Particle Stranding Ellipsis Involves PF-Ellipsis

Abstract: This paper develops a new phonological analysis of Particle Stranding Ellipsis (PSE) in Japanese as an alternative to the recent, purely structural analysis of the phenomenon (Sato 2012; Goto 2014). Drawing on Shibata's (2014) observations, we propose that PSE results from String Deletion in the phonological component (Mukai 2003), which has the function of aligning the left edge of the first intermediate phrase to that of the utterance phrase. We then turn to investigate the relationship between PSE and other ellipsis cases in Japanese. We present various arguments, based on sloppy readings, partial negation, disjunction, and parallelism, to show that PSE involves argument ellipsis, one of the most intensively investigated phenomena in the latest generative literature on Japanese syntax (Oku 1998; Saito 2007; Takahashi 2008), arguing against the conceivable *pro*-drop alternative. The two results derived here, therefore, strongly suggest that the derivation of PSE involves PF-ellipsis.

Keywords: particle stranding ellipsis, phase, linear sensitivity, string deletion, argument ellipsis

1. Introduction

In this paper, we develop a new phonological analysis of the so-called *Particle Stranding Ellipsis* (henceforth, PSE) in Japanese as an alternative to the recent, purely structural analysis of the phenomenon espoused by Sato (2012) and Goto (2014). PSE is illustrated by Speaker B's utterance in (1), which involves the ellipsis of the topic element – *Tanaka-kun* 'Tanaka' – but leaves the overt topic particle behind.[1]

(1) Speaker A: Tanaka-kun-wa?
Tanaka-TIT-TOP
'How about Tanaka?'
Speaker B: **wa**-ne, kaisha-o yameta-yo.
TOP-PRT company-ACC quit-PRT
'He quit his company.' (Hattori 1960:452)

Sato (2012) proposes a phase-theoretic analysis of PSE, which consists of optional Spell-Out of the Top′ projection containing the overt Topic head *–wa* and its TP complement to PF for phonological interpretation while transferring the entire TopP to LF for semantic interpretation. In a similar vein, Goto (2014) suggests that PSE results when the topic marker within the topicalized material undergoes overt movement to the specifier of an FP, which encodes speaker-hearer interactions and their linguistic reflexes in conversational contexts (Nasu 2012), followed by the optional Spell-Out of the TopP complement to PF for phonological interpretation.

We have two goals in this paper. One goal is to demonstrate that the purely structural analysis for PSE of the sort put forth by Sato (2012) and Goto (2014) are built on a number of descriptively inadequate generalizations on PSE. More concretely, in sections 2 and 3, we will point out that PSE applies within an embedded clause, targets a wide variety of particle and particle-like expressions beyond the topic marker *–wa*, and exhibits strict linear sensitivity for its application. We will use these three properties to uncover the limits and problems of a purely structural analysis of PSE. We propose instead that these properties are straightforwardly captured by a phonological ellipsis approach to PSE along the lines of the recent claim made by Shibata (2014), according to which PSE is licensed as long as the

[1] The list of abbreviations used: ACC, accusative; CAUS, causative; COMP, complementizer; COP, copula; DAT, dative; GEN, genitive; HON, honorification; LOC, locative; NEG, negation; NOM, nominative; PAST, past tense; POL, politeness marker; PRES, present tense; PRT, particle; Q, question; TIT, title; TOP, topic.

stranded particle stands on the left edge of the first intermediate phrase which aligns with that of the utterance phrase. We implement the ellipsis approach in terms of String Deletion (Mukai 2003), motivated on independent grounds. This task is undertaken in sections 2 and 3.

The other goal of this paper is to investigate the connection of PSE to other ellipsis phenomena in Japanese. In section 4, we will present various arguments on the basis of sloppy readings (Oku 1998), partial negation, disjunction (Sakamoto 2016), and parallelism (Fiengo and May 1994; Takahashi 2013; Takita 2016) to show that PSE can take the form of argument ellipsis (Oku 1998; Saito 2007; Takahashi 2008). In doing so, we will argue against the conceivable alternate *pro*-based analysis of PSE. This result, then, lends further supporting evidence for our view that PSE involves some ellipsis, contrary to structure-oriented analyses thereof advocated by Sato (2012), Goto (2014), and others.

2. Particle-Stranding Ellipsis in Japanese and Phase Theory

Sato's (2012) phase-theoretic analysis of PSE is designed to account for three structural properties of the construction. First of all, PSE must target a sentence-initial topic element (Yoshida 2004; Sato 2012; Nasu 2012). The first utterance by Speaker B in (2a) is grammatical because PSE applies to the sentence-initial topic phrase *John-wa*. Indeed, when PSE applies to non-initial topic expressions, as shown in (2b, c), the result is ungrammatical.

(2) Speaker A: John-wa kyoo nani-o siteiru-no?
John-TOP today what-ACC doing-Q
'What is John doing today?'
Speaker B: a. **wa**, Mary-ni daigaku-de atteiru-ne.
TOP Mary-DAT university-LOC meeting-PRT
'John is meeting Mary at a university.'
b. * Mary-ni **wa**, daigaku-de atteiru-ne.
Mary-DAT TOP university-LOC meeting-PRT
'John is meeting Mary at a university.'
c. * Mary-ni daigaku-de **wa**, atteiru-ne.
Mary-DAT university-LOC TOP meeting-PRT
'John is meeting Mary at a university.' (Sato 2012:496)

Second, PSE is a root phenomenon (Sato 2012; Nasu 2012; Goto 2014), as attested by the ill-formedness of PSE in Speaker B's utterance in (3). Note that the ungrammaticality of this example cannot be attributed to the impossibility of embedded topicalization since the utterance is grammatical with the overt embedded topic subject *Taroo-wa* 'Taro-TOP'.

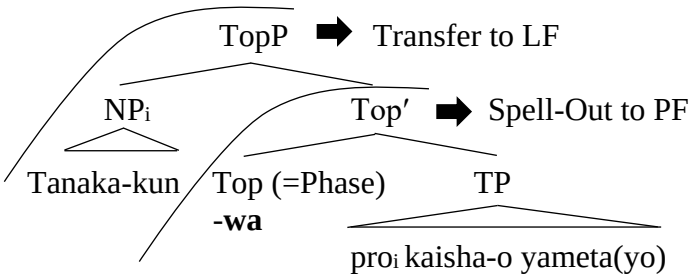
(3) Speaker A: John-wa sono toki Taroo-o dare-ga korosita-to omotta-no?
John-TOP that time Taro-ACC who-NOM killed-COMP thought-Q
'Who did John think at that time that killed Taro?'
Speaker B: John-wa sono toki [CP*(Taroo)-*wa*, Mary-ga kotosita-to] omotta-yo.
John-TOP that time Taro-TOP Mary-NOM killed-COMP thought-PRT
'John thought at that time that Taro, Mary killed.' (Sato 2012:496)

Finally, PSE cannot apply more than once in a clause (Sato 2012), as shown in (4). In (4a), the two topicalized elements – *Suzuki-sensei-wa* 'Prof. Suzuki-TOP' and *Takahasi-kun-wa* 'Takahashi-TOP' – undergo PSE, rendering the sentence ungrammatical. However, when the second application of PSE is removed by overtly repeating the second topic DP, the sentence is regarded as more acceptable than (4a), as shown in (4b).

(4) Speaker A: Suzuki-sensei-wa Takahasi-kun-o doko-ni suisensuru-tumori-na-no?
Suzuki-TIT-TOP Takahashi-TIT-ACC where-LOC recommend-intend-COP-Q
'Where does Prof. Suzuki intend to recommend Takahashi?'
Speaker B: a. * **wa**-ne, **wa**, MIT-ni suisensuru-tumori-mitai-da-ne.
TOP-PRT TOP MIT-LOC recommend-intend-seem-COP-PRT
'It seems that Prof. Suzuki intends to recommend Takahashi to MIT.'
b. ? **wa**-ne, Takahashi-kun-**wa** MIT-ni suisensuru-tumori-mitai-da-ne.
TOP-PRT Takahashi-TIT-TOP MIT-LOC recommend-intend-seem-COP-PRT
'It seems that Prof. Suzuki intends to recommend Takahashi to MIT.'
(Sato 2012:497)

Sato suggests that the derivation of the PSE example in (1) proceeds as depicted in (5).

(5)



(Sato 2012:500)

In this derivation, the Top head and its complement TP are Spelled-Out to PF for phonological interpretation whereas the entire TopP, including its specifier, is transferred to LF for semantic interpretation. The three structural properties of PSE described above are derived as follows. First, PSE must target a sentence-initial topic element, assuming that the Top head constitutes the highest functional projection in the derivation of PSE; the presence of an extra element in the specifier of a higher functional head as postulated in Rizzi's (1997) elaborated left periphery would wind up triggering the Spell-Out of the whole TopP to PF for externalization. Second, PSE must be a root phenomenon under the proposed system because the specifier of TopP within an embedded clause would be necessarily Spelled-Out, rendering PSE impossible. Finally, PSE can apply only once because the hypothetical second application of PSE would target a non-sentence-initial topic, which is in violation of the first constraint on PSE.

3. Problems with the Phase-Theoretic Analysis of PSE: Moving Toward Ellipsis

In this section, we point out three problems, both conceptual and empirical, with Sato's (2012) particular phase-theoretic analysis of PSE. Drawing on Shibata's (2014) insight, we submit that the problems at hand will receive a more satisfactory solution in terms of string-based deletion applying in the phonological component (Mukai 2003).

3.1. *Problems with the Phase-Theoretic Analysis of PSE*

Let us start by noting that Sato's proposed derivation of PSE crucially stands on the assumption that at the root level, the intermediate Top′ projection, containing the head and its TP complement, may undergo optional Spell-Out. However, it has been most commonly assumed (Chomsky 2001) that Spell-Out applies to the complement of a phase head, not to the combination of the head and its complement together, as required in (5). Unfortunately, the particular assumption Sato adopts for his Spell-Out domain is not motivated elsewhere on independent grounds.

More importantly, the structural analysis is faced with considerable weakness in its empirical coverage. Previous works on PSE, including Sato and Ginsburg (2007), Goto (2014), and Shibata (2014), point out that PSE can occur not only with the topic marker *–wa*,

but also with a wide range of other non-topic particles. They include, but are not limited to, *–ga* (nominative case particle), *–mo* (additive particle), inherent case markers such as *–kara* 'from', complementizers, both declarative and interrogative, such as *to* 'that' and *kadooka* 'whether', and certain auxiliaries such as *mitai* 'look like', as shown in (6–10).

(6) Speaker A: John-ga doo sita-no?
John-NOM how did-Q
'What did John do?'
Speaker B: **ga** kaisha-o yameta-yo.
NOM company-ACC quit-PRT
'John quit his company.' (Goto 2012:103)

(7) Speaker A: Taroo-mo kita-no?
Taro-also came-Q
'Did Taro also come?'
Speaker B: **mo** ki-masita.
also come-POL.PAST
'Taro also came.' (Shibata 2014)

(8) Speaker A: John-kara okane-o moratta-no?
John-from money-ACC received-PAST
'Did you receive money from John?'
Speaker B: **kara** moratta-yo.
from received-PRT
'I received money from John.' (Goto 2012:103)

(9) Speaker A: John-wa kita-no?
John-TOP came-Q
'Did John come?'
Speaker B: **to** omoi-masu-kedo. /**kadooka**-wa chotto wakari-masen-ne.
C think-POL-though whether-TOP a bit know-POL.NEG-PRT
'I think that he came.'/'I do not know whether he came or not.'

(10) Speaker A: Chomsky-ga sangatu-ni rainiti-suru-rasii-yo.
Chomsky-NOM March-in visit.Japan-do-hear-PRT
'It seems that Chomsky is visiting Japan in March.'
Speaker B: **mitai**-desu-ne.
seem-COP.POL-PRT
'It seems that he is visiting Japan in March.'

Since Sato's approach is specifically tailored for canonical cases of PSE, as in (1), which contain an overtly stranded topic marker, it is unclear how it can be extended to cover those cases as in (6–10), which do not seem to necessarily involve a topic interpretation for the elided expressions followed by those non-topic particles. It would be more desirable to have an alternate analysis that provides a uniform explanation for (6–10) as well as the core cases of PSE illustrated in (1), than to have two separate explanations for two types of PSE cases.

3.2. *Shibata's (2014) Phonological Approach to PSE and String Deletion*

We maintain that Shibata's (2014) phonological approach provides precisely such an alternative. Shibata observes that all the PSE cases discussed thus far involve a focused

stranded particle and proposes to formalize this observation as the interaction of two alignment constraints (Pierrehumbert and Beckman 1988; Nagahara 1994) defined in (11a, b).

(11) a. FOCUS-LEFT-EDGE
Left edge of focus = left intermediate phrase edge
b. FOCUS-TO-END
No intervening [$_i$ between any focus constituent and the end of the sentence
(Shibata 2014)

To illustrate, the sentence (12a), when uttered normally, is phrased as in (12b). This is because, in Japanese, the left edge of a syntactic XP is aligned with an intermediate phrase boundary, with the sentence-final verb being included in the same intermediate phrase with its preceding direct object (Selkirk and Tateishi 1991). Nagahara (1994) observes that, when the topic DP is focused, it extends the intermediate phrase which originally contains it to the end of the whole sentence, an effect captured by (11a, b). This phonological phrasing is given in (12c). In (12b, c), *u* stands for Utterance whereas *i* stands for Intermediate Phrase.

(12) a. Naoko-wa nitiyoobi Nagoya-de Mari-ni atta.
Naoko-TOP Sunday Nagoya-in Mari-DAT met
'Naoko met Mari in Nagoya on Sunday.'
b. [$_u$ [$_i$ Náoko wá] [$_i$ nitiyóobi] [$_i$ Nágoya dé] [$_i$ Mári ní átta]]
c. [$_u$ [$_i$ Náoko] [$_i$ wá nitiyóobi Nágoya dé Mári ní átta]] (Shibata 2014)

The phrasing in (12c) indicates that 1) the particle *–wa* starts a new intermediate phrase by boosting its pitch accent almost as high as that of the first vowel in the proper name *Naoko*, and that 2) the pitch contour goes down gradually through the rest of the utterance to the end. The reset of the pitch level at *–wa* is considered a cue to initiate a new prosodic boundary. Given this much in place, Shibata proposes (13) as a licensing condition on PSE. [2]

(13) PSE is licensed in: [$_u$ [$_i$ X ……]], where X is a stranded particle and is focused.
(Shibata 2014)

Shibata's approach does include an explicit mention of the licensing condition on this construction, but does not explore what the exact process involved in PSE is. More specifically, a complete theory of PSE must specify not just the licensing condition on PSE, but also the underlying formal mechanism for how Japanese speakers know that Speaker B's utterance in (1), repeated here as (14), for example, is interpreted as "Tanaka quit his company".

(14) Speaker A: Tanaka-kun-wa?
Tanaka-TIT-TOP
'How about Tanaka?'
Speaker B: **wa**-ne, kaisha-o yameta-yo.
TOP-PRT company-ACC quit-PRT
'He quit his company.' (Hattori 1960:452)

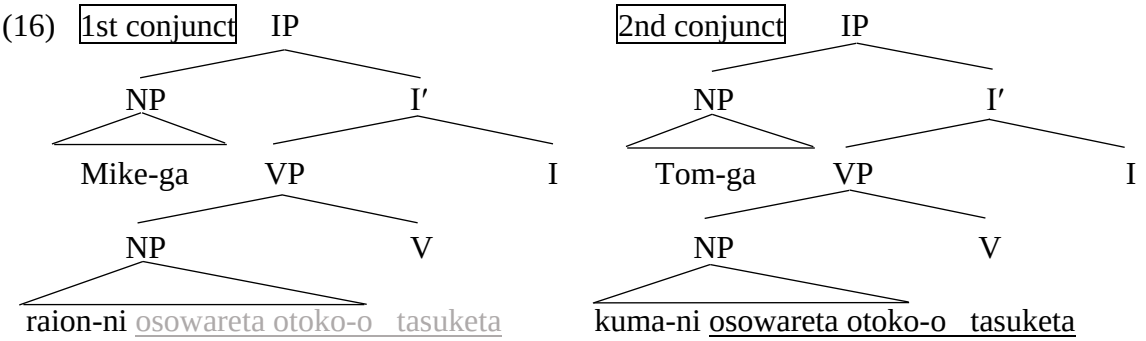
[2] Shibata (2014) notes that the condition correctly predicts that Korean does not accept PSE, given Jun's (1993) independent observation that it is impossible to focus only a particle in Standard Korean.

We suggest that the derivation of PSE sentences like (1) involves a string-based deletion in the phonological component in conformity with the general licensing condition in (13). Mukai (2003) proposes that gapping examples such as (15) are derived by what she calls *String Deletion*, which applies to a phonetic string, regardless of its syntactic constituency.

(15) Mike-ga raion-ni, Tom-ga kuma-ni osowareta otoko-o tasuketa.
Mike-NOM lion-DAT Tom-NOM bear-DAT was.attacked man-ACC saved
'Mike saved the man who was being attacked by a lion, and Tom a bear.'
(Mukai 2003:210)

Mukai (p. 211) assumes that the only condition imposed on String Deletion is that the target be continuous and contain a verb. The example in (15) is analyzed as shown in (16).

(16)



(adopted from Mukai 2003:211)

In this derivation, the underlined portion of the first conjunct is identical to the underlined portion of the second conjunct. String Deletion subsequently applies to the underlined part of the elliptical conjunct. Mukai argues that the lack of the Complex DP Island Effect in this example, while problematic for movement-based analyses of gapping (e.g., Abe and Hoshi 1997), is straightforwardly derived under the String Deletion theory, for the dative arguments within the two conjuncts do not undergo any syntactic movement in the derivation of (15).

Generalizing the spirit of Mukai's String Deletion, we propose that the same operation is responsible for PSE. Under this analysis, the example in (1)/(14) is analyzed as in (17).

(17) Speaker A: Tanaka-kun-wa?
Tanaka-TIT-TOP
'How about Tanaka?'
Speaker B: [DP Tanaka-kun]-**wa**-ne kaisha-o yameta-yo.
TOP-PRT company-ACC quit-PRT
'Tanaka quit his company.'

In (17), the underlined portion of the DP in Speaker B's utterance is identical to that of the DP in Speaker A's utterance and forms a contiguous linear string. String Deletion therefore may apply to delete *Tanaka-kun* 'Tanaka', yielding PSE. The reader can verify that the same analysis can also yield the PSE configuration with other non-topic particles in (6–10).

3.3. *New Predictions of the Proposed Analysis: Embedded PSE and Strict Linear Sensitivity*
The present analysis makes correct empirical predictions regarding the (un-)availability of PSE in two contexts in a way that purely structural analyses such as Sato's cannot, which thus provide further evidence for our phonological characterization of the nature of PSE.

One context concerns PSE within an embedded clause. Recall from section 2 that structural approaches to PSE initiated by Sato (2012), as further elaborated by Goto (2014), hinges on the observation that it is a matrix-level, root phenomenon. Shibata (2014), however, points out that it is not descriptively adequate. In (18), for example, the nominative subject appears to undergo PSE in an embedded context, but the sentence is nonetheless grammatical.

(18) Speaker A: John-wa sigoto-o yameru-no?
John-TOP job-ACC quit-Q
'Will John quit his job?'
Speaker B: [$_{CP1}$ [$_{CP2}$ **ga** sigoto-o yameru kadooka-wa] sira-nai-kedo], sooiu
NOM job-ACC quit whether-TOP know-NEG-though such
uwasa-wa aru.
rumor-TOP exist
'Though I don't know whether he will quit his job, there is such a rumor.'
(Shibata 2014)

In this example, the topicalized CP_2 in Speaker B's utterance is embedded within the CP_1 headed by *sira-nai-kedo* 'though I don't know'. Note that (18) cannot be assimilated to the matrix level PSE by scrambling the nominative subject to the sentence-initial position within the CP_1 because this operation at issue would violate the well-known ban on string-vacuous scrambling (Hoji 1985). The grammaticality of this PSE utterance thus shows that PSE is not a root phenomenon, contrary to the observation made by Sato (2012) and others.

Speaker B's utterance in (19) makes a similar point. Here, we use the subordinating conjunction marker *nagara* 'while', which requires one clause to its left as its subordinate complement and another clause to its right as its matrix complement. Again, the grammaticality of (19) shows that PSE can occur within an embedded clause.

(19) Speaker A: Sonnani chokoreeto katte doo suru-no?
that much chocolate buy.CONJ how do-Q
'You bought so much chocolate. What will you do with that?
Speaker B: **o** tabe-nagara LGB-demo yom-ookana-tte omotta-no.
ACC eat-while LGB-or something read-shall-COMP thought-PRT
'I thought about reading LGB or something while eating chocolate.'

The new observation reported here poses a serious problem for the structure-oriented analysis to PSE such as Sato's (2012), because that particular analysis is designed in a way to predict that PSE occurs only within a matrix clause, for the reason stated in section 2. The possibility of embedded PSE, on the other hand, is perfectly consistent with our alternate PF-oriented approach, because its only condition imposed on PSE is that it applies on the basis of the string identity between an antecedent and elliptical clause; in other words, nothing prevents String Deletion from applying to an embedded context, as in (18–19).

The other context which distinguishes between the phonological and structural analyses of PSE has to do with the observation that the target of PSE must strictly target the linear sentence-initial position. Shibata (2014), for example, points out that the target site of PSE cannot be preceded by interjections such as *eetto* 'well', as witnessed by the ill-formedness of (20a).

(20) Speaker A: John-wa kuru-no?
John-TOP come-Q
'Will John come?'

Speaker B: a. *Eetto, **wa** ki-masen.
well TOP come-POL.NEG
'Well, he won't come.'
b. Eetto John-wa ki-masen.
well John-TOP come-POL.NEG
'Well, he won't come.'

The contrast between (20a) and (20b) is difficult to explain under the structural analysis. Within such an analysis, the input structure for (20a) is that shown in (20b), which shows that the interjection can licitly occur preceding the topic DP, the only difference between the two being that the topic in [Spec, TopP] undergoes Spell-Out only in (20b). Consequently, the structural analysis would predict that (20a) would be grammatical in the same way that (20b) is. Our current analysis of PSE, on the other hand, straightforwardly rules out (20a) because the output of the String Deletion in (20a) violates the licensing condition on PSE in (13).

4. New Arguments for the Argument Ellipsis Analysis of PSE

In this section, we will explore possible connections between PSE and other elliptic phenomena in Japanese. More specifically, we will present hitherto unnoticed observations to show that PSE can take the form of argument ellipsis (Oku 1998; Saito 2007; Takahashi 2008). These observations, thus, lend further credence to our view that PSE involves some sort of ellipsis, contrary to Sato's (2012) analysis. In doing so, we will also use some of these observations to reject the conceivable non-ellipsis analysis of PSE which resorts to *pro*-drop (Kuroda 1965).

4.1. *PSE ≠ Pro-Drop: Further Arguments for an Ellipsis Analysis of PSE*

Our current empirical observation which is in favor of an ellipsis approach to PSE entailed by String Deletion, is that PSE requires a linguistic antecedent, which has been taken, since Hankamer and Sag (1976), as one of the hallmarks of certain elliptic constructions, such as VP-deletion and sluicing, which are derived through ellipsis on the basis of full-fledged syntactic structures. This observation is illustrated in (21). Compare this example with (1), which shows that PSE is licensed when there is an overt linguistic antecedent licensing the ellipsis.

(21) [Situation: Speaker A is looking for Taroo.]
Speaker B: a. ***wa**, moo kyoositu-ni iru-yo.
TOP already classroom-LOC be-PRT
'Taroo is already in the classroom.'
b. *pro* moo kyoositu-ni iru-yo.
already classroom-LOC be-PRT
'Taroo is already in the classroom.'

Note that the *pro*-drop variant of (21a) does not require a linguistic antecedent, as evidenced by the grammaticality of (21b). This contrast thus proves that PSE cannot be reduced to *pro*-drop with optional ellipsis/pronunciation of the particle following the sentence-initial phrase.

Sato and Ginsburg (2007), in fact, present an independent argument against the *pro*-drop analysis of PSE on the basis of the Double-*o* Constraint. This constraint is defined in (22) and illustrated in (23).

(22) Shibatani's (1978:262) Double-*o* Constraint
There cannot be more than one accusative Case in a sentence.

(23) a. Taroo-ga Ziroo-ni/-o Tokyo-e ik-ase-ta. (base verb = intransitive)
Taro-NOM Jiro-DAT/-ACC Tokyo-to go-CAUS-PAST
'Taro made Jiro go to Tokyo.'
b. Taroo-ga Ziroo-ni/*-o ronbun-o yom-ase-ta. (base verb = transitive)
Taro-NOM Jiro-DAT/-ACC article-ACC read-CAUS-PAST
'Taro made Jiro read an article.'

In (23a), the causee argument can be marked with the accusative case *–o* when the embedded verb takes a non-accusative goal argument. However, the accusative marking of the same argument results in severe ungrammaticality in (23b) because it will result in two accusative cases within a single clause, in violation of the Double-*o* Constraint.

With the Double-*o* Constraint in mind, consider now (24), modelled after Saito's (2004:116) example, intended to show that null arguments in Japanese receive Case.[3] The accusative marking of the causee argument *Taroo* 'Taro' violates the Double-*o* Constraint, and hence, results in ungrammaticality.

(24) [Situation: Speaker A is wondering who let Taro take his regular Asthma medicine while Speaker A was taking a nap.]
Speaker B: Watasi-ga Taroo-ni/*o *pro* nom-ase-ta-yo.
I-NOM Taro-DAT/ACC drink-CAUS-PAST-PRT
'I let Taro take his medicine.'

In this example, there is no linguistic antecedent for the elliptical theme object intended to refer to *kusuri* 'medicine'. As we will see in Section 4.2, the output of the so-called argument ellipsis requires a linguistic antecedent, unlike the null pronoun, which does not require such an antecedent (recall (21b)). Since the null argument in (24) does not have a linguistic antecedent, it must be analysed as *pro* instead of being derived through argument ellipsis. The manifestation of the Double-*o* Constraint in (24), then, conclusively indicates that *pro* receives accusative Case.

This observation, in turn, makes it difficult to maintain the *pro*-drop analysis of PSE. To illustrate why, consider the PSE example in (25), which applies to an accusative argument in the sentence-initial position, as evidenced by the stranded accusative particle *–o*.

(25) Speaker A: Koibito-kara-no rabu retaa-o doo-sita-tte?
girlfriend-from-GEN love letter-ACC how-did-COMP
'What did you do with your girlfriend's letter?'
Speaker B: **o** yabutte kawa-ni suteta-nda-yo.
ACC tear up river-into threw away-COP-PRT
'I tore it up and threw it into a river.'

We just concluded above that *pro* is marked with accusative Case. Consequently, the example in (25) would be very difficult to accommodate under the *pro*-drop analysis because the accusative case *–o* should not be able to manifest itself in overt syntax. The ellipsis analysis, of course, is consistent with the accusative PSE pattern as in (25) since the only condition on String Deletion is that it applies to the sentence-initial XP which has an overt linguistic antecedent.

[3] Saito's (2004:116) original example is shown in (i):

(i) Ziroo-ga kusuri-o motteki-ta-node Hanako-ga Taroo-ni/*o e_{DP} nom-ase-ta.
Jiro-NOM medicine-ACC bring-PAST-since Hanako-NOM Taro-DAT/ACC drink-CAUS-PAST
'Since Jiro brought a medicine, Hanako let Taro drink it.' (Saito 2004:116)

We can make a similar argument against the *pro*-drop analysis of PSE on the basis of the nominative variant of this construction. The argument below is modelled on Takahashi's (2016) recent argument for Case-marked nominative null pronouns, drawing on Shibatani's (1978:65) case-marking constraint to the effect that there be at least one nominative argument in a finite clause. Consider (26) to illustrate how this constraint works.

(26) a. Megumi-ga Indonesiago-o hanas-e-ru.
Megumi-NOM Indonesian-ACC speak-can-PRES
'Megumi can speak Indonesian.'
b. Megumi-ga Indonesiago-ga hanas-e-ru.
Megumi-NOM Indonesian-NOM speak-can-PRES
'Megumi can speak Indonesian.'
c. Megumi-ni Indonesiago-ga hanas-e-ru.
Megumi-DAT Indonesian-NOM speak-can-PRES
'Megumi can speak Indonesian.'
d.*Megumi-ni Indonesiago-o hanas-e-ru.
Megumi-DAT Indonesian-ACC speak-can-PRES
'Megumi can speak Indonesian.'

The transitive verb *yom* 'to read' in Japanese requires a nominative subject and an accusative object, as shown in (26a). As is well-known (Kuroda 1965; Kuno 1973), however, when the verb is combined with the potential affix *–e* 'can', a series of different case arrays emerges. The examples in (26b, c) show that in the potential construction, the direct object and the subject can now be marked with the nominative and dative cases, respectively. Interestingly, however, the dative-accusative case alignment, is ungrammatical, as witnessed in (26d). Shibatani (1978:65) argues that the example is ruled out by the constraint noted above.

Having reviewed Shibatani's constraint, consider now (27) and (6), repeated as (28).

(27) [Situation: Speaker A is wondering what language a foreigner sitting next to him is speaking. Speaker B happens to have studied the language the foreigner is speaking before.]
Speaker B: *pro* Indonesiago-o hanasite-i-masu-ne.
Indonesian-ACC speak-PROG-POL-PRT
'He is speaking Indonesian.'

(28) Speaker A: John-ga doo sita-no?
John-NOM how did-Q
'What did John do?'
Speaker B: **ga** kaisha-o yameta-yo.
NOM company-ACC quit-PRT
'John quit his company.' (Goto 2012:103)

The grammaticality of (27) indicates that there must be at least one nominative argument in its derivation. Since there is no overt linguistic antecedent preceding Speaker B's utterance in (27), the subject of the utterance in question must be represented by *pro* instead of argument ellipsis. Consequently, the *pro*-based analysis of PSE cannot explain why the nominative case could be stranded in (28) since the case marker should be contained within the null pronoun.

4.2. *Four Arguments for Argument Ellipsis within PSE*

In this section, we will present four arguments, based on sloppy interpretations, scope, disjunction and parallelism, to show that PSE can take the form of argument ellipsis.

Our first argument for this position comes from the availability of sloppy interpretations for PSE-ed arguments. To set the stage for our argument, consider (29). Suppose that the null object argument in (29b) is understood to be somehow anaphoric to the overt object in (29a). Oku (1998) points out that, given this context, the null object argument in Japanese in (29b) may exhibit either a strict interpretation (Taro's mother) or a sloppy interpretation (Hanako's mother). When (29b) is uttered in an out-of-the-blue context without proper full-fledged antecedents as in (29a), the null object cannot exhibit the sloppy interpretation but instead must denote some contextually salient individual.

(29) a. Taroo-wa zibun-no hahaoya-o sonkeisiteiru.
Taro-TOP self-GEN mother-ACC respect
'Taro respects his mother.'
b. Hanako-mo *e* sonkeisiteiru. (strict/sloppy)
Hanako-also respect
'Hanako also respects (Taro's/Hanako's mother).'
c. Hanako-mo kanojo-o sonkeisiteiru. (strict/*sloppy)
Hanako-also her-ACC respect
'Hanako also respects her.'

(29c) shows that an overt pronoun can only yield a strict interpretation. Given this restriction, Oku (1998) proposes that the null argument with the sloppy interpretation is derived through the ellipsis of the direct object argument in (29b) in the manner seen in (30), not through *pro*-drop, and thereby takes the availability of this interpretation as a diagnostic test for argument ellipsis (recall our discussion in section 4.1 between *pro* and argument ellipsis).[4]

(30) Hanako-mo zibun-no hahaoya-o sonkeisiteiru.
Hanako-also self-GEN mother-ACC respect
'Hanako also respects Hanako's mother.'

It is significant in this context that PSE allows a sloppy interpretation as well as a strict interpretation for the elliptic phrase. Example (31) is a case in point.

(31) Speaker A: Zibun-no hahaoya-o Hanako-ga sonkeisiteiru-no?
self-GEN mother-ACC Hanako-NOM respect-Q
'Does Hanako$_1$ respect self's$_1$ mother?'
Speaker B: **wa**, tasika, Taro-ga sonkeisiteiru-yo. (strict/sloppy)
TOP as I recall Taro-NOM respect-PRT
'Taro$_2$ respects self's$_{1/2}$ mother.'

Here, the topic DP targeted by PSE permits both strict and sloppy interpretations, just like the null object in (29b). This parallel behavior suggests that PSE involves argument ellipsis.

Our second argument that PSE involves argument ellipsis comes from relative scope between universally quantified DPs and negation, as illustrated in (32).

(32) Speaker A: Kokoni iru zen'in-o paatii-ni shotaisita-no?
here be all-ACC party-to invited-Q
'Did you invite everyone here to the party?'

[4] Oku (1998) implements argument ellipsis in terms of LF-Copy. See Saito (2007) for one argument in favor of the LF-Copy theory as applied to null clausal arguments. In this paper, we are not concerned with the exact mechanism behind argument ellipsis. Our point here is solely to show that PSE can take the form of argument ellipsis.

Speaker B: a. Karera-wa shootaisi-masen-desita. (*Neg » all)
they-TOP invite-POL.NEG-POL.PAST
'I did not invite them.'
b. **wa** shootaisi-masen-desita. (Neg » all)
TOP invite-POL.NEG-POL.PAST
'I did not invite.'
c. [DP Kokoni iru zen'in]-wa shootaisi-masen-desita. (Neg » all)
here be all-TOP invite-POL.NEG-POL.PAST
'I did not invite everyone present here.'

The example in (32b) allows for the partial negation interpretation. Significantly, the variant of (32b) with the overt third-person plural pronoun *karera* 'them', shown in (32a), blocks this interpretation. This contrast thus shows that the PSE case cannot be assimilated to *pro*-drop. On the other hand, the partial negation interpretation in (32b) is exactly predicted by the argument ellipsis analysis, because the pre-ellipsis counterpart to (32b), with the quantified object fully pronounced, accepts the partial negation interpretation, as shown in (32c).

Our third argument for the availability of argument ellipsis within PSE has to do with disjunction. Sakamoto (2016) points out that in English, pronouns anaphorically linked to disjunctive arguments accept the disjunctive E-type reading, but not the disjunctive reading. Taking (33) as an example, the pronoun *he* in (33b), which is anaphoric to *either John or Bill* in (33a), can only be interpreted as the person who actually visited UConn last year (the disjunctive E-type Reading); it cannot be interpreted as either John or Bill (the disjunctive reading). Ellipsis, on the other hand, can yield the latter interpretation, as shown in (34).

(33) a. Last year, either John or Bill visited UConn.
b. This year too, he visited UConn. (*Disjunctive reading) (Sakamoto 2016:6)

(34) John scolded either Mary or Nancy, and Bill did [VP Ø], too. (✓Disjunctive reading)
(Sakamoto 2016:7)

The examples in (33) and (34) together thus show that the availability of the disjunctive reading is contingent on the application of ellipsis. Sakamoto (2016) then observes that a null argument in Japanese allows the disjunctive reading, on a par with English VP-ellipsis, as shown in (35b), a result which suggests that the null argument is derived through argument ellipsis.

(35) a. Kinoo Taroo ka Ziroo-ga Kanako-o sikatta.
yesterday Taroo or Jiro-NOM Kanako-ACC scolded
'Yesterday, either Taroo or Jiro scolded Kanako.'
b. Kyoo-wa *e* Ayaka-o sikatta. (✓Disjunctive reading)
today-TOP Ayaka-ACC scolded
'lit. Today, *e* scolded Ayaka.' (Sakamoto 2016:7)

Given the presence of the disjunctive reading as a useful diagnostic test for ellipsis, our analysis now predicts that PSE should also exhibit the disjunctive reading. (36) shows that this prediction is borne out. (36b) allows the disjunctive reading whereby the null argument is interpreted as representing the whole disjunctive argument.

(36) a. Kinoo Taroo ka Ziroo-ga Kanako-o sikatta-yo.
yesterday Taroo or Ziroo-NOM Kanako-ACC scolded-PRT
'Yesterday, either Taroo or Ziroo scolded Kanako.'

b. **wa**, Ayaka-mo sikatteita-yo. (✓Disjunctive reading)
TOP Ayaka-also scolded-PRT
'Either Taroo or Ziroo also scolded Ayaka.'

Our final argument for the conclusion that PSE can take the form of argument ellipsis comes from the so-called parallelism constraint imposed on null nominal arguments in Japanese. To illustrate this constraint, consider the null object construction in (37b).

(37) a. John-wa zibun-no kuruma-o aratta.
John-TOP self-GEN car-ACC washed
'John$_1$ washed self$_1$'s car.'
b. Mary-wa [$_{CP}$ Bill-ga *e* arawanakatta-to] itta.
Mary-TOP Bill-NOM not.washed-COMP said
'Mary$_1$ said that Bill$_2$ did not wash self's$_{*1/2}$ car.'

In (37a), *zibun* 'self' within the direct object is bound to the local subject *John-wa* 'John-TOP'. Takahashi (2013) observes that the null object in (37b) can be interpreted as Bill's car, but not as Mary's car. Takahashi argues that this observation follows from the parallelism constraint in the sense of Fiengo and May (1994), which requires that the antecedent and ellipsis target must exhibit the same structural relationship between a binder and a variable. In (37a), there is a local binding relationship between the subject and the object. The parallelism constraint then demands that the same relationship holds for (37b), thereby permitting the local dependency reading (Bill's car), but blocking the long-distance dependency reading (Mary's car).

Note that, given the logic of the parallelism constraint, the long-distance reading in (37b) should become available if we embed (37a) within another clause to ensure that such a long-distance relationship is created between the matrix subject and the embedded object in the antecedent clause. Takahashi illustrates this structural configuration with examples such as (38): see Takahashi (2013, his (27–28)) for his original examples to make this point.

(38) a. Susan$_1$-wa [$_{CP}$ John-ga zibun-no kuruma-o aratta-to] itta.
Susan-TOP John-NOM self-GEN car-ACC washed-COMP said
'Susan$_1$ said that John$_2$ washed self's$_{1/2}$ car.'
b. Mary-wa [$_{CP}$ Bill-ga *e* arawanakatta-to] itta.
Mary-TOP Bill-NOM not.washed-COMP said
'Mary$_1$ said that Bill$_2$ did not wash self's$_{1/2}$ car.'

Focusing on the reading where *zibun* 'self' is bound to the matrix subject *Susan* in (38a), (38b) allows the non-local reading whereby Mary said that Bill did not wash Mary's car, unlike in (37b). Interestingly enough, PSE behaves on a par with argument ellipsis in that it exhibits the parallelism constraint. Speaker A's utterance in (39) involves a local dependency between *John* and *zibun-no kuruma* 'self's car'. The fact that Speaker B's utterance in (39) only allows the local reading (Bill washed Bill's car), not the non-local reading (Bill washed Mary's car), indicates that the parallelism constraint is at work in the derivation of PSE.

(39) Speaker A: Zibun-no kuruma-o John-ga aratta-no?
self-GEN car-ACC John-NOM washed-Q
'Did John$_1$ wash self's$_1$ car?'
Speaker B: **wa** Mary-ga [$_{CP}$ Bill-ga aratta-to] itteta-yo.
TOP Mary-NOM Bill-NOM washed-COMP said-PRT
'Mary$_1$ said that Bill$_2$ washed self's$_{*1/2}$ car.'

Furthermore, our analysis predicts that, when the antecedent clause is constructed so as to yield a non-local reading, as in Speaker A's utterance in (40) the subsequent PSE clause now should exhibit the same reading. This prediction is borne out in Speaker B's utterance in (40) which allows the non-local dependency reading whereby Mary said Bill washed Mary's car, unlike in (39b).

(40) Speaker A: Zibun-no kuruma-o Sue-ga John-ga aratta-to itta-no?
self-GEN car-ACC Sue-NOM John-NOM washed-COMP said-Q
'Did Sue$_1$ say that John$_2$ washed self's$_{1/2}$ car?'

Speaker B: **wa**, tasika, Mary-ga Bill-ga aratta-to itteta-yo.
TOP as I recall Mary-NOM Bill-NOM washed-COMP said-PRT
'As I recall, Mary$_1$ said that Bill$_2$ washed self's$_{1/2}$ car.'

5. Conclusion

In this paper, we have argued for an ellipsis analysis of the PSE configuration in Japanese. We started by pointing out a number of conceptual and empirical problems with a purely syntactic approach to the construction as represented by Sato's (2012) recent phase-theoretic analysis. We have shown that his analysis not only necessitates a special proviso concerning possible Spell-Out domains within Phase Theory but also has a serious empirical limitation, as it is designed to cover only stranding cases with topic-marked DPs. We have further pointed out that PSE can occur within an embedded clause and exhibits strict linear sensitivity, two observations which we took to seriously undermine a purely structural approach to PSE.

On the basis of these observations, we have proposed instead, following Shibata's (2014) recent approach, that PSE is better characterized in terms of String Deletion (Mukai 2003) up to a focused particle so that the left-edge of the first intermediate phrase aligns with the utterance phrase. We have also presented a wide variety of evidence concerning sloppy interpretations, negative scope, disjunction, scope and parallelism constraints to show that PSE may well take the form of argument ellipsis, rejecting the alternate *pro*-based analysis. To the extent that our analysis is on the right track, what appears at first sight to be a rather isolated construction in Japanese is, in fact, derived through the interaction of two independently established grammatical properties of the language – string-based deletion and argument ellipsis.

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