-flirt.PROG the spouse-AGR but not AGR know who?
 < ha andidi'i>
 WH[OBJ].AGR flirt.with.PROG

'She said that her husband was flirting, but she didn't know who.'

The problem is that the ungrammaticality of these examples can be accounted for not only by the argument structure condition but by the Case condition, so that there is a redundancy between these two conditions. Taking advantage of Chung's (2013) assumption that in Chamorro a DP in the oblique or local case-marking is a complement of a null preposition, I have suggested that sluicing is blocked in (18) because the wh-phrase *hãyi* 'who' is Case-licensed by transitive v^0 , and neither the intransitive v^0 nor the null preposition can serve as its corresponding Case-licensing head. This account still holds under Case-oriented syntactic identity. At the same time, there arises no redundancy, because the argument structure condition has been abandoned as an independent condition.

Let us now turn to the voice-mismatched sluicing cases. Recall that in (8), repeated as (19), T^0 in the ellipsis site Case-licenses the extracted DP *who*, and the antecedent does contain an identical T^0 , satisfying the original Case condition.

This analysis thus relates the Martín-González/Thoms-type non-syntactic factors to the computation of the possible referents for the pronominal subjects of the elided copula clauses, not for PRO in the alleged finite clause antecedents (namely the materials within the angled brackets in (17b) and (i)). Notice at the same time that this analysis does not undermine the necessity of Case-oriented syntactic identity. The alleged underlying finite clauses for (17b) and (i) are equally excluded by Case-oriented syntactic identity, leaving us the copula clauses as only available underlying sources. Then, the Martín-González/Thoms-type non-syntactic factors come into play, yielding the contrast between (17b) and (i).

(19) * $[_{TPA} \text{Joe}_i [_T^0 \text{was}] \text{murdered } t_i]$, but they don't know $\text{who}_j [_{TPPE} t_j T^0 \text{murdered him}]$

However, what is Case-licensed by the finite T^0 in the antecedent is important for Case-oriented syntactic identity. In (19), T^0 in the antecedent Case-licenses *Joe*, but it is not the correlate of *who*. Hence, Case-oriented syntactic identity is violated, so that ellipsis is blocked in (19).

The ungrammaticality of voice-mismatched fragment answers receives essentially the same analysis, given the structures in (20) for (13b) (English words and structures are used for illustration).

(20) Q: $\text{who}_i [_T^0 \text{was}] [_{TPA} \text{the boy } t_T^0 \text{ examined by } t_i]$

A: * $a \text{ psychologist}_j [_{TPPE} t_j T^0 \text{examined him}]$

In the elided TP, T^0 licenses the nominative Case on the fragment, *a psychologist*, but the corresponding T^0 in the antecedent does not Case-license its corresponding item, namely *who*, but the subject *the boy*. Since Case-oriented syntactic identity is not observed, ellipsis is blocked in voice-mismatched fragment answers. In this way, the revised formulation can accommodate the effect of the argument structure condition, not only on sluicing but also on fragment answers.¹²

What remains to be explained is the case of voice-mismatched VP-ellipsis. The rough structures of the examples in (14) are given in (21). In (21a), the underlying object *it* is extracted from the ellipsis site (no matter whether the elided domain is vP or VP).

(21) a. $\text{the janitor } [_T^0 \text{must}] [_{vPA} \text{remove the trash}] \text{ whenever it is apparent that it;}$
 $[_T^0 \text{should}] \text{ be } [_{vPE} \text{removed } t_i]$

b. $\text{the system}_i \text{ can be } [_{vPA} \text{used } t_i] \text{ by anyone who wants PRO}_j \text{ to } [_{vPE} t_j \text{use it}]$

Hence, Case-oriented syntactic identity demands (i) that the surface subject *it* be Case-licensed within the ellipsis site, (ii) that the antecedent vP contain a head identical to the one that Case-licenses *it*, and (iii) that the relevant head in the antecedent Case-license the correlate of *it*. None of these requirements is satisfied in (21a). First, *it* is Case-licensed by T^0 located outside the ellipsis site; second, the antecedent vP lacks T^0 ; third, T^0 in the antecedent Case-licenses *the janitor*, which is not a correlate of *it*.¹³ Hence, (21a) is predicted to be

¹² One may wonder how Case-oriented syntactic identity accommodates examples like (3a) and (13a), where the remnant is a *by*-phrase. I return to these examples in section 4.2.2.

¹³ Note incidentally that the original Case condition in (2b) (if appropriately modified so as to accommodate VP-ellipsis) also demands (i) and (ii) in the text, and neither of them is satisfied.

ungrammatical. The same problem arises for (21b).¹⁴

Merchant's (2008, 2013) insight about the different behaviors of various elliptic constructions with respect to voice mismatches provides a key to the solution. Arguing for the necessity of syntactic identity, Merchant (2013) proposes that a functional head Voice, which encodes the voice properties of a clause with syntactic features such as [active] and [passive] (see, among many others, Kratzer 1996 and Collins 2005), plays a crucial role. To be more specific, he assigns the following structures to an active clause and its passive counterpart, where VoiceP is located between TP and vP (*Arg* in (22b) stands for an implicit argument).

- (22) a. [TP someone_i [VoiceP Voice_[active]⁰ [vP t_i murdered Joe]]]
 b. [TP Joe_i was [VoiceP Voice_[passive]⁰ [vP *Arg* murdered t_i]]]

Then he attributes the possibility of voice mismatches under ellipsis to the difference of the structural size of the ellipsis site. Suppose that VP-ellipsis targets a constituent below VoiceP, for instance vP. Since the two vPs in (22) do not contain the information of voice, they are regarded as syntactically identical to each other. On the other hand, suppose that sluicing and fragment answers target a constituent higher than VoiceP, for instance TP. The TPs in (22) cannot count as identical to each other, however. This is because they have different syntactic specifications on Voice⁰. In this way he captures the difference between sluicing and fragment answers, which involve ellipsis of constituents larger than (at least) VoiceP, on the one hand and VP-ellipsis, which targets constituents below VoiceP, on the other.

As mentioned above, the crucial point of Merchant's (2008, 2013) analysis is that the structural size of the ellipsis site affects the possibility of voice mismatches under ellipsis. Bearing this in mind, let us return to the main discussion. While the VoiceP is crucial for Merchant (2008, 2013), the Case-licensor is crucial for the approach pursued in this paper.¹⁵ Focusing on the structural position of the Case-licensor of the DP extracted from the ellipsis site clearly reveals the difference between (23a) and (23b): The Case-licensor is always contained in the ellipsis site in the case of sluicing and fragment answers as shown in (23a);

¹⁴ If VP but not vP is elided in (21b), PRO is not extracted from the ellipsis site. Then, Case-oriented syntactic identity becomes irrelevant, so the problem pointed out in the text does not arise. Meanwhile, one may say that Case-oriented syntactic identity is irrelevant for PRO, since it requires no Case (Chomsky 1981). If PRO requires null Case (Chomsky and Lasnik 1993, Marin 2001), however, it should be subject to Case-oriented syntactic identity. Furthermore, the examples in (i), taken from Merchant (2013:79-80), for instance, have overt subjects, which do require Case-licensors.

(i) a. This obviously has never been faced or solved properly before and somehow we have to.
 <solve it properly>

¹⁵ In section 4.3, I argue that Case-oriented syntactic identity readily accommodates a case that is problematic for the [active/passive] feature-based analysis.

on the other hand, in VP-ellipsis, the relevant Case-licensor, namely T^0 , is always excluded from the ellipsis site as in (23b).

(23) a. Sluicing/fragment answers: [... DP $\{_{\text{TP/E}} \dots H_{\text{Case}} \dots t \dots\}$]

b. VP-ellipsis: [... DP $T^0 (= H_{\text{Case}}) \{_{\text{VP/E}} \dots t \dots\}$]

Capitalizing on this difference, I propose (24) as the final version of Case-oriented syntactic identity.

(24) *Case-oriented syntactic identity (final version)*

If a DP is extracted from the ellipsis site, and if the head that Case-licenses the DP is contained in the ellipsis site, the Case-licensing head in the ellipsis site must have an identical head in the antecedent that Case-licenses the correlating DP.

Specifically, for the condition in (24) to apply, a DP must originate from an ellipsis site while its Case-licensor must be elided. Among the structures in (23), (23a) satisfies this premise but (23b) does not. Hence, only the structure in (23b) is exempt from the application of (24). In this way, the case of voice-mismatched VP-ellipsis ceases to be problematic. Put it differently, this formulation relates the applicability of the condition to the structural position of a Case-licensor with respect to an ellipsis site. In this sense, it incorporates Merchant's (2008, 2013) insight.

The formulation in (24) is even consistent with Chung's (2013) original insight in (1). Let me rephrase the insight as follows: Syntactic identity is required in order to ensure that the element extracted from the ellipsis site is not separated from the syntactic structures of the clause to which ellipsis applies. For Chung (2013), Case and argument structure conspire to achieve this result. Case-oriented syntactic identity, on the other hand, reduces the number of the relevant factors, taking advantage of the fact that an alternation of argument structure generally leads to an alternation of Case-licensing relation. Meanwhile, syntactic identity is *limited*: If there is no need of ensuring the connection between an extracted element and the rest of the clause, no syntactic identity is required. In cases where the Case-licensor of the extracted element is located outside the ellipsis site, including VP-ellipsis, the element in question can be integrated into the structure by the Case-licensing head. Hence, no syntactic identity is required between the ellipsis site and its antecedent. The formulation in (24) achieves this result by making it inoperative in such cases.

In this section, I have clarified the precise formulation of Case-oriented syntactic identity and the rationale behind it, resolving the two problems pointed out in Section 2. In the next section, I demonstrate that Case-oriented syntactic identity has a number of consequences. In the course of discussion, it becomes clear that the present analysis indeed completes some aspects of Chung's (2013) analysis.

4. Consequences

This section demonstrates that Case-oriented syntactic identity can capture a wide range of facts in a unified manner. Specifically, I take up the following issues: Sluicing with sprouted DP remnants (Chung, Ladusaw, and McCloskey 1995; see Nakao 2009 and Chung, Ladusaw, and McCloskey 2011 for more recent treatments) (Section 4.1.); the nature of prepositions in sluicing with PP remnants and with passive *by*-phrases (Section 4.2.) and ellipsis with multiple predicates discussed by Nakamura (2013) (Section 4.3).

4.1. Sluicing with Sprouted DP Remnants

The first consequence concerns what Chung, Ladusaw, and McCloskey (1995) call *sprouting*-type sluicing. This type of sluicing lacks an overt correlate, as exemplified by (25).

(25) John ate, but I don't know what. <he ate>

Recall that Case-oriented syntactic identity requires that a correlate be present in the antecedent when the remnant is a DP. Thus, sprouting-type sluicing appears to be a problem to Case-oriented syntactic identity. I argue that it ceases to be a problem once the structure of the antecedent clause in (25) is revealed. In particular, I exploit Baker's (1988) insight about the implicit object constructions, which Chung (2013) also makes use of in her analysis of the Chamorro antipassive.

The problem that Chung (2013) aims at solving has to do with examples like (26a) (based on Chung 2013:35-36).¹⁶ In (26a), sluicing targets a clause containing the transitive form of *guaiya* 'love' while the verb in the antecedent has the form of antipassive, which is derived from the transitive form by attaching the prefix *man-*.¹⁷

(26) a. Mang-guaiya si Julia, lao ti hu tungu' hâyi. <ha guaiya>
 AGR.AP-love UNM Julia but not AGR know who? WH[OBJ].AGR love
 'Julia loves (someone), but I don't know who. <she loves>'

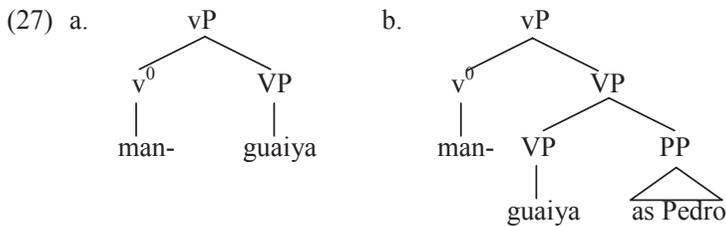
¹⁶ Additional glosses are: AP = antipassive. See also footnote 5.

¹⁷ Following Chung (2013:36-39), I do not discuss an alternative possibility that the ellipsis clause contains the antipassive version of the verb in question. The discussion below in the text reveals that Chung's (2013) analysis and mine do not differ in that both of them exclude the possibility in question. This is because both analyses assume that the remnant *hâyi* 'who' in (26a) would be Case-licensed by a preposition if the ellipsis clause contained an antipassive verb (see (27b)/(28b)). Since there is no corresponding preposition in the antecedent that involves an antipassive vP without an overt oblique complement (see (27a)/(28a)), ellipsis should be prohibited, contrary to fact.

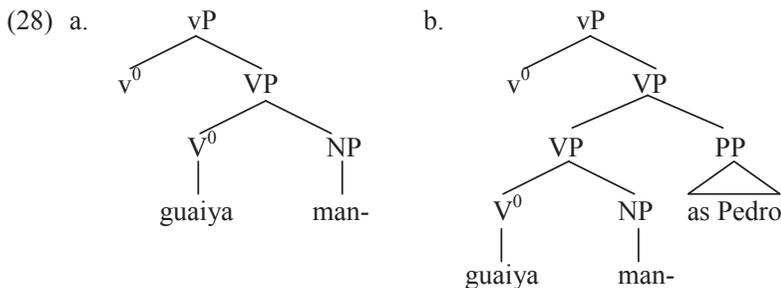
- b. Mang-guaiya hao as Pedro.
 AGR.AP-love you OBL Pedro
 ‘You love Pedro.’

Antipassive verbs optionally take an oblique complement corresponding to the object of the source verb as in (26b). Given this, Case-licensing configurations are different in the ellipsis site and its antecedent in (26a). Hence, the grammaticality of (26a) challenges Chung’s (2013) analysis (and Case-oriented syntactic identity as well).

To resolve this problem, Chung (2013) proposes, partly based on Baker (1988), that *man-* is the realization of v^0 in an antipassive clause and the verb *guaiya* ‘love’ takes no complement in an antipassive vP as in (27a). Furthermore, when an oblique phrase like *as Pedro* appears, it is analyzed as a PP adjoined to VP as in (27b). She then assumes that v^0 in (27) has a potential of Case-licensing, following Rothstein (1992), even when there is no DP that enters a Case-licensing relation with it, and that the argument structure of an antipassive verb is identical to that of its transitive counterpart. For Chung (2013), these assumptions suffice to satisfy the conditions in (2).



One problem still remains for Case-oriented syntactic identity, because there is no correlate in (27a). The solution pursued here actually revives Baker’s (1988) insight that *man-* is a noun, which serves as a complement of the verb and then undergoes incorporation to the verb. Rephrasing this insight in more recent terms, I propose that *man-* is generated as the object of *guaiya* ‘love’ and Case-licensed by v^0 , which is identical to the one appearing in a transitive clause, as in (28a).



When an oblique phrase appears, I follow Chung (2013) in that the oblique phrase is an adjunct, but unlike her I assume *man-* serves as a complement as in (28b), as originally suggested by Baker (1988). Finally *man-* cliticizes onto v^0 (or V^0), yielding the surface form in both cases. The problem regarding (26a) is now resolved. Since the transitive v^0 Case-licensing *håyi* ‘who’ does have an identical counterpart in the antecedent, and the v^0 in the antecedent Case-licenses *man-*, which indeed counts as a correlate of *håyi* ‘who’.

Applied to the case of sprouting-type sluicing, the grammaticality of (25) readily follows. As shown by the vP in the antecedent in (29), the main difference between English and Chamorro is that the element in question is not overtly realized in the former, as indicated by \emptyset (I leave it open whether \emptyset undergoes cliticization).

(29) [TPA John T⁰ [_{VP} v⁰ [_{VP} ate \emptyset]]], but I don’t know what_j [_{TP_E} he [_{VP} v⁰ [_{VP} ate t_j]]]

Case-oriented syntactic identity is satisfied because both the ellipsis site and its antecedent contain v^0 , and there is in fact a correlate of *who*, namely \emptyset . Hence, the sprouting-type sluicing is not a problem anymore. This analysis thus supports Baker’s (1988) idea in a particular way.

4.2. Case, Prepositions, and Passive *By*-Phrases

4.2.1. Case and Prepositions

The second consequence to be discussed has to do with the nature of certain prepositions. Let us start the discussion by looking at the examples in (30), adopted from Chung (2013:28-29) (see also Chung 2006). According to Chung (2013), the Case condition rules out (30a) but not (30c), because the Case-licensor of *who*, namely the preposition *of*, is absent from the antecedent in (30a) while it is present in (30c). As for (30b), the Case condition is irrelevant because the interrogative phrase in question is a PP *of who*. Case-oriented syntactic identity captures this paradigm in the same way.

- (30) a. * They’re jealous, but it’s unclear who. <they’re jealous of>
 b. They’re jealous, but it’s unclear of who. <they’re jealous>
 c. They’re jealous of someone, but it’s unclear who. <they’re jealous of>

The paradigm given in (31) discussed by Merchant (2013) appears to be problematic for Case-oriented syntactic identity. The examples in (31) are built on the alternation illustrated in (32).

- (31) a. * They embroidered something with peace signs, but I don’t know what on. <they embroidered peace signs>

- b. * They embroidered something on their jackets, but I don't know with what. <they embroidered their jackets> (based on Merchant 2013:100)

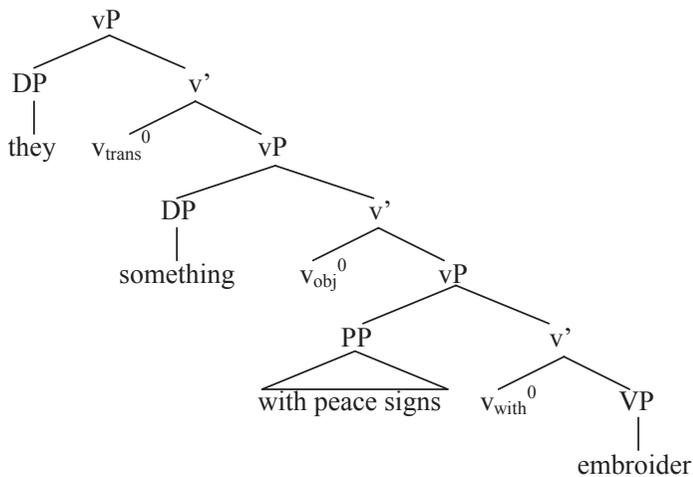
(32) a. They embroidered something with peace signs.

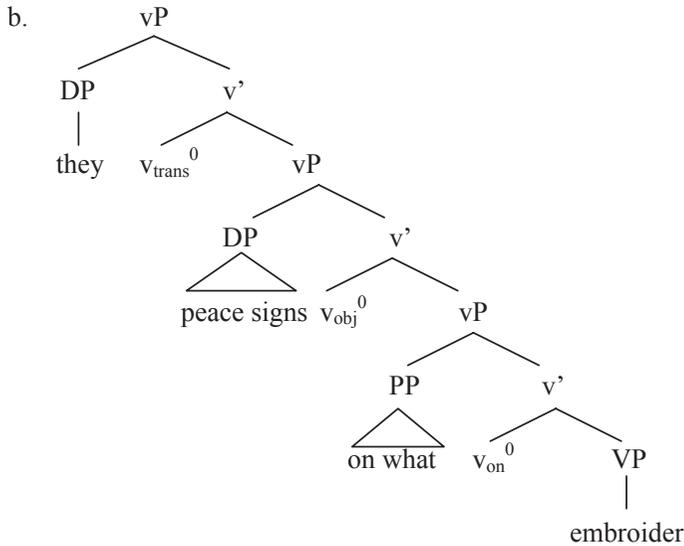
- b. They embroidered peace signs on something. (Merchant 2013:99)

The point is that ellipsis is blocked in (31), although the sluicing remnants are PPs. Note that the argument structure condition, which we have abandoned, can capture the paradigm in (31), provided that the argument structures of *embroider* are different from each other in (32a) and (32b).

Merchant's (2013) analysis of (31) in fact provides a key to the solution, however. He assumes that verbs like *embroider* involve a series of specialized v^0 s. Specifically, he analyzes the vP in the antecedent and the one in the ellipsis site in (31a) as having the structures in (33a) and (33b), respectively, where v_{trans}^0 introduces an external argument (following Kratzer 1996), v_{obj}^0 introduces an object (following Jelinek 1998), and $v_{with/on}^0$ introduces an oblique argument marked with a preposition (following Anagnostopoulou 2003 and Pylkkänen 2008).

(33) a.





Particularly of importance for the present study is the claim that “[heads like $v_{\text{with/on}}^0$] will be coded as selecting the appropriate preposition; for example, [v_{with}^0] selects a PP headed by *with*, and so on” (Merchant 2013:100). The ungrammaticality of (31) readily follows under Case-oriented syntactic identity if this selectional relation between v^0 in question and a PP can be taken as a “Case-licensing” relation, specifically an inherent Case-licensing relation (cf. the treatment of *of* in Chomsky 1981).¹⁸ That is, for example in (31a), the extracted phrase *on what*, even though it is a PP, is necessarily Case-licensed by v_{on}^0 in the ellipsis site, which in turn requires the antecedent vP to contain an identical v^0 . Hence, the clause having (33a) as its part cannot serve as an appropriate antecedent, blocking ellipsis.

Recall that (30b), repeated as (34a), is claimed to be exempt from Case-oriented syntactic identity because the remnant *of who* requires no Case-licensor.

(34) a. They’re jealous, but it’s unclear of who. <they’re jealous>

b. they’re jealous $\emptyset_{\text{of}} \emptyset_{\text{DP}}$, but it’s unclear of who_i [~~TP they’re jealous t_i~~]

If the preposition *of* were also selected by a designated v^0 (v_{of}^0 , for instance), (34a) would be ungrammatical because the antecedent does not have a corresponding overt element. It is not possible to postulate a null counterpart of the preposition in the antecedent as in (34b), either (the null counterpart of *of* is notated as \emptyset_{of} and \emptyset_{DP} stands for the implicit correlate that \emptyset_{of} selects). This is because such a null preposition incorrectly allows (30a), repeated as (35a), to observe Case-oriented syntactic identity, rendering it grammatical. That is, postulating such a null element yields the structure (35b).

¹⁸ The Case-licensing relation can also be state as follows: The DP complement of the relevant PP receives inherent Case from v^0 via the preposition.

(35) a. * They're jealous, but it's unclear who. <they're jealous of>

b. they're jealous \emptyset_{of} \emptyset_{DP} , but it's unclear who_i [~~TP they're jealous of t_i~~]

In (35b), the Case-licensor of the remnant *who*, namely *of*, can have a corresponding null preposition in the antecedent that Case-licenses the implicit correlate. Hence, there must be an independent way of distinguishing cases like (31) from ones like (30).

Levin's (2006) analysis of object alternation in terms of *event simplicity* provides a key to this issue. As shown in (32), triadic predicates like *embroider* have alternative realizations of their VP-internal arguments. Levin (2006) argues that such an alternation is possible because predicates like *embroider* have a simple event structure of the form [x ACT_{<MANNER>}]. On the other hand, predicates that do not exhibit such alternations are claimed to have more complex event structures which consist of at least two subevents. As shown in (36) and (37) (based on Levin 2006:5-6), predicates like *fill* and *obtain* do not allow object alternation, and they are analyzed as having complex event structures.

(36) a. Shannon filled the bag with the groceries.

b. * Shannon filled the groceries into the bag.

(37) a. Alex obtained the rare metal from Transylvania.

b. * Alex obtained Transylvania of the rare metal.

Merchant (2013) exploits this idea, and proposes the structures in (33), where a series of v^0 s but not the verb *embroider* itself select internal arguments.¹⁹ Unlike *embroider*, predicates like *fill* and *obtain*, which do not allow object alternations due to their complex event structures, behave differently with respect to sluicing, as shown in (38). The examples in (38) involve sprouted PP remnants, and they allow sluicing, just like (30).

(38) a. Shannon filled the bag, but I don't know with what. <Shannon filled the bag>

b. Alex obtained the rare metal, but I don't know from where. <Alex obtained the rare metal>

The *embroider*-type predicates thus can be distinguished from the *jealous*-type predicates in terms of the availability of alternative realizations of its internal arguments, which is ultimately related to the type of its event structure. If it allows alternative realizations, its PP arguments are licensed by designated v^0 s, and hence, sensitivity to Case-oriented syntactic identity emerges. In this sense, *jealous* is not suitable to compare with *embroider*, because it has only one internal argument (hence no alternation to begin with). Among the predicates

¹⁹ Merchant (2013) actually refers to Levin (2003), which I could not have an access to, but I believe it is an earlier version of Levin (2006).

that Chung (2013) groups together with *jealous*, *transform* is more reliable for our purpose. The examples in (39), taken from Chung (2013:28-29), indicate that *transform* patterns with *jealous* in the relevant respect. As is expected, *transform* does not allow object alternation, as in (40).

- (39) a. * UN is transforming itself, but what <it is transforming itself into> is unclear.
 b. UN is transforming itself, but into what <it is transforming itself> is unclear.
 c. UN is transforming itself into something, but what <it is transforming itself into> is unclear.

- (40) a. John transformed the car into the robot.
 b. * John transformed the robot {from/out of} the car.

We can gain a further merit of employing Levin's (2006) event simplicity from the paradigm in (41).

- (41) a. * Joe sent a letter, but we don't know who. <he sent the letter to>
 b. Joe sent a letter, but we don't know to who. <he sent the letter>
 c. Joe sent a letter to somebody, but we don't know who. <he sent the letter to>

That is, dative alternation verbs like *send* pattern with ones like *jealous* and *transform*, despite the fact it has two realizations of its internal arguments. Following Marantz (1993) and Baker (1997), however, Levin (2006) explicitly distinguishes object alternation verbs like *embroider* from the dative alternation verbs. Then, if the dative alternation verbs have complex event structure, the paradigm in (41) ceases to be problematic.

In this way, Levin's (2006) analysis of object alternation in terms of event simplicity also provides a right cut for the behavior of PP remnants in sluicing.²⁰

²⁰ Readers may wonder whether there is a more direct way of distinguishing PPs in the *embroider*-type predicates from those in the *jealous*-type predicates. Heggie's (1988:363) observation given in (i) (taken from den Dikken 2006:330) provides a potential diagnostics. The examples in (i) indicates that certain PPs can (marginally) license an NP parasitic gap, although PPs generally cannot license parasitic gaps (Postal 1993; see also Hornstein and Nunes 2002, Nunes 2004).

- (i) a. ? A person to whom I sent a report without notifying *pg*.
 b. ? A person to whom I spoke without kneeling in front of *pg*.
 c. ? To whom did John speak without being able to see *pg*?

4.2.2. Passive *By*-Phrases

The discussion in Section 4.2.1 treats certain prepositions as inherent Case-markers. This idea in fact completes the analysis of the impossibility of voice mismatches under sluicing and fragment answers. The relevant examples in (3a) and (13a) are repeated as (42) and (43), respectively. In these examples, *by*-phrases are extracted from the ellipsis sites.

(42) *Someone murdered Joe, but they don't know who by. <he was murdered>

(43) Q: Wer hat den Jungen untersucht?
who.NOM has the boy examined

'Who examined the boy?'

A: *Von einer Psychologin.
by a psychologist.DAT

'(intended) (He was examined) by a psychologist.'

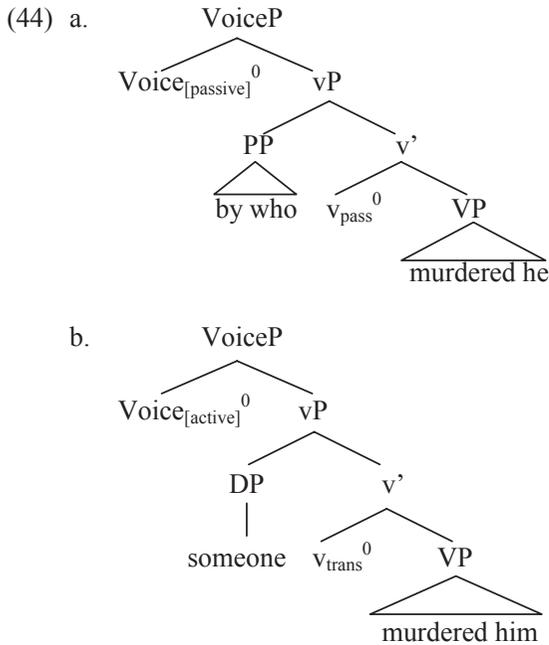
If 'by' in a passive clause is a preposition that Case-licenses its complement DP, Case-oriented syntactic identity cannot predict their ungrammaticality. This is because *by* is located outside the ellipsis site, so that Case-oriented syntactic identity becomes inoperative.

On the other hand, their ungrammaticality straightforwardly follows if we assume that the passive 'by' is similar to the prepositions in (33) in that it must be licensed within vP (see, for instance Collins 2005). For the sake of clarity, I suggest that a *by*-phrase is introduced and licensed by v_{pass}^0 , whose projection in turn serves as the complement of Voice⁰ specified as [passive]. Thus, the underlying structure of the relevant part of the passive clause in (42) looks like (44a), and the corresponding active clause can be represented as (44b), abstracting away from irrelevant details.²¹

If the preposition *to* in (i) can be considered as an instance of Case-marker, the NP-like behavior of the PPs can be captured. It is then predicted that the PP arguments of the *embroider*-type predicates can also license parasitic gaps. However, I could not have found speakers who accept the examples in (i). In fact, den Dikken (2006) seems to have added the “?” mark to the relevant examples, which are absent from the original source. I believe this reflects certain speaker-variations on the examples in question. Hence, I leave a detailed examination of the prediction for future research.

²¹ Given Merchant's (2013) execution of Levin's idea, the VP below the $v_{\text{trans/pass}}^0$ should be further decomposed into something like (i), where v_{obj}^0 rather than the verb itself selects the object when the passivized verb has a simple event structure. Nothing in the discussion in the text hinges on this part of VP structure, though.

(i) [_{VP} him v_{obj}^0 [_{VP} V⁰]]



Given the structures in (44), the mismatch between v_{pass}^0 and v_{trans}^0 is responsible for the ungrammaticality of (42).

Exactly how *by*-phrases are licensed by v_{pass}^0 seems to require more elaboration, however, once the contrast found in (45) are taken into consideration. In these examples, the antecedent is a so-called *short-passive* clause, which lacks an overt *by*-phrase.

- (45) a. Joe was killed, but we don't know by who. <he was killed>
 b. * Joe was killed, but we don't know who <he was killed by>

Since (45a) is grammatical, Case-oriented syntactic identity is observed, which in turns means that v_{pass}^0 in the elided clause that licenses the remnant *by who* has a corresponding v_{pass}^0 in the antecedent that also licenses its null counterpart as the correlate. Hence, the antecedent clause in (45) has a structure like (46a) and the relevant part of the elided clause has a structure like (46b) (the position of *killed* is irrelevant).

- (46) a. [TP Joe was [VoiceP Voice_[passive]⁰ [vP \emptyset_{by} \emptyset_{DP} v_{pass}^0 [VP killed t_{Joe}]]]]
 b. ... [CP by who_i [TP he was [VoiceP Voice_[passive]⁰ [vP t_i v_{pass}^0 [VP killed t_{he}]]]]]
 c. ... [CP who_i [TP he was [VoiceP Voice_[passive]⁰ [vP by t_i v_{pass}^0 [VP killed t_{he}]]]]]

If v_{pass}^0 , but not *by* or \emptyset_{by} , were the sole head that assigns inherent Case to DPs in *by*-phrases, the ungrammaticality of (45b), whose elided clause should be analyzed as having a structure like (46c), would be puzzling. This is because the remnant *who* is Case-licensed solely by

v_{pass}^0 , and the corresponding head in (46a) does license the correlate.

Collins (2005) in fact argues that the overt preposition *by* assigns accusative to its complement DP while in the short-passive the null counterpart of *by* (notated as \emptyset_{by} in (46a)) assigns null Case to its complement DP, namely \emptyset_{DP} , yielding an implicit *by*-phrase as a whole. Building on his idea, I suggest that DP-complements of passive *by*-phrases are Case-licensed by a combination of v_{pass}^0 and the preposition *by*. To be more precise, v_{pass}^0 licenses either *by* or \emptyset_{by} , but the actual Case value depends on the choice. That is, accusative is assigned if *by* is chosen while null Case is assigned if \emptyset_{by} is chosen. Hence, the pair of (46a) and (46c) satisfies Case-oriented syntactic identity in terms of v_{pass}^0 , but the mismatch between \emptyset_{by} and *by* induces the ungrammaticality of (45b).

Recall that in Section 4.2.1 I denied that implicit PP-complements of *jealous*-type predicates are licensed by null prepositions. One may think that it is not consistent with the idea that invisible *by*-phrases in the short-passive involve the null counterpart of *by*. There are certain differences between PP-complements in question and passive *by*-phrases, however. PP-complements are directly selected by the predicates, and the predicates themselves determine which preposition is realized (*jealous* selects *of*, *flirt* selects *with*, and so on). On the other hand, v_{pass}^0 itself does not have any information concerning prepositions: Its primary role is to introduce an external argument in a passive clause. Hence, v_{pass}^0 needs a help from a preposition, which can be overt or covert, to determine the actual Case value surfacing on the external argument. It is then expected that passive *by*-phrases might be overtly realized by different prepositions. Japanese passive constructions, where *by*-phrases have two realizations (DP-*ni* and DP-*niyotte*) as in (47) (see, Hoshi 1999, among many others, for an overview), seem to fulfil this expectation.

- (47) Taroo-ga Hanako-ni/niyotte homerareta
 Taroo-NOM Hanako-by was.praised

‘Taroo was praised by Hanako’

Before closing this subsection, recall that under Chung’s (2013) analysis, the argument structure condition excludes voice-mismatched sluicing. For the condition to apply to cases like (3a), however, it must be the case that a passive *by*-phrase is an argument but not an adjunct. Otherwise the argument structure condition is irrelevant. This is then almost equivalent to what I have just suggested. That is, I suggested in (44a) that the *by*-phrase is base-generated in the position corresponding to the one where an external argument is base-generated in the transitive counterpart. Therefore, the above discussion in fact completes Chung’s (2013) analysis, arguing for the alternative formulation.

4.3. Ellipsis with Multiple Predicates

In this subsection, I demonstrate that Case-oriented syntactic identity allows us to embody one important remark made by Chung (2013). She points out that given the basic

idea of limited syntactic identity in (1), “when the ellipsis contains a complex syntactic structure with multiple predicates, it is not obvious that *every* predicate is so [= syntactically, author] constrained” (Chung 2013:30). Specifically, she points out that in (48a), *who* is the argument of *date* and the antecedent has the active form of *date*, so that the argument structure condition demands that the ellipsis site involve the active one. The voice of *annoy*, however, can differ in the ellipsis site and in the antecedent, so there are two potential underlying sources given in (48b-c).

- (48) a. He said that he was annoyed by the fact that she was dating someone, but he refused to reveal who.
- b. ... to reveal who <[the fact that she was dating *t*] annoyed him>
- c. ... to reveal who <he was annoyed [by the fact that she was dating *t*]>

What is crucial is that the syntactic properties of (48b) are not totally identical to those of the antecedent in (48a). Specifically the verb *annoy* is in the active voice in the elided clause while it is in the passive voice in the antecedent. If an underlying source like (48b) is indeed available, limited syntactic identity is strongly supported, but she does not provide explicit evidence for this point.

Nakamura’s (2013) observation, which he uses to argue against Merchant’s (2008, 2013) analysis, offers an occasion to verify Chung’s (2013) remark. Since Nakamura’s observation involves so-called sloppy VP-ellipsis (Hardt 1999, Schwartz 2000; see Tomioka 2008 and references cited therein), let me introduce some background on this construction. A typical example of sloppy VP-ellipsis is given in (49), where the elided VP in (49B) can receive a “sloppy” interpretation. That is, the elided VP can be interpreted as *want to clean* although there is no such VP in (49).

(49) A: When John had to cook, he didn’t want to. <cook>

B: When he had to clean, he didn’t, either. <want to clean>

Tomioka (2008) argues that the availability of the sloppy interpretation ceases to be a problem once we can assume (i) that ellipsis resolution can be done in a step-by-step fashion and (ii) that ellipsis of a bigger constituent can ignore the result of ellipsis applied to a smaller constituent. To be more specific, VP-ellipsis is proposed to apply in the manner depicted in (50) so as to yield (49).

- (50) a. *Step 1: Ellipsis of [VPE cook], anteceded by [VPA cook]*
 when John had to [VPA cook], he didn’t want to [~~VPE-cook~~]
- b. *Step 2: Ellipsis of [VPE clean], anteceded by [VPA clean]*
 when he had to [VPA clean], he didn’t want to [~~VPE-clean~~], either

- c. *Step 3: Ellipsis of* [_{VP} *want to Δ*], *anteceded by* [_{VP} *want to Δ*]
 when John had to cook, he didn't [_{VP} *want to Δ*]

when he had to clean, he didn't [_{VP} ~~want to Δ~~], either

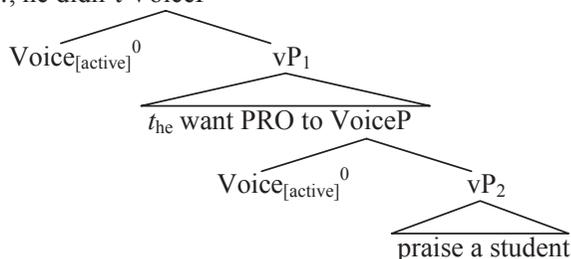
The first and the second steps in (50) are rather straightforward, where the elided VPs take an identical antecedent VPs. The third step in (50c) is crucial. At this step, what is elided is the VP of the form [_{VP} *want to Δ*], where Δ indicates that the material has been elided. There is an appropriate antecedent for this VP, which has been produced at the step in (50a). Although the actual contents of the Δ part in the elided VP and the Δ part in the antecedent are different (the former is [_{VP} *clean*] while the latter is [_{VP} *cook*]), they count as identical at the step in (50c), given Tomioka's (2008) second assumption. Hence ellipsis can be legitimate. In this way, the sloppy interpretation for the elided VP is made available despite the lack of the identical VP in the surface, since the underlying VP *want to clean* is elided via a step-by-step application of VP-ellipsis.

In the case of (49), there is no issue regarding voice mismatches. Nakamura (2013) observes that sloppy VP-ellipsis is possible in cases like (51). Then, analyzing the relevant parts in (51A) and (51B) as having structures like (52A) and (52B), respectively, Nakamura (2013) points out that the grammaticality of (51B) poses a problem to Merchant's (2008, 2013) analysis.²²

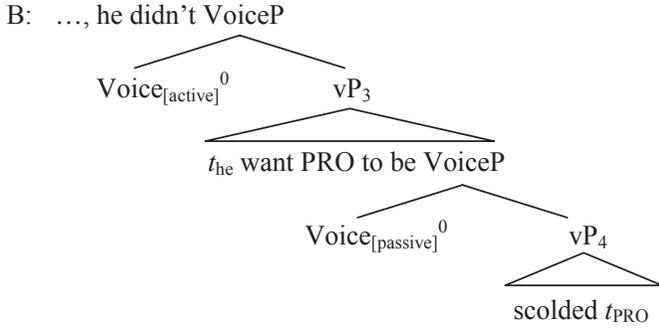
(51) A: When John had to praise a student, he didn't want to. <praise a student>

B: ? When John had to be scolded by a dean, he didn't, either. <want to be scolded by a dean>

(52) A: ..., he didn't VoiceP



²² According to Nakamura (2013:521), the “?” status of (51B) reflects the fact that seven out of ten informants judged it acceptable. Case-oriented syntactic identity cannot account for such a variation, especially the existence of the speakers who do not accept the example in question.



To derive the surface strings of (51), VP-ellipsis should apply in the manner depicted in (53).²³ At the steps in (53a) and (53b), VP-ellipsis targets vP₂ and vP₄, both of which can find an appropriate antecedent within the *when*-clauses, respectively. As a result of these steps, vP₁ and vP₃ come to contain the Δ parts, as in (53c).

- (53) a. *Step 1: Ellipsis of [vP_{2E} praise a student], anteceded by [vP_A praise a student]/ when John had to [VoiP Voi_[act.]⁰ [vP_A praise a student]],*
 he didn't [VoiP Voi_[act.]⁰ [vP₁ want to [VoiP Voi_[act.]⁰ [~~vP_{2E} praise a student~~]]]]
- b. *Step 2: Ellipsis of [vP_{4E} scolded by a dean], anteceded by [vP_A scolded by a dean]/ when John had to be [VoiP Voi_[pass.]⁰ [vP_A scolded by a dean]],*
 he didn't [VoiP Voi_[act.]⁰ [vP₃ want to be [VoiP Voi_[pass.]⁰ [~~vP_{4E} scolded by a dean~~]]]]
- c. *Step 3: Ellipsis of [vP_{3E} want to be [VoiP Voi_[pass.]⁰ Δ]], anteceded by [vP_{1A} want to [VoiP Voi_[act.]⁰ Δ]]*
 ..., he didn't [VoiP Voi_[act.]⁰ [vP_{1A} want to [VoiP Voi_[act.]⁰ Δ]]
 ..., he didn't [VoiP Voi_[act.]⁰ [~~vP_{3E} want to be [VoiP Voi_[pass.]⁰ Δ]]]]~~

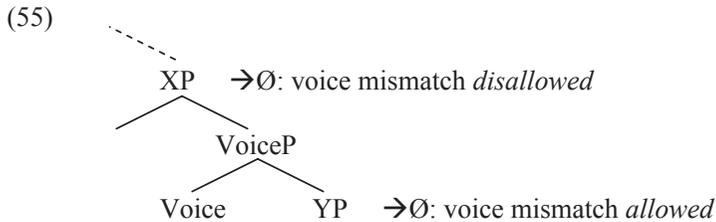
The grammaticality of (51B) indicates that ellipsis at the step (53c) is legitimate, where VP-ellipsis targets vP₃, taking the vP₁ as its antecedent. The difference regarding the actual contents of Δ should not cause any problem, just like the final step of the derivation in (50). There is a problem in (53c) which is absent from the step in (50c), however.

To see the problem more clearly, recall first how Merchant (2008, 2013) captures the contrast between sluicing/fragment answers and VP-ellipsis regarding voice mismatches. Under his analysis, the two vPs in (54), repeated from (22), are identical to each other, while the two TPs are not. This is because TP but not vP contains Voice⁰. Hence ellipsis of TP but not vP is sensitive to the distinction between [active] and [passive], giving rise to the contrast in question.

²³ The partial structures within *when*-clauses are added for the ease of exposition.

- (54) a. [TP someone_i [_{VoiceP} Voice_[active]⁰ [_{VP} t_i murdered Joe]]]
 b. [TP Joe_i was [_{VoiceP} Voice_[passive]⁰ [_{VP} Arg murdered t_i]]]

This analysis, however, does not have anything to do with the actual labels of the constituents to be elided, as emphasized by Merchant (2008, 2013). What matters is whether the constituent contains Voice⁰ or not. As shown in (55), adapted from Merchant (2013:89), ellipsis is sensitive to voice mismatches only if a constituent to be elided contains Voice⁰.



Returning now to the step in (53c), repeated as (56), ellipsis should be blocked under Merchant's (2008, 2013) analysis, as vP₁ contains Voice⁰ that is specified as [active], while vP₃ contains Voice⁰ with [passive].²⁴ That is, vP₃ in (56) corresponds to the XP in (55).

- (56) *Step 3: Ellipsis of* [_{vP3E} want to be [_{VoiP} Voi_[pass.]⁰ Δ]], *antedeceded by* [_{vP1A} want to [_{VoiP} Voi_[act.]⁰ Δ]]
 ..., he didn't [_{VoiP} Voi_[act.]⁰ [_{vP1A} want to [_{VoiP} Voi_[act.]⁰ Δ]]]
 ..., he didn't [_{VoiP} Voi_[act.]⁰ [_{vP3E} ~~want to be~~ [_{VoiP} ~~Voi~~_[pass.]⁰ Δ]]]

The grammaticality of (51B) is hence problematic for Merchant's (2008, 2013) analysis, as pointed out by Nakamura (2013).

The problem disappears under Case-oriented syntactic identity, however. Case-oriented syntactic identity is trivially satisfied since the Case-licensor for *he*, extracted from vP₃, is T and hence it is not contained in the ellipsis site. Then, what must be satisfied is semantic identity, and it can be satisfied in the same way as it is in the usual sloppy VP-ellipsis. In particular, each application of VP-ellipsis in (53) arguably satisfies semantic identity (as well as Case-oriented syntactic identity). Notice at the same time the configuration in (56) instantiates what Chung (2013) suggests with the examples in (48) at a certain level of abstraction. That is, the voice specifications of the lower constituent, embedded under *want to*, do not have to be identical in the ellipsis site and its antecedent. Thus, Case-oriented syntactic identity solves a problem of Merchant's (2008, 2013) analysis, embodying Chung's

²⁴ One might argue that the example in (51) can be analyzed in a way compatible with Merchant's (2008, 2013) analysis, hence the problem Nakamura (2013) raises can be avoided. See Nakamura (2013) for his attempt to exclude such alternative possibilities.

(2013) remark on the effect of limited syntactic identity in ellipsis with multiple predicates.²⁵

To summarize, this section has shown that Case-oriented syntactic identity offers a unified analysis of a wide range of facts, gaining a number of consequences with new light on various issues.

5. Conclusion

Building on Chung's (2013) idea of limited syntactic identity, this paper has argued that Case plays a crucial role in ellipsis. In particular, I have illustrated that simplifying Chung's (2013) formulation by abandoning the syntactic identity condition concerning argument structure as an independent condition and strengthening the condition concerning Case in fact allows us to treat various phenomena in a unified way. Although further investigations are clearly required, Case-oriented syntactic identity contributes to the study of ellipsis by clarifying what aspect of syntactic properties is relevant for ellipsis.

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²⁵ The case involving sloppy VP-ellipsis can verify Chung's (2013) remark only under Merchant's (2008, 2013) analysis of voice mismatches. Cases involving sluicing or fragment answers, rather than VP-ellipsis, with multiple predicates should also be examined in order to fully test the remark. I leave this important issue for future research.

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