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Extraction out of Ellipsis in Japanese[†]

Ryota Nakanishi

1. Introduction

This paper aims to give a full account to extraction out of ellipsis site in Japanese under a PF-deletion approach. The relevant phenomenon is illustrated in the following example:

- (1) *Hon-o_i Taroo-wa [CP Hanako-ga t_i kat-ta to] it-ta ga,
book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST though
zassi-o_j Ziroo-wa Δ it-ta.
magazine-ACC Ziro-TOP say-PAST

‘Taro said that Hanako bought a book, but Ziro said that she bought a magazine.’

(Saito 2007: 210)

This phenomenon has acquired much attention recently since, although Scrambling and Argument Ellipsis are independently attested in Japanese (e.g. Saito 1985 for Scrambling; Oku 1998 for Argument Ellipsis), the combination of them suddenly turns into unacceptability. Considering the fact that unacceptability does not result when either Scrambling or Argument Ellipsis is applied, the key is expected to lie in the interaction of them, which we will investigate as a main goal.

This paper is organized as follows: Section 2 will set up the stage to observe the relevant data like (1), and examine Shinohara’s (2006) and Saito’s (2007) analyses. After introducing the previous studies, it will be pointed out that they encounter a potential problem. Section 4 will explore a new analysis and offer three proposals under a PF-deletion approach to accommodate the full data. In Section 5, an alternative account with *soo* phrases will be considered to show a chance of analysis under an LF-copying approach. Nevertheless, it will be shown that *soo* phrases are best analyzed under a PF-deletion approach, as Sakamoto (2016) argues. Section 6 will conclude this paper.

2. Previous Studies and Their Potential Problems

In this section, I present examples of extraction out of ellipsis in Japanese and overview what analysis has been proposed in the literature, specifically Shinohara (2006) and Saito (2007). Then I point out their potential problems, which will be accounted for later in this paper.

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¹ Note that in addition to this approach, there is a slightly different approach for the implementation of

2.1. Scrambling + Argument Ellipsis = Unacceptability

Before discussing the main phenomenon, we first consider two basic properties observed in Japanese. It has been well known in the literature that Japanese has Scrambling (Saito 1985, many others). Scrambling is exemplified in the following, where two types of scrambling, short- and long-distance, are allowed in Japanese:

- (2) a. Hon- o_i Hanako-ga t_i kat-ta.
 book-ACC Hanako-NOM buy-PAST
 ‘Hanako bought a book.’
- b. Hon- o_i Taroo-ga [Hanako-ga t_i kat-ta to] it-ta.
 book-ACC Taro-NOM Hanako-NOM buy-PAST that say-PAST
 ‘Taro said that Hanako bought a book.’

Another property that Japanese has is that arguments such as subjects and objects can be null relatively freely (e.g. Oku 1998, Kim 1999). This has been referred to as Argument Ellipsis, and complement CPs as objects of verbs such as *omou* ‘think’ and *iu* ‘say’ also can be null, as in (3).

- (3) Hanako-wa [_{CP} zibun-no teian-ga saiyooos-are-ru to] omottei-ru.
 Hanako-TOP self-GEN proposal-NOM accept-PASS-PRES that think-PRES
 ga, Taroo-wa Δ omottei-na-i.
 though Taro-TOP think-not-PRES
 ‘Hanako thinks that her proposal will be accepted, but...’
- (i) Taro doesn’t think that **her** proposal will be accepted.’ (strict reading)
 (ii) Taro doesn’t think that **his** proposal will be accepted.’ (sloppy reading)

Note that the second sentence in (3) has a sloppy reading as well as a strict one. Given that the availability of a sloppy reading is a diagnostic of Ellipsis, (3) counts as an instance of Ellipsis. Thus these data show that Scrambling and Argument Ellipsis can be applied independently.

However, when they both come together in one sentence, an unexpected result comes about. Witness the following examples:

- (4) a. *Hon- o_i Taroo-wa [_{CP} Hanako-ga t_i kat-ta to] it-ta ga,
 book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST though
 zassi- o_j Ziroo-wa Δ it-ta.
 magazine-ACC Ziro-TOP say-PAST
 ‘Taro said that Hanako bought a book, but Ziro said that she bought a magazine.’
- b. *Sono hon- o_i Taroo-wa [_{CP} Hanako-ga t_i kat-ta to] it-ta si,
 that book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST and
 sono hon- o_j Ziroo-mo Δ it-ta.
 that book-ACC Ziro-also say-PAST
 ‘Taro said that Hanako bought that book, and Ziro also said that Hanako bought it.’

(Saito 2007: 210, 211)

Here *zassi-o* ‘magazine-ACC’ and *sono hon-o* ‘that book-ACC’ are scrambled out of the embedded CPs and simultaneously these CPs are elided, resulting in unacceptability. If Scrambling and Argument Ellipsis are independently allowed in Japanese, then the combination of them would also be allowed, contrary to the fact. This drives Shinohara (2006) and Saito (2007) to analyze the unacceptability in terms of LF-copying for ellipsis, which will be overviewed in the next subsection.

2.2. LF-copying Approach for Ellipsis in Japanese

Building on Shinohara’s (2006) work, Saito (2007) argues that Japanese utilizes LF-copying for ellipsis and the property of Scrambling, i.e., total reconstruction, degrades such sentences as (4).

An LF-copying approach for ellipsis is summarized as follows: after an antecedent sentence is built at syntax and sent to PF and LF, a derivation of a target sentence starts and reaches an intermediate stage. At this point, LF objects of the antecedent sentence are available for the derivation of the target sentence since they have already been sent to LF. Then, the derivation proceeds further through copying and merging an LF object at syntax, and is sent to PF and LF. Note here that the copied element is an LF object, thus not having phonetic content at all, it is not pronounced at PF. On the other hand, since it has semantic content, it is interpreted appropriately at LF. Therefore, the whole sentence does not cause any problem at both sides of interfaces.¹

As for total reconstruction as a property that Scrambling has, consider (5).

- (5) *Dono hon-o_i Taroo-ga [CP [TP Hanako-ga t_i yon-da] ka]*
which book-ACC Taro-NOM Hanako-NOM read-PAST Q
siritagattei-ru (koto)
want.to.know-PRES fact

‘(the fact that) Taro wants to know which book Hanako read’ (Saito 2007: 212)

Given that *wh*-phrases should be in the domain of interrogative sentences, or Q, the sentence in (5) would be ungrammatical, which is contrary to this expectation. This shows that the scrambled phrase *dono hon-o* ‘which book-ACC’ is forced to go back covertly to its original position, as in (5), and is interpreted there, giving rise to no ungrammaticality.

Armed with these arguments, now let us consider Saito’s account for the relevant unacceptable sentence in (4a). The antecedent and target sentences have the following LF representations, respectively:

¹ Note that in addition to this approach, there is a slightly different approach for the implementation of LF-copying. Instead of copying LF objects into syntax, a null element is introduced into a derivation at the beginning, and at LF it is replaced with an appropriate LF object. Although it is not explicitly stated which approach Saito (2007) assumes, whichever implementation does not hinge on the discussion in this paper.

- (6) a. Taroo-wa [_{CP} Hanako-ga hon-o kat-ta to] it-ta ga,
 Taro-TOP Hanako-NOM book-ACC buy-PAST that say-PAST though
- b. *zassi-o Ziroo-wa [_{CP} Hanako-ga hon-o kat-ta to] it-ta.
 magazine-ACC Ziro-TOP Hanako-NOM book-ACC buy-PAST that say-PAST

Because of total reconstruction, the scrambled phrase *hon-o* ‘book-ACC’ in (6a) is forced to go back to its original position inside the embedded CP, and then this CP is LF-copied into the target sentence. However, the representation in (6b) is illicit since the scrambled phrase *zassi-o* ‘magazine-ACC’ cannot be interpreted correctly, thus only yielding a strange meaning ‘A magazine, Ziro said that Hanako bought a book.’ The same account is given to (4b).

To summarize, following Shinohara (2006), Saito (2007) claims that unacceptability of extraction out of ellipsis in Japanese can be reduced to the two properties that Japanese has: total reconstruction and LF-copying for ellipsis.

3. Potential Problem for Saito (2007)

In the previous section, we have outlined Saito’s (2007) analysis and why extraction out of ellipsis is impossible. Although his analysis seems to nicely capture the phenomenon, there are some factors which ameliorates the acceptability of extraction out of ellipsis. Observe the contrast in (7).

- (7) a. *Hon-o_i Taroo-wa [Hanako-ga t_i kat-ta to] it-ta ga,
 book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST though
zassi-o_j Ziroo-ga Δ it-ta. (= (4))
 magazine-ACC Ziro-NOM say-PAST
 ‘Taro said that Hanako bought a book, but Ziro said that she bought a magazine.’
- b. Hon-o_i Taroo-wa [Hanako-ga t_i kat-ta to] it-ta ga,
 book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST though
zassi-wa_j Ziroo-ga Δ it-ta.
 magazine-TOP Ziro-NOM say-PAST
 ‘Taro said that Hanako bought a book, but Ziro said that she bought a magazine.’

(Goto 2011: 18, 23; see also Tanaka 2008)

When a scrambled element comes with a topic marker *-wa* as in (7b), the whole sentence becomes acceptable; otherwise unacceptable as in (7a).² Thus topicalization can rescue the acceptability. These data are a potential problem for Saito’s analysis since he attributes the relevant unacceptability only to total reconstruction and LF-copying; in other words, it is predicted that scrambled elements always cannot be interpreted appropriately if we have Argument Ellipsis

² There are some Japanese speakers who judge the sentences in (7b) as marginal. However, it should be noted that still for those speakers, they find contrast to some degree between (7a) and (7b), which we regard crucial in this paper.

simultaneously. Given the contrast in (7), in a sense, his analysis is too strong; put differently, (7b) would be never generated under his analysis, which is contrary to the fact. Therefore, it cannot fully accommodate examples like (7).

4. Proposals and Analysis

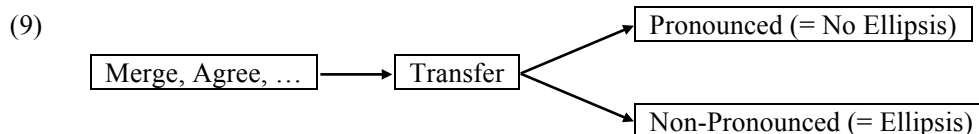
This section deals with the (un)acceptability in (7) and suggests with some proposals that extraction out of ellipsis in Japanese should be accounted for under PF-deletion approach, not LF-copying approach.

In exploring a new analysis, we offer the following three proposals. First, we propose that Japanese makes a full use of a PF-deletion approach for ellipsis, not an LF-copying approach. This means that both antecedent and targets sentences have full-fledged structures and some parts of target sentences can be elided under identity. In this connection, we propose the following:

(8) *Pronounceability Determination by Transfer*

Transfer can determine pronounceability of syntactic objects in each domain.

(8) states that whether a certain syntactic object is pronounced or not is determined on Transfer. If an antecedent is available, all of syntactic objects in a certain domain of Transfer can be non-pronounced. This mechanism is schematized as in (9).



The second proposal is that the domain of Transfer is extended more than that of traditional Transfer. “Traditional” Transfer here refers to the one assumed in Chomsky (2000, 2001), where only complements of phase heads are sent to the interfaces. Given that v and C are phase heads, however, under this theory elements at the topmost edges should remain untransferred, which is not a preferable result for the theory. Then, resolving this shortcoming, we extend the domain of Transfer more than traditionally assumed and formally propose the following (cf. Nakanishi 2015):

(10) *Extended Transfer*

Applied to syntactic objects, every immediate member of a phase is transferred to interfaces.

(10) roughly states that after all operations are completed at a phase level, all elements included in that phase are transferred except adjuncts, which are available for subsequent derivations.

The final, but not least, proposal is as follows:

(11) Scrambling is a PF-copying operation.

Parallel to LF-copying assumed in Shinohara (2006) and Saito (2007), (11) states that Scrambling equals to copying objects at PF, thereby PF objects can be recycled at syntax. Since PF objects do not have semantic features at all, PF-copying does not affect semantic interpretation. This is essentially what we have tried to capture by the term “total reconstruction,” as we discussed above.

Non-Pronounced (14b) since the identical clause in the first sentence is available as an antecedent (strike-through means Non-Pronounced hereafter). After that, the derivation proceeds to form the matrix clause (14c). Of importance here is that it is impossible at this point to PF-copy the object *zassi-o* ‘magazine-ACC’ into the sentence initial position (14d) since the object has been determined as Non-Pronounced at the previous stage. As a result, the second sentence cannot be derived. Thus an explanation for the impossibility of extraction out of ellipsis follows.

The fact that sentences such as (7b) are acceptable can also be given an account if we adopt one more proposal formalized in (15).

(15) *Intermediate Movement as Adjunction*

An intermediate movement of successive cyclic movement is implemented by adjoining a moving element to a phase. (cf. Bošković 2007)

Note that (15) is needed as far as we assume Extended Transfer in (10). This is because, if nothing more is assumed, all elements inside a phase cannot be moved out of it. This means that a sentence like *What did you buy?* would never be derived. Therefore, apart from extraction out of ellipsis, such a proposal is motivated on an independent ground (see Nakanishi 2015).

Returning to (7b), the proposal in (15) correctly explains why the derivation does not yield any problem. The derivation of the second sentence in (7b) is given below:

- (16) a. **Step 1: Build the embedded clause**
 [Hanako-ga zassi-wa_[uFoc] kat-ta to]
- b. **Step 2: Adjoin the object**
 < zassi-wa_[uFoc], { [Hanako-ga zassi-wa_[uFoc] kat-ta to] } >
- c. **Step 3: Transfer**
 < zassi-wa_[uFoc], { [Hanako-ga zassi-wa_[uFoc] kat-ta to] } >
 Transfer
 ↓↓
 < zassi-wa_[uFoc], { [~~Hanako-ga zassi-wa_[uFoc] kat-ta to~~] } >
- d. **Step 4: Build the matrix clause**
 [Ziroo-ga < zassi-wa_[uFoc], { [~~Hanako-ga zassi-wa_[uFoc] kat-ta to~~] } > it-ta]
- e. **Step 5: Move and Agree**
 [**zassi-wa**_[uFoc] **H**_[uFoc] [Ziroo-ga < zassi-wa_[uFoc], { [~~Hanako-ga zassi-wa_[uFoc] kat-ta to~~] } > it-ta]]

First the embedded clause is formed (16a). Importantly, we suppose here that *zassi-wa* ‘magazine-TOP’ contrasts with *hon-o* ‘book-ACC’, bearing a contrastive focus. This then drives us to claim that *zassi-wa* has an unvalued feature [uFoc], which should be valued at a later stage; otherwise the derivation crashes with it unvalued inside the embedded clause. Thus in accordance with (15), the object is adjoined to the embedded clause (16b). Note that we assume that adjoining

an element is equivalent to pair-merging it in the sense of Chomsky (2004). Thus adjoining the object yields an ordered pair. Then, Transfer applies only to the embedded clause except the adjoined object (16c) since it is not an immediate member of a phase according to the definition in (10). Afterwards, the derivation proceeds to build the matrix clause (16d), and Move and Agree apply to the object to value the unvalued [uFoc] (16e). Since this derivation does not involve Scrambling as a PF-deletion operation, the above mentioned problem, i.e., the object has been determined previously as Non-Pronounced, does not arise, thus resulting in acceptability.

In summary, the proposals made here can correctly account for the data concerning extraction out of ellipsis in Japanese just under a PF-copying approach, not under an LF-copying approach.

5. Alternative Account with *Soo*

Although PF-deletion approach has been pursued in the previous section, another possibility is still available to account for the impossibility of extraction out of ellipsis. For example, it is possible to assume that (17) is the original sentence of (7b), where the complement CP is replaced with *soo* ‘so’, and that, when *soo* in (17) undergoes ellipsis, we obtain (7b).

- (17) Hon-o_i Taroo-wa [Hanako-ga t_i kat-ta to] it-ta ga,
 book-ACC Taro-TOP Hanako-NOM buy-PAST that say-PAST though
zassi-wa_j Ziroo-ga soo it-ta.
 magazine-TOP Ziro-NOM so say-PAST

‘*Lit.* A book, Taro said that Hanako bought, but a magazine, Ziro said so.’

At LF, *soo* is replaced with the antecedent LF object and then the correct interpretation results. This suggests that there be a room to analyze sentences like (7) under LF-copying approach.

However, Sakamoto (2016) argues independently that sentences with *soo* phrases are best analyzed as involving PF-deletion. One piece of evidence comes from the interaction between negation and quantified objects. It is known that quantified objects in Japanese can take both wide and narrow scope with respect to negation. In light of this, witness the scope ambiguity in (18).

- (18) a. Taroo-wa [_{CP} Tokyo-no-yooni itutu-izyo-no mati(-no-koto)-o nigiyaka
 Taro-TOP Tokyo-GEN-like five-or.more-GEN city(-gen-think)-ACC lively
 da to] iwa-nakat-ta.
 COP that say-not-PAST

(i) ‘It is not the case that Taro said that five or more cities are lively like Tokyo.’

(NEG > #)

(ii) ‘Five or more cities are such that Taro did not say that they are lively like Tokyo.’

(# > NEG)

- b. Ziroo-mo [_{CP} soo] iwa-nakat-ta.
 Ziroo-also so say-not-PAST

- (i) ‘It is not the case that Ziro also said that five or more cities are lively like Tokyo.’
(NEG > #)
- (ii) ‘Five or more cities are such that Ziro also did not say that they are lively like Tokyo.’
(# > NEG)
- (Sakamoto 2016: 3)

The target sentence in (18b) has both interpretations as the antecedent in (18a) does. Given this and based on the similar behavior observed in (19), he concludes that *soo* involves surface anaphora, but not deep anaphora, and claims that *soo* phrases can be derived by deleting its complement CP.

- (19) A doctor [_{VP} examined every patient], ...
- a. and then a nurse did [~~_{VP} examined every patient~~]. (VP-ellipsis = surface anaphora)
- (i) ‘There is a nurse such that she examined every patient.’ (∃ > ∀)
- (ii) ‘For every patient, there is a nurse who examined him/her.’ (∀ > ∃)
- b. and then a nurse [_{VP} did it]. (*did it* = deep anaphora)
- (i) ‘There is a nurse such that she examined every patient.’ (∃ > ∀)
- (ii)*‘For every patient, there is a nurse who examined him/her.’ (*∀ > ∃)

Although, due to the space limitation, we do not examine his analysis in detail here, what is important is that *soo* phrases are best analyzed as involving PF-deletion, as he argues. Put differently, the above data cannot be accommodated under an LF-copying approach since it does not assume that *soo* phrases have internal structures.

If his analysis is correct, then it can be concluded that there is not any room to analyze sentences like (7) under an LF-copying approach, thus reinforcing the claim made in this paper that extraction out of ellipsis in Japanese is best analyzed under a PF-deletion approach.

6. Concluding Remarks

In this paper, we have discussed why extraction out of ellipsis in Japanese is impossible and have examined Shinohara’s (2006) and Saito’s (2007) analyses which are based on LF-copying for ellipsis. Seemingly, they have explained its unacceptability nicely; nevertheless, they have encountered a counterexample. Facing this shortcoming, we have taken another approach, i.e., PF-copying approach, and then have argued that the proposals made in this paper give a full explanation not only to the unacceptability but also to the improved acceptability with topicalization.

Before closing this paper, it should be note that our proposals might make a wrong prediction concerning island violation; more specifically, our proposals predict that Scrambling does not give rise to island violation since PF-copying itself is in principle operative across islands. However, it is widely known that Scrambling exhibits island sensitivity, as exemplified in (20).

- (20) *Sono hon-o_i John-ga [minna-ga t_i kau node] tigau hon-o
that book-ACC John-NOM all-NOM buy because different book-ACC

kat-ta (koto)

buy-PAST fact

‘Because everyone buys that book, John bought a different one.’ (Saito 1985: 247)

At this point, we have no persuasive idea for the island sensitivity of Scrambling, so let us leave it for future research.

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