

## On the Ellipsis of Subject- and Object-oriented Adverbs in Japanese\*

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Building on the paradigm involving argument/adjunct asymmetry on argument ellipsis, this work shows that, contrary to the classic analyses that treats subject- and object-oriented adverbs as adverbial adjuncts adjoined to vP/VP, such adverbs form a base-generated single constituent with its host DPs forming “[DP [DP *host DP*] [AdvP *ADV*]],” where the ADV is adjoined to its host DP, and the host DP as a result functions as a lower segment of DP, which parallels with the structure of floating numeral quantifier and its host DP proposed in Yamashita 2016. To the extent that the analysis is on the right track, it encourages us to re-unify the treatment of subject- and object-oriented adverbs and floating numeral quantifier first unified in Miyagawa 1989.

### 1. Introduction

Building on the paradigm involving argument/adjunct asymmetry on argument ellipsis (AE), I demonstrate that secondary predicates in Japanese in general, and subject- and object-oriented adverbs (ADV) in particular, form a single constituent with its host DPs as in (1)a, where the ADV is adjoined to its host DP, and the host DP as a result functions as a lower segment of DP, which parallels with the structure of floating numeral quantifier (FNQ) and its host DP (1)b I proposed in Yamashita 2016.<sup>1</sup>

- (1) a. [DP [DP *host DP*] [AdvP *ADV*]]  
       (e.g., [DP [DP *Mari-ga*] [AdvP *hadaka-de*]], [DP [DP *sake-o*] [AdvP *hiya-de*]])  
       b. [DP [DP *host DP*] [NumP/CIP *FNQ*]]  
       (e.g., [DP [DP *gakusei-ga*] [NumP/CIP *3-nin*]], [DP [DP *sake-o*] [NumP/CIP *3-bon*]])

The paper is organized in the following way. In Section 2, I will briefly summarize the discussion of FNQs and its host DPs in Japanese I put forth in Yamashita 2016 by focusing on cases involving the ellipsis paradigm. Then, in Section 3, I will show that ADVs and its host DPs behaves the same. In Section 4, I will discuss two issues regarding the proposed analysis. Section 5 is a conclusion.

### 2. On the Ellipsis of FNQs in Japanese

In Yamashita 2016, building on the two sets of evidence involving (i) the argument/adjunct asymmetry on AE and (ii) the ban on split multiple long-distance scrambling, I argued for the single constituent (SinC) analysis for FNQ in Japanese (2) (which forms the structure depicted in (1)b), and against the independent constituents (InC) analysis (3) (which forms the structure as depicted in (4), where FNQ is adjoined to the vP/VP that selects the DP which is related to FNQ). Thus the SinC and the InC approach, as a result, postulate different structures.<sup>2</sup>

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<sup>1</sup> I will be agnostic about the ‘label’ of ADVs and use ‘AdvP’ merely for expository purpose.

<sup>2</sup> SinC is referred as the *adnominal* analysis and InC the *adverbial* analysis under the more familiar terminology. The former treats FNQ as a modifier to a noun (NP/DP), and the latter a verb (vP/VP).

- (2) SinC (Single Constituent) analysis (Kawashima 1998, Yamashita 2016, a.o.)  
FNQ and its host DP form a base-generated single constituent
- (3) InC (Independent Constituent) analysis (Miyagawa 1989, Nakanishi 2008, a.o.)  
FNQ and its host DP do not form a base-generated single constituent;  
they are independent constituents.
- (4) [<sub>VP/VP</sub> [<sub>DP</sub> host DP] [<sub>NumP/CIP</sub> FNQ] V/v]  
(e.g., [<sub>VP/VP</sub> [<sub>DP</sub> iPad-ga/-o] [<sub>NumP/CIP</sub> 2-dai] V/v])

In the reminder of this section, I summarize the discussion in Yamashita 2016 by focusing on the argument/adjunct asymmetry on AE.

One of the prominent features of Japanese syntax is a frequent use of null arguments (see Oku 1998, Shinohara 2006, Saito 2007, Takahashi 2008a, et. seq., Yamashita 2014, et. seq., Funakoshi 2016, Sakamoto 2016, et. seq., a.o.). For the sake of exposition, let us assume that such null arguments result from AE, an ellipsis operation (involving LF-copying), which exhibits the so-called *argument/adjunct asymmetry on AE*, as summarized in (5)a and (5)b, and AE is subject to the basic assumption about the potential target of ellipsis operation in (5)c (Oku 1998, Shinohara 2006, Saito 2007, Yamashita 2014, et. seq., Sakamoto 2016, et. seq., a.o.).

- (5) a. Null arguments are derived through AE, which is an LF-copying operation.<sup>3</sup>  
b. AE is applicable to only arguments, but not applicable to adjuncts.<sup>4</sup>  
c. Any segment can be the target of syntactic operation (e.g., ellipsis).

With this in mind, let us consider the ellipsis paradigm involving FNQs and its host DPs.<sup>5, 6,</sup>  
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- (6) [Mari-wa haha-ni iPad-o 2-dai katta].  
M.-TOP mom-DAT iPad-ACC 2-CL bought  
'Mari bought 2 iPads for (her) mother.'
- a. [Ken-mo haha-ni iPad-o 2-dai katta].  
K.-also mom-DAT iPad-ACC 2-CL bought  
'Ken also bought 2 iPads for (his) mother.'
- b. [Ken-mo haha-ni ~~iPad-o~~ 2-dai katta].
- c. \*[Ken-mo haha-ni iPad-o ~~2-dai~~ katta].
- d. [Ken-mo haha-ni ~~iPad-o~~ ~~2-dai~~ katta].
- e. \*[Ken-mo ~~haha-ni~~ iPad-o ~~2-dai~~ katta].

<sup>3</sup> See Shinohara 2006, Saito 2007, Yamashita 2014, Sakamoto 2017, 2019, a.o., for arguments against PF-deletion and pro analyses of AE.

<sup>4</sup> See Oku 1998, Saito 2007 for more discussion on the impossibility of adjunct ellipsis. See also Funakoshi 2016 for the legitimate cases of adjunct ellipsis.

<sup>5</sup> All the Japanese examples are transcribed in the *Hepberun (Hebon)* system Romanization. The translations in single quotes are intended to give the (rough) structure of the examples and are not meant to be the correct English translations.

<sup>6</sup> I use the double strike-through (~~~~XP~~~~) to indicate ellipsis.

<sup>7</sup> FNQs and its host subject DPs exhibit the same properties, but due to the space limitation, I can only provide here examples with FNQs and its host object DPs.

(6)a is the sentence without any ellipsis applied. (6)b shows that it is possible to delete the host DP *iPad-o* alone, excluding the FNQ *2-dai*; this can be achieved under both the SinC ((1)b) and InC analysis ((4)) since it involves AE of a host DP which is selected directly by the predicate; [ $_{DP}$   ~~$f_{DP}$  ~~*host DP*~~~~] [ $_{NumP/CIP}$  FNQ]] under (1)b, and [ $_{VP}$   ~~$f_{DP}$  ~~*host DP*~~~~] [ $_{NumP/CIP}$  FNQ] *V*] under (4). (6)c shows that it is not possible to delete the FNQ *2-dai* alone, excluding the host DP *iPad-o*. This fact indicates that FNQ in Japanese behaves like adjunct. Assuming this is on the right track, the deviance of (6)c can be captured under both the SinC ((3)b) and InC analysis ((4)) by the assumption (5)b.

The crucial paradigm to the present work is the contrast between the legitimate (6)d and the illegitimate (6)e. Let us first consider (6)d, which deletes both the FNQ and its host DP (direct object (DO)). Under the SinC approach, this is readily allowed because it involves a run-of-the-mill AE ( ~~$f_{DP}$  ~~*host DP*~~~~ [ ~~$_{NumP/CIP}$  FNQ~~]). Next, consider (6)e, which deletes the FNQ and the indirect object (IO) which is not associated with the FNQ. Note first that the deviance of (6)e in contrast to (6)d suggests that the legitimate ellipsis of FNQ does not involve the Principle of Minimal Compliance effect (Richards 1998); the possible AE of IO will not save the otherwise impossible adjunct ellipsis of FNQ in (6)e. Hence, this suggests that it is not the possible AE of DO that saves the otherwise impossible adjunct ellipsis of FNQ in (6)d. In addition, the deviance of (6)e also suggests that AE is not applicable to the “derived” constituent (aka surprising constituent). Even if “oblique movement” (Takano 2002; see also Sohn 1994) were available to form the otherwise independent constituents into the single constituent, the resulting constituent is not subject to AE. Given that the FNQ, being an adjunct, cannot undergo ellipsis (6)c, then the legitimate ellipsis in (6)d constitutes evidence for the SinC analysis where the FNQ and its host DP form a base-generated single constituent. And the contrast between the legitimate (6)d and the illegitimate (6)e constitute evidence against the InC analysis where the FNQ and its host DP do not form a base-generated single constituent, but are instead generated as independent constituents.

In sum, what I have shown in Yamashita 2016 is that, while the SinC analysis (2)/(1)b can capture the structural difference between the FNQ and its host DP (DO) and the FNQ and the non-host DP (IO) (accounting for the ellipsis paradigm), the InC analysis (3)/(4) cannot (failing to account for the ellipsis paradigm).

### 3. On the Ellipsis of ADVs in Japanese

In this section, I demonstrate that ADVs (aka secondary predicates) in Japanese display the same paradigm involving the argument/adjunct asymmetry on AE, and hence just like FNQs, ADVs form a base-generated single constituent with its host DPs (7) (which form the structure depicted in (1)a), and is not an independent constituent (8) (which form the structure depicted in (9)).<sup>8</sup>

- (7) SinC (Single Constituent) analysis  
ADV and its host DP form a base-generated single constituent.
- (8) InC (Independent Constituent) analysis (Miyagawa 1989)  
ADV and its host DP do not form a base-generated single constituent;  
they are independent constituents.

<sup>8</sup> In Yamashita 2015, 2016, I also used the ban on split multiple long-distance scrambling to show that FNQs forms a single constituent with its host DPs. ADVs and its host DPs exhibit the same properties (see Yamashita 2019), but I cannot discuss them due to the space limitation.

- (9) [<sub>VP/VP</sub> [<sub>DP</sub> host DP] [<sub>AdvP</sub> ADV] V/v]  
 (e.g., [<sub>VP</sub> [<sub>DP</sub> Mari-ga] [<sub>AdvP</sub> hadaka-de] VP v], [<sub>VP</sub> [<sub>DP</sub> sake-o] [<sub>AdvP</sub> hiya-de] V])

The ellipsis paradigm is provided in (10) (for subject-oriented ADVs) and (11) (for object-oriented ADVs).

- (10) [Nao-wa [naze nyuyoku-go Mari-ga hadaka-de biiru-o nomu-ka-o] shitteiru]-ga,  
 N.-TOP why after.bath M.-NOM naked-DE beer-ACC drink-Q-ACC know-but  
 ‘[Nao knows [why Mari drinks beer naked after taking bath]], but’  
 a. [Rei-wa [naze nyuyoku-go Mari-ga hadaka-de biiru-o nomu-ka-o] shiranai].  
 R.-TOP why after.bath M.-NOM naked-DE beer-ACC drink-Q-ACC know.not  
 ‘[Rei doesn’t know [why Mari drinks beer naked after taking bath]].’  
 b. [Rei-wa [naze nyuyoku-go ~~Mari-ga~~ hadaka-de biiru-o nomu-ka-o] shiranai].  
 c. \*[Rei-wa [naze nyuyoku-go Mari-ga ~~hadaka-de~~ biiru-o nomu-ka-o] shiranai].  
 d. [Rei-wa [naze nyuyoku-go ~~Mari-ga hadaka-de~~ biiru-o nomu-ka-o] shiranai].  
 e. \*[Rei-wa [naze nyuyoku-go Mari-ga ~~hadaka-de biiru-o~~ nomu-ka-o] shiranai].
- (11) [Mari-wa haha-ni sake-o hiya-de furumatta]-ga,  
 M.-TOP mom-DAT sake-ACC cold-DE served-but  
 ‘Mari served sake cold for (her) mom, but’  
 a. [Ken-wa haha-ni sake-o hiya-de furumawanakatta].  
 K.-TOP mom-DAT sake-ACC cold-DE served.not  
 ‘Ken did not serve sake cold for (his) mom.’  
 b. [Ken-wa haha-ni ~~sake-o~~ hiya-de furumawanakatta].  
 c. \*[Ken-wa haha-ni sake-o ~~hiya-de~~ furumawanakatta].  
 d. [Ken-wa haha-ni ~~sake-o hiya-de~~ furumawanakatta].  
 e. \*[Ken-wa ~~haha-ni~~ sake-o ~~hiya-de~~ furumawanakatta].

(10)a and (11)a are the sentence without any ellipsis applied. (10)b and (11)b show that it is possible to delete the host DP alone, excluding the ADV; this can be achieved under both the SinC ((1)a) and InC analysis ((9)) since it involves AE of a host DP which is selected directly by the predicate; [<sub>DP</sub> ~~f<sub>DP</sub> host DP~~] [<sub>AdvP</sub> ADV]] under (1)a, and [<sub>VP</sub> ~~f<sub>DP</sub> host DP~~] [<sub>AdvP</sub> ADV] V] under (9). (10)c and (11)c show that it is not possible to delete the ADV alone, excluding the host DP. This fact indicates that ADV in Japanese behaves like adjunct, just like FNQ. Assuming this is on the right track, the deviance of (10)c and (11)c can be captured under both the SinC ((7)/(1)a) and InC analysis ((8)/(9)) by the assumption (5)b.

The crucial paradigm to the present work is the contrast between the legitimate (10)d and (11)d and the illegitimate (10)e and (11)e. Let us first consider d-examples, which deletes both the ADV and its host DP. Under the SinC approach, this is readily allowed because it involves a run-of-the-mill AE (~~f<sub>DP</sub> host DP~~ ~~f<sub>AdvP</sub> ADV~~). Next, consider e-examples, which deletes the ADV and the argument which is not associated with the ADV. Note first that the deviance of e-examples in contrast to d-examples suggests that the legitimate ellipsis of ADV does not involve the Principle of Minimal Compliance effect (Richards 1998); the possible AE will not save the otherwise impossible adjunct ellipsis of ADV in e-examples. Hence, this suggests that it is not the possible AE of host DP per se that saves the otherwise impossible adjunct ellipsis of ADV in d-examples. In addition, the deviance of e-examples also suggests that AE is not applicable to the “derived” constituent. Even if “oblique movement” (Takano 2002; see also Sohn 1994) were

available to form the otherwise independent constituents into the single constituent, the resulting constituent is not subject to AE. Given that the ADV, being an adjunct, cannot undergo ellipsis ((10)c and (11)c), then the legitimate ellipsis in (10)d and (11)d constitutes evidence for the SinC analysis where the ADV and its host DP form a base-generated single constituent. And the contrast between the legitimate (10)d and (11)d and the illegitimate (10)e and (11)e constitute evidence against the InC analysis where the ADV and its host DP do not form a base-generated single constituent, but are instead generated as independent constituents.

In sum, while the SinC analysis of ADVs and its host DPs ((7)/(1)a) can capture the structural difference between the ADV and its host DP (DO) and the ADV and the non-host DP (IO) (accounting for the ellipsis paradigm), the InC analysis ((8)/(9)) cannot (failing to account for the ellipsis paradigm).

#### 4. Two Related Issues

Before concluding the paper, I will briefly discuss two related issues: (i) on the adverbial nature of ADVs and (ii) on the actual derivation of ellipsis involving ADVs.

##### 4.1. On the Adverbial Nature of ADVs in Japanese

Note that under the SinC analysis, since ADV is adjoined to DP selected by v/V as in (12), not only the argument DP but also the ADV are in the minimal domain of v/V (see Chomsky 1995: 178). This allows the argument DP, the ADV, and the v/V to establish predication relationships under the theory of predication proposed by Bowers 1993 and Den Dikken 2006. Thus, under the SinC analysis, although ADVs look like adnominal in the sense that they are merged with DP but not with vP/VP, they are adverbial as well, which should be able to capture the previous observations regarding the adverbial nature of ADVs (Miyagawa 1989, Koizumi 1994, a.o.).

- (12) a.  $[_{VP} [_{DP} [_{DP} \text{ host DP (SUB)}] [_{AdvP} \text{ ADV}]] [_{VP} \text{ OBJ V}] v]$  (Subject-oriented ADV)  
 b.  $[_{VP} \text{ SUB} [_{VP} [_{DP} [_{DP} \text{ host DP (OBJ)}] [_{AdvP} \text{ ADV}]] V] v]$  (Object-oriented ADV)

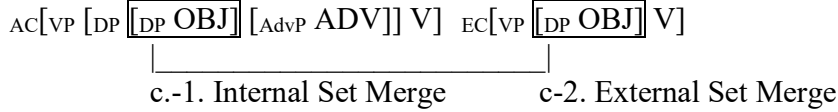
##### 4.2. On the Derivation of Ellipsis involving ADVs

Now let us illustrate how the actual derivation of legitimate ellipsis involving ADVs in Japanese proceeds under the SinC analysis, together with the basic assumptions about AE and ellipsis operation in (5), by taking object-oriented ADVs ((11)) as an example. What is of particular interest is that the actual LF-copying process can be regarded as what I call here as “Hybrid Merge” (which is equivalent of what Sakamoto (2016) referred as “Copy & (covert) Merge”), a composite of (i) Internal Set Merge and (ii) External Set Merge, which is in fact “Sideward Merge.” (13) shows the crucial relevant steps of derivation of (11)b involving AE of object excluding ADV, and (14) shows that of (11)d involving AE of object including ADV.

##### (13) Derivation of (11)b:

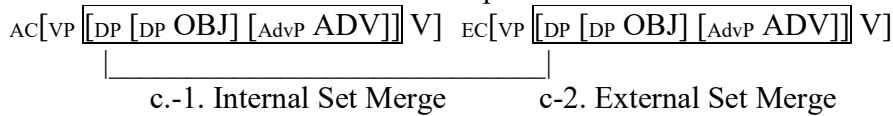
- a. External Pair Merge of OBJ and ADV in the antecedent clause (AC):  
 $AC[_{DP} [_{DP} \text{ OBJ}] [_{AdvP} \text{ ADV}]]$   
 b. External Set Merge of OBJ+ADV and V in the antecedent clause:  
 $AC[_{VP} [_{DP} [_{DP} \text{ OBJ}] [_{AdvP} \text{ ADV}]] V]$

- c. Hybrid Set Merge (=LF-copying) of OBJ targeting the lower segment of DP in the antecedent clause and V in the elliptical clause (EC):



(14) Derivation of (11)d:

- a. External Pair Merge of OBJ and ADV in the antecedent clause:  
 $\text{AC}[\text{DP} [\text{DP OBJ}] [\text{AdvP ADV}]]$   
 b. External Set Merge of OBJ+ADV and V in the antecedent clause:  
 $\text{AC}[\text{VP} [\text{DP} [\text{DP OBJ}] [\text{AdvP ADV}]] \text{V}]$   
 c. Hybrid Set Merge (=LF-copying) of OBJ targeting the highest segment of DP in the antecedent clause and V in the elliptical clause:



Note that at the point when the target of “syntactic operation” is determined – selecting the lower or the highest segment of DP (which eventually ends up in AE in (11)b and (11)d) –, it remains to be seen (unless a look-ahead is exploited) whether the “LF-copied” argument undergoes what kind of subsequent syntactic operations, e.g., AE or QR, before it is actually “re-merged.”<sup>9</sup> And since whether the targeted (i.e., LF-copied) phrase undergoes AE or QR, it is “detached” from the already constructed structure; hence, it is a sort of Internal Set Merge given that what is already externally merged undergoes further merge. And the actual merge procedure that puts “LF-copied” OBJ in the antecedent clause and V in the elliptical clause is External Set Merge. Hence, to the extent that LF-copying analysis of AE is on the right track, and the relevant syntactic operation is available in grammar, it implies that “Hybrid Merge”/“Sideward Merge” exists. If so, the studies on AE in Japanese has a potential to contribute to the theoretical discussion on the nature of Merge and Workspace, as pursued in Chomsky 2013, 2015, and Chomsky et. al. 2019. This intriguing research project is left for future research.

## 5. Conclusion

To conclude, building on the evidence involving the argument/adjunct asymmetry on argument ellipsis, I argued for the single constituent (SinC) analysis for the so-called subject- and object-oriented adverbs (ADV)s in Japanese; ADVs in Japanese form a base-generated single constituent with its host DP, and the structure of ADV and its host DP (e.g., *sake-o hiya-de*) is “[DP [DP *host DP (sake-o)*] [AdvP *ADV (hiya-de)*]],” where the ADV is adjoined to its host DP, and the host DP as a result functions as a lower segment of DP, which is essentially same as the analysis I put forth in Yamashita 2015, 2016 for floating numeral quantifiers and its host DPs. I also discussed the proposed SinC analysis accounts for the adverbial nature of ADVs, owing to its adjunct status. In addition, I showed argument ellipsis carried out as LF-copying is an instance of “Hybrid Merge”/“Sideward Merge,” and this may shed lights to the recent theory of Merge and Workspace (Chomsky 2013, 2015, and Chomsky et. al. 2019).

<sup>9</sup> Recall here that quantificational argument can be the target of AE (Takahashi 2008a, b, a.o.) and QR is available in Japanese (Sakamoto 2017, 2019, a.o.).

Last but not the least, the proposed SinC analysis counters with the classic analyses (referred here as the independent constituent (InC) analysis) that treats subject- and object-oriented ADVs (aka secondary predicates) as adverbial adjuncts which are externally pair merged with vP/VP (Miyagawa 1989, Koizumi 1994, a.o.)), and not with DP. Yet, to the extent that this analysis is on the right track, it encourages us to re-unify the treatment of ADVs and FNQs in Japanese as in (15), updating the unification first entertained in Miyagawa 1989 (16). Thus, it provides support for Miyagawa's insight that ADVs and FNQs in Japanese are of the same syntactic species.

- (15) Re-unification of ADVs and FNQs:  
ADV and FNQs form a base-generated single constituent with its host DPs;  
they are adjoined to DP (i.e., SinC (Single Constituent) analysis).
- (16) Unification of ADVs and FNQs (Miyagawa 1989):  
ADV and FNQs do not form a base-generated single constituent with its host DPs;  
they are adjoined to vP/VP (i.e., InC (Independent Constituent) analysis).

I hope that the present research will facilitate further inquiry into not only ADVs and FNQs in Japanese but also cross-linguistic and comparative studies on these elements, as well as how Merge is carried out in human language.

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