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Abstract

There are two subtypes of sluicing, merger and sprouting. This paper investigates the structure of matrix sprouting in Japanese, which has not been studied in literature. The previous studies of matrix sluicing have looked at only merger-type sluicing and argue that matrix sluicing is derived differently from embedded sluicing in Japanese (Abe 2015; Hasegawa 2008). It has been argued that embedded sluicing is derived from cleft by CP-deletion, while matrix sluicing is derived by TP-deletion. However, this study shows that matrix sprouting is derived by cleft like embedded sluicing. In addition, I argue that even matrix merger should be analyzed under the cleft-based approach. Thus, I attempt to unify Japanese sluicing under the cleft-based approach. Furthermore, I argue that Japanese sprouting is derived by PF-deletion, not by LF-copying (Chung et al. 1995, 2010; Oku 1998; Saito 2007; Sakamoto 2017) based on the novel finding that the remnant *wh*-phrase in sluicing cannot drop its morphological case.

Sprouting: A Key to Unifying Japanese Sluicing

Yoshiki Fujiwara

1 Introduction

There are two subtypes of sluicing, merger and sprouting (Chung, Ladusaw, and McCloskey 1995). Merger has an overt correlate like *something* in the antecedent clause, as in (1), while sprouting does not, as in (2). (Throughout the paper, the overt correlate is underlined, and the remnant of sluicing is bolded.)

- (1) A: John-ga nanika-o tabeteru yo. B: **Nani-o?**
John-NOM something-ACC is.eating PRT what-ACC
'John is eating something.' 'What.'
- (2) a. A: John-ga tabeteru yo. B: **Nani-o?**
John-NOM is.eating PRT what-ACC
'John is eating.' 'What?'
- b. A: John-ga naiteru yo. B: **Doko-de?**
John-NOM is.crying PRT where-at
'John is crying.' 'Where?'
- c. A: John-wa *pro* wasureteru yo. B: **Nani-o?**
John-NOM is.forgetting PRT what-ACC
lit. 'John has forgotten *pro*.' 'What?'
- d. A: *pro* Kinenbi-o wasureteru yo. B: **Dare-ga?**
anniversary-ACC is.forgetting PRT who-NOM
lit. '*pro* has forgotten the anniversary.' 'Who?'

Since Japanese is a radical *pro*-drop language, speakers can omit arguments if they think that their information is already given, as in (2c/d-A). Sprouting like (2c/d-B) often occurs when the listener does not know what the null argument refers to. In the literature on Japanese sluicing, only merger has paid attention to, and roughly two kinds of deletion approaches have been proposed: cleft-based (i.e. CP-deletion) approach (Fukaya and Hoji 1999; Hiraiwa and Ishihara 2012; Kizu 2005; Kuwabara 1996; Saito 2004) and TP-deletion approach (Takahashi 1994; Takita 2009; Hasegawa 2008; Abe 2015). The previous studies of matrix merger claim that matrix merger is derived by TP-deletion although they agree with the cleft-based approach to embedded merger (Hasegawa 2008; Abe 2015). This means that there are two ways to derive Japanese sluicing, by CP-deletion and by TP-deletion.

This study investigates the structure of matrix sprouting like (2) and claims that matrix sprouting is derived from cleft through CP-deletion in the same way as embedded merger. In addition, I point out that even matrix merger should not be analyzed as involving TP-deletion. This suggests that two kinds of deletion approaches are not necessary to account for sluicing in Japanese, which is desirable from the perspective of language acquisition. Furthermore, I argue that Japanese sprouting is derived by PF-deletion, not by LF-copying (Chung, Ladusaw, and McCloskey 1995; 2011; Oku 1998; Saito 2007; Sakamoto 2017) based on the novel finding that the remnant phrase in sprouting cannot drop its morphological case.

2 Previous studies

A cleft-based approach was proposed in the literature (Hiraiwa and Ishihara 2012; Kizu 2005; Kuwabara 1996; Saito 2004) though only for embedded merger such as (3).

- (3) John-ga nanika-o tabeta rasio kedo, [_{CP} **nani-o** (da) ka] siranai.
 John-NOM something-ACC ate seem but what-ACC COP Q not.know
 ‘It seems that John ate something, but (I) don’t know **what**.’

Under the cleft-based approach, sluicing is analyzed as underlying cleft constructions (Fukaya and Hoji 1999; Hiraiwa and Ishihara 2012; Kizu 2005; Kuwabara 1996; Saito 2004). Following Hiraiwa and Ishihara (2002, 2012) and Nakao (2009), I further assume that Japanese cleft constructions are derived from in-situ focus constructions. The full derivation of embedded merger under the cleft-based approach is given in (4). In (4a), an in-situ focus construction is embedded under a main verb. Following Hiraiwa and Ishihara (2002) and Saito (2012), I assume that *no* occupies the Fin position, copula is a Foc head, and the Q-particle *ka* a Force head. In (4b), the *wh*-phrase is extracted out of the FinP and undergoes movement to Spec,FocP. In (4c), the remnant FinP moves to Spec,TopP and the embedded sentence forms a cleft construction. In (4d), the remnant FinP gets elided, and the sentence forms embedded merger such as (3).

- (4) Cleft-based approach:
- a. embedded in-situ focus construction:
 [_{ForceP} [_{TopP} [_{FocP} [_{FinP} John-ga **nani-o_i** tabeta no] (da)]] ka] siranai.
 John-NOM what-ACC ate Fin COP Q not.know
 lit. ‘I don’t know [John ate **what**].’
- b. Focus movement:
 [_{ForceP} [_{TopP} [_{FocP} **nani-o_i** [_{FinP} John-ga *t_i* tabeta no] (da)]] ka] siranai.
 what-ACC John-NOM ate Fin COP Q not.know
- c. Remnant FinP movement to Spec,TopP = embedded cleft:
 [_{ForceP} [_{TopP} [_{FinP} John-ga *t_i* tabeta no]-ga [_{Top'} [_{FocP} **nani-o_i** *t_{FinP}* (da)]]] ka]
 John-NOM ate Fin-NOM what-ACC COP Q
 siranai.
 not.know
 ‘I don’t know [**what** it is [that John ate]].’
- d. Deletion of the presupposed FinP = embedded merger:
 [_{ForceP} [_{TopP} [~~_{FinP} John-ga *t_i* tabeta no~~]-ga [_{Top'} [_{FocP} **nani-o_i** *t_{FinP}* (da)]]] ka]
 John-NOM ate Fin-NOM what-ACC COP Q
 siranai. (cf. 3)
 not.know
 ‘I don’t know [**what** it is [~~that John ate~~]].’

This approach can explain the optionality of copula in embedded merger (3) because it is also optional in in-situ focus constructions and clefts, as in (4a) and (4c), respectively. Since the focus of clefts is originally extracted out of the presupposed FinP, it induces an island effect both in clefts and embedded merger (Hoji 1987; Takahashi 1994; Kuwabara 1997; Hiraiwa and Ishihara 2002). In (5a), the correlate *nanika* is embedded in an adjunct clause, and embedded merger induces an island effect. Note that when it is placed in a non-island clause as in (5b), embedded merger is allowed.

- (5) a. *_[AdjCl] Taro-ga nanika-o wasureteru kara] Hanako-ga okotteru
 Taro-NOM something-ACC is.forgetting because Hanako-NOM is.angry
 rasio kedo, boku-wa [_{CP} **nani-o** (da) ka] wakaranai.
 seem but I-TOP what-ACC COP Q not.know
 ‘It seems that Hanako is angry because Taro has forgotten something, but I don’t know **what**.’
- b. Hanako-ga [_{CP} Taro-ga nanika-o wasureteru to] itteita kedo,
 Hanako-NOM Taro-NOM something-ACC is.forgetting C was.saying but
 boku-wa [_{CP} **nani-o** (da) ka] siranai.
 I-TOP what-ACC COP Q not.know
 ‘Hanako said that Taro has forgotten something, but I don’t know **what**.’

(6) illustrates the island sensitivity of clefts (Hoji 1987; Kuwabara 1997; Hiraiwa and Ishihara 2002). In (6a), the pivot of the cleft is extracted out of an adjunct clause, which induces an island effect.

- (6) a. *[_{FinP} [_{AdjCl} Taro-ga t_i wasureteru kara] Hanako-ga okotteru no]-wa
 Taro-NOM is.forgetting because Hanako-NOM is.angry Fin-TOP
 kinenbi-o_i da.
 anniversary-ACC COP
 lit. ‘It is **an anniversary** that Hanako is angry because Taro has forgotten t.’
- b. [_{FinP} Hanako-ga [_{CP} Taro-ga t_i wasureteru to] itteita no]-wa
 Hanako-NOM Taro-NOM is.forgetting C was.saying Fin-TOP
 kinenbi-o_i da.
 anniversary-ACC COP
 lit. ‘It is **an anniversary** that Hanako said that Taro has forgotten t.’

However, it has been observed that matrix merger is not sensitive to islands, as shown in (7) (Hasegawa 2008; Abe 2015).¹ Based on this, it is claimed that matrix merger is derived differently from embedded merger.

- (7) A: [_{AdjCl} Taro-ga nanika-o wasureteru kara] Hanako-ga okotteru
 Taro-NOM something-ACC is.forgetting because Hanako-NOM is.angry
 rasii yo. B: **Nani-o** (daroo ne)?
 seem PRT what-ACC MOD TAG
 ‘A: It seems that Hanako is angry because Taro has forgotten something.
 B: (I wonder) **What?**’

Two analyses have been pursued regarding the island-insensitivity of matrix merger. Hasegawa (2008) proposes that Japanese matrix merger is derived from *wh*-movement and TP-deletion just like English sluicing, as in (8) (see also Takahashi 1994 and Takita 2009).

- (8) TP-deletion + *wh*-movement:
 [_{CP} **What_i** [_{TP} ~~Hanako [_{AdjCl} Taro t_i has forgotten because] angry~~] C_Q]

She argues that the island-insensitivity of matrix merger is expected under this analysis since English sluicing does not exhibit island-sensitivity either, as illustrated in (9) (Ross 1969; Merchant 2001).

- (9) They want to hire someone who speaks a Balkan language, but I don’t remember which
 (*they want to hire someone who speaks).

The idea here is that whatever the explanation for (9), the same explanation should be able to be applied to Japanese matrix merger since Japanese matrix merger has the same derivation as English sluicing.

Abe (2015), on the other hand, pursues the in-situ deletion analysis in (10), where TP undergoes deletion except for the remnant *wh*-phrase, which carries a focus feature. It is assumed under this analysis that a focus element can survive from deletion without movement. The island-insensitivity of matrix merger is straightforwardly accounted for under this analysis because a remnant *wh*-phrase does not move out of the adjunct island.

¹In (7B), I use a modal *daroo* and a particle *ne* to make the conversation more natural. In Japanese, the use of indefinite pronouns such as *nanika* presupposes that the speaker does not know the referent of the indefinites, unlike English indefinite pronouns such as *something* (Goro 2007, 32). Thus, it is not natural to directly ask what the indefinite pronoun in (7A) refers to. In this sense, the question in (1B) is not natural either because it directly asks what the indefinite pronoun in (1A) refers to. In (7B), the directivity of the question is mitigated by using the modal and particle, and the question is interpreted as “I wonder what.” What is important here is that the question in (7B) still behaves as matrix clause even though it is translated as “I wonder what.”

(10) in-situ deletion analysis:

[_{CP} [_{TP} Hanako [_{AdjC} Taro WHAT_[FOC] has forgotten — because] angry] C₀]

What these analyses are in common is that they apply TP-deletion to canonical sentences (i.e. non-clefts).

3 Sprouting

In this section, I show that the TP-deletion approach cannot be applied to matrix sprouting and argue that sprouting is derived from clefts like embedded merger. In addition, I show that even matrix merger cannot be analyzed under the TP-deletion approach. The first piece of evidence that matrix sprouting and merger underly a cleft structure is that copula can appear in them. (11) and (12) illustrate this point in sprouting and merger, respectively.²

- (11) A: John-ga tabeteru yo. B: **Nani-o** des-u ka?
 John-NOM is.eating PRT what-ACC COP.POLITE-PRES Q
 ‘John is eating.’ ‘**What?**’
- (12) A: John-ga nanika-o tabeteru rasii. B: **Nani-o** des-yoo ne?
 John-NOM something-ACC is.eating seem what-ACC COP.POLITE-MOD TAG
 ‘I hear that John is eating something.’ ‘I wonder **What?**’

If matrix sluicing underlies a non-cleft sentence as assumed under the TP-deletion approach, the existence of copula cannot be accounted for. On the other hand, the cleft-based approach straightforwardly captures the optionality of copula in matrix sluicing because copula is also optional in cleft sentences. (13) illustrates this point with a matrix cleft sentence.

- (13) [_{FinP} John-ga _{t_i} tabeta no]-wa **ringo-o** **mit-tsu**_i (da/desu).
 John-NOM ate Fin-TOP apple-ACC three-CL COP/COP.POLITE
 ‘It is **three apples** that John ate.’

In addition, both subtypes of sluicing disallow the NPI *-sika* as a remnant. (14) illustrates this with sprouting, and (15) with merger.

- (14) A: John-wa awanakatta yo. B: ***Dare-ni-sika?**
 John-TOP not.met PRT who-DAT-NPI
 lit. ‘John didn’t meet.’ ‘**Except who?**’
- (15) A: John-wa dareka-ni-sika awanakatta yo. B: ***Dare-ni-sika** (daroo ne)?
 John-TOP someone-DAT-NPI not.met PRT who-DAT-NPI MOD TAG
 ‘John didn’t meet anybody except someone.’ ‘(I wonder) **Except who?**’

This is consistent with the cleft-based approach since the NPI *-sika* cannot appear in the pivot of cleft sentences either, as in (16) (cf. Hiraiwa and Ishihara 2012).

²One may wonder why the Q-particle *ka* is optional in matrix sluicing, as in (11-12), but obligatory in embedded merger, as in (3). This is not relevant to Japanese sluicing. In general, the Q-particle *ka* is optional in matrix questions, while it is obligatory in embedded questions. See Miyagawa (1987, 2012) for his analysis of the distribution of the Q-particle *ka*. One may also wonder why I use the polite copula *desu* in matrix sluicing and the non-polite copula *da* in embedded sluicing. This difference is not relevant to sluicing either. In brief, the polite copula cannot appear in embedded clauses, and the non-polite copula is not natural in matrix questions.

- (16) *_[FinP] John-ga t_i awanakatta no]-wa **Mary-ni-sika_i** da.
 John-NOM not.met Fin-TOP Mary-DAT-NPI COP
 lit. ‘It is [**except Mary**]_i that John didn’t meet anybody t_i .’

This is, however, problematic for the TP-deletion approach since a *wh*-phrase with the NPI *-sika* can appear in non-cleft sentences like (17) regardless of whether it undergoes movement or not.

- (17) {**Dare-ni-sika**} John-wa {**dare-ni-sika**} awanakatta no?
 who-DAT-NPI John-TOP who-DAT-NPI not.met C
 lit. ‘John didn’t meet anybody **except who**?’

Therefore, sprouting and even merger are better analyzed as underlying clefts.

As expected under the cleft-based approach, sprouting exhibits island-sensitivity in contrast to matrix merger. Compare sprouting in (18) with merger in (19). Although (19B) is acceptable, (18B) is not. The deviance of (18B) shows that the remnant of sprouting cannot be extracted out of an adjunct island. Note that the whole adjunct clause can be a remnant in sprouting, as in (18B’). This is because the whole adjunct clause can be placed in the pivot of cleft, as shown in (20).

- (18) A: [_{AdjCl} *pro* kinenbi-o wasureteru kara] Hanako-ga okotteru rasii yo.
 anniv.-ACC is.forgetting because Hanako-NOM is.angry seem PRT
 lit. ‘I hear that Hanako is angry because *pro* has forgotten an anniversary.’
 B: ***Dare-ga**?
 who-NOM
 ‘**Who**?’
 B’: [_{AdjCl} **Dare-ga** kinenbi-o wasureteru kara]?
 who-NOM anniv.-ACC is.forgetting because
 lit. ‘Because **who** has forgotten an anniversary?’
- (19) A: [_{AdjCl} Dareka-ga kinenbi-o wasureteru kara] Hanako-ga okotteru
 someone-NOM anniv.-ACC is.forgetting because Hanako-NOM is.angry
 rasii yo.
 seem PRT
 lit. ‘I hear that Hanako is angry because someone has forgotten an anniversary.’
 B: **Dare-ga** (daroo ne)?
 who-NOM MOD TAG
 ‘(I wonder) **Who**?’
- (20) [_{FinP} Hanako-ga okotteru no]-wa [_{AdjCl} **Dare-ga** kinenbi-o wasureteru kara]?
 Hanako-NOM is.angry Fin-TOP who-NOM anniv.-ACC is.forgetting because
 lit. ‘It is [because **who** has forgotten an anniversary] that Hanako is angry?’

The following examples illustrate the same point with relative clauses. In sprouting, the *wh*-phrase cannot be a remnant by itself, as in (21B), whereas it can in merger, as shown in (22B). Note that the whole relative clause that contains the *wh*-phrase can be a remnant in sprouting, as in (21B’). Its cleft counterpart is given in (23).

- (21) A: Syatyoo-wa [[_{RC} *pro* teiansita] gakusei]-o saiyoucita rasii yo.
 president-TOP proposed plan-ACC recruited seem PRT
 lit. ‘I hear that the president recruited a student who proposed *pro*.’
 B: ***Nani-o**?
 what-ACC
 ‘**What**?’
 B’: [[_{RC} **Nani-o** teiansita] gakusei]-o?
 what-acc proposed student-ACC
 lit. ‘A student who proposed **what**?’
- (22) A: Syatyoo-wa [[_{RC} nanika-o teiansita] gakusei]-o saiyoucita rasii yo.
 president-TOP something-ACC proposed student-ACC recruited seem PRT
 ‘I hear that the president recruited a student who proposed something.’

B: **Nani-o** (daroo ne)?
 what-ACC MOD TAG
 ‘(I wonder) **What?**’

- (23) A: [_{FinP} Syatyoo-ga *t*_i saiyousita no]-wa [[_{RC} **nani-o** teiansita] gakusei]-o?
 president-NOM recruited Fin-TOP what-ACC proposed plan-ACC
 lit. ‘It is [a student who proposed **what**] that the president recruited *t*.’

Thus, sprouting exhibits island-sensitivity as expected under the cleft-based approach, whereas matrix merger does not. Then, the question is why the *wh*-remnant in matrix merger is insensitive to islands.

Before addressing this question, let’s see another difference between sprouting and merger. As shown in (24) and (25), sprouting cannot drop a morphological case of the remnant, whereas matrix merger can. (24B) does not mean ‘what is he eating?’ but means something like ‘what did you say?’ or ‘so, what?’³ On the other hand, the remnant of merger in (25B) can be interpreted as an object of the verb *eat* even when its morphological case is dropped.

- (24) A: John-ga tabeteru rasii yo. B: ***Nani?**
 John-NOM is.eating seem PRT what
 ‘I hear that John is eating.’ int. ‘**What** (is he eating)?’
- (25) A: John-ga nanika-o tabeteru rasii yo. B: **Nani** (daroo ne)?
 John-NOM something-ACC is.eating seem PRT what MOD TAG
 ‘I hear that John is eating something.’ int. ‘(I wonder) **What?**’

Given the island-insensitivity and the possibility of case-drop in matrix merger, I argue that the remnant *wh*-phrase in matrix merger can be a predicate of copula constructions, as in (26).

- (26) *pro* **dare(-ga)/nani(-o)?**
 who-nom/what-acc
 lit. ‘**who/what** is *pro*?’

In (26), a null pronoun occupies the subject position and it refers to the overt correlate such as “*dareka*” and “*nanika*” in A’s utterance. Thus, its overt counterpart is something like (27).

- (27) a. “*Dareka*”-*tte* **dare(-ga)?**
 someone-top who-nom
 lit. ‘Who is “someone”?’
 b. “*Nanika*”-*tte* **nani(-o)?**
 something-top what-acc
 lit. ‘What is “something”?’

If a copula construction such as (26) can be an underlying structure of matrix merger, the apparent island-insensitivity of matrix merger is straightforwardly accounted for. The *wh*-remnant is a predicate of the copula construction and does not move. However, a copula construction like (26) cannot be an underlying structure of sprouting since when there is no overt correlate in A’s utterance *pro* ends up being unspecified.

4 PF-deletion vs. LF-copy

³As we will see in (30b), a morphological case of an in-situ *wh*-phrase can be dropped in a canonical sentence. Given that, the impossibility of case-drop in sprouting goes against Abe’s in-situ deletion approach to matrix sluicing. If TP can undergo deletion except for the in-situ *wh*-phrase, the *wh*-remnant in in-situ should be able to drop its morphological case.

In this section, I will address a question of whether ellipsis in sluicing involves PF-deletion (Ross 1969; Merchant 2001, a.o) or LF-copying (Chung et al. 1995, 2010, a.o). Particularly interesting in this regard is the fact that case-drop is disallowed in sprouting, as we have seen in (24). (28) illustrates the same point with different data.

- (28) A: *pro* Otita yo. B: Nani*(-ga)?
 fell PRT what-NOM
 ‘*pro* fell.’ int. ‘What fell?’

Interestingly, it has been argued that a morphological case-marker is also required in ‘true’ embedded merger, which involves ellipsis (Takahashi 1994; Fukaya and Hoji 1999; Hiraiwa and Ishihara 2002, 2012). In other words, embedded merger whose remnant is case-marked has been analyzed as involving ellipsis, whereas embedded merger whose remnant is caseless has been considered as ‘pseudo’-sluicing, which underlies a copula sentence with a null subject. Given these observations, we are then led to the following generalization:

- (29) The remnant of ‘true’ sluicing in Japanese must be morphologically case-marked.

I argue that this generalization supports the PF-deletion approach to ellipsis. It is well-known since Saito (1983) that the same constraint applies to overtly moved items. (30) shows that if the *wh*-phrase moves, its case cannot be dropped, whereas if it stays in situ, it can be.

- (30) a. Nani*(-o)_i John-wa *t*_i tabe-masi-ta ka?
 what-ACC John-TOP eat-POLITE-PAST Q
 ‘What did John eat?’
 b. John-wa nani(-o) tabe-masi-ta ka?
 John-TOP what-ACC eat-POLITE-PAST Q
 lit. ‘John ate what?’

To put Saito’s (2014) account briefly, NPs with case can move without labeling problems pointed out by Chomsky (2013), while NPs without case induces one of the problems. Thus, he attributes the unacceptability of (30a) to a general constraint on movement. Under the PF-deletion approach, the *wh*-remnant in sluicing has moved out of the presupposed FinP to Spec,FocP in overt syntax (cf. 4b) so that it is possible to attribute the impossibility of case-drop in ‘true’ sluicing to the general constraint on overt movement, as in Saito’s analysis.⁴

On the other hand, under the LF-copy approach, it is difficult to explain the impossibility of case-drop in ‘true’ sluicing. The derivation of sluicing under the LF-copy approach is given in (31).⁵ The *wh*-remnant is base-generated and there is no relevant internal structure in the ellipsis site in overt syntax, as in (31a). Thus, we cannot attribute (29) to the general constraint on overt movement, as in Saito’s approach. Under this approach, the elided clause is copied from an antecedent clause at LF, as shown in (31b), and the *wh*-remnant undergoes reconstruction into its theta position, as shown in (31c).

- (31) a. Overt Syntax: [_{CP} what_{acc}]
 b. LF: [_{CP} what_{acc} [_{CP} John is eating]] (LF-copy)
 c. LF: [_{CP} what_{acc} [_{CP} John is eating what_{acc}]] (reconstruction)
 c’. LF: * [_{CP} what [_{CP} John is eating what]] (reconstruction)

⁴Although there are cleft constructions whose pivot is not case-marked, they are analyzed differently from case-marked clefts discussed in this paper (Hoji 1987; Kuwabara 1997; Hiraiwa and Ishihara 2002). The former is analyzed as ‘pseudo’-cleft, which does not involve movement of the pivot. In other words, a case-marker is required for the pivot to undergo movement to Spec,FocP. Thus, focus movement in cleft constructions also obeys Saito’s (1983) general constraint on overt movement.

⁵In (31), the derivation under the cleft-based approach is not used for ease of exposition. The main claim here that the LF-copy approach is difficult to capture (29) is not undermined by this.

In order to account for (29) under the LF copy approach, one would have to assume that reconstruction at LF cannot be applied to a noun without case, as in (31c'). In other words, the LF operation (i.e. reconstruction) must be sensitive to the presence/absence of case markers, which is, however, undesirable given that morphological cases such as *-o* are semantically vacuous. Therefore, the impossibility of case-drop in 'true' sluicing favors the PF-deletion approach over the LF-copy approach.

5 Conclusion

The current study has investigated sprouting in Japanese and shown that it is derived from clefts by CP-deletion like embedded merger. I have provided three pieces of evidence that sprouting underlies cleft constructions. First, copula can appear in sprouting, which would not happen if the underlying construction of sprouting is just a canonical sentence. Second, the NPI *-sika*, which cannot be placed in the pivot of clefts, cannot be a remnant in sprouting. Third, sprouting exhibits island sensitivity like clefts. In addition, I have argued that matrix merger should also be analyzed under the cleft-based approach although the previous studies of matrix merger pursue the TP-deletion approach. My argument was based on the fact that even in matrix merger, copula is optional, and the NPI-*sika* is disallowed as the remnant. Regarding the apparent island-insensitivity of matrix merger, I have pointed out that matrix merger can avoid island-violation with a copula structure. Thus, the current study suggests that the TP-deletion approach is not necessary to account for matrix sluicing in Japanese. In other words, sluicing in Japanese can be unified under the cleft-based approach.

Under the cleft-based approach, sluicing in Japanese involves CP-deletion, not TP-deletion. This is a desirable result given that it has been independently shown that argument ellipsis, an ellipsis process which targets arguments and is allowed in Japanese (Oku 1998; Saito 2007), can target CPs (Shinohara 2006). In (32b), the clausal complement gets elided taking (32a) as an antecedent.

- (32) a. John-wa [CP zibun-no ronbun-ga jaanaru-ni no-tta to] itta.
 John-TOP self-GEN paper-NOM journal-DAT appear-PAST C said
 'John said that his journal appeared in a journal.'
- b. Bill-wa _____ iwanakatta.
 Bill-top not.said
 'Bill₂ didn't said that his_{1/2} paper appeared in a journal.'

Moreover, in Fujiwara (to appear), I argue that elements affected by argument ellipsis first undergo movement to the matrix Spec,CP (i.e. Spec,TopP under the split C system) before they get elided. This is also consistent with the cleft-based approach since the elided CP in sluicing also first undergoes movement to Spec,TopP. Thus, the cleft approach opens the possibility to unify sluicing with argument ellipsis (Saito 2004).

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