Re-unifying Floating Numeral Quantifiers and Secondary Predicates in Japanese*

Hideaki Yamashita
Yokohama City University
hy_aka_sange@hotmail.com

Abstract

Miyagawa 1989 unified the treatment of floating numeral quantifiers and secondary predicates in Japanese as *adverbial adjuncts* adjoined to vP/VP not forming a constituent with its host DP it is associated with. In so doing, he showed how analyzing such phenomena instantiates trace, contributing to the linguistic theory at that time. The aim of this paper is to scrutinize such unification building on (i) the conditions that apply to the ellipsis of arguments and adjuncts and (ii) the conditions that apply to the multiple long-distance scrambling. It shows that, while the unification of floating numeral quantifiers and secondary predicates in Japanese is kept intact, it needs to be re-unified; they *can* be *adnominal adjuncts* which is adjoined to its host DP forming a base-generated single constituent. In so doing, it shows that how analyzing such phenomena instantiates free application of merge, contributing to the current linguistic theory.

1 Introduction

2019 marks the 30th anniversary of Miyagawa 1989, one of the most influential book on Japanese generative syntax which showed how the study on syntax of Japanese can contribute to the linguistic theory. One significant finding Miyagawa provided in that seminal work is about the common properties floating numeral quantifiers (FNQs) and secondary predicates (2ndPs) exhibit. He unified the treatment of FNQs and 2ndPs in Japanese as *adverbial adjuncts* adjoined to vP/VP not forming a constituent with its host DP it is associated with, having the structure depicted in (1) (which is adjusted to the minimalist framework (Chomsky 1995, et. seq.)).[1]

(1) a. [$_{vP/VP}$ [$_{DP}$ host DP] [$_{ClP}$ FNQ] V/v]
a'. [$_{vP/VP}$ [$_{DP}$ sake-o] [$_{ClP}$ 3-bon] V/v]
b. [$_{vP/VP}$ [$_{DP}$ host DP] [$_{AdvP}$ 2ndP] V/v]
b'. [$_{vP/VP}$ [$_{DP}$ sake-o] [$_{AdvP}$ hiya-de] V/v]

In so doing, he showed how analyzing such phenomena instantiates trace, contributing to the linguistic theory at that time, especially the (trace) theory of movement.

The aim of this paper is to scrutinize such unification building on (i) the conditions that apply to the ellipsis of arguments and adjuncts and (ii) the conditions that apply to multiple long-distance scrambling. It shows that, while the unification of FNQs and 2ndPs in Japanese is kept intact (supporting Miyagawa's insight), it needs to be re-unified (departing from Miyagawa's analysis); they *can* be *adnominal adjuncts* which is adjoined to its host DP forming a base-generated single constituent, having the structure depicted in (2).

(2) a. [$_{DP}$ [$_{DP}$ host DP] [$_{ClP}$ FNQ]]
a'. [$_{DP}$ [$_{DP}$ sake-o] [$_{ClP}$ 2-hon]]
b. [$_{DP}$ [$_{DP}$ host DP] [$_{AdvP}$ 2ndP]]
b'. [$_{DP}$ [$_{DP}$ sake-o] [$_{AdvP}$ hiya-de]]

Put it differently, I will argue for the Single Constituent (SinC) analysis (3) and argue against the Independent Constituent (InC) analysis (4).

* This work merged my works on floating numeral quantifiers (Yamashita 2015, 2016) and secondary predicates (Yamashita 2019), which is then developed by incorporating the two "species" simultaneously. I'm indebted to those people, especially Hisatsugu Kitahara, Masao Ochi, Yuta Sakamoto, Takashi Toyoshima, and Asako Uchibori, who I had fruitful discussions with, and gave me insightful comments. Needless to say, all the inadequacies are my own.

[1] I will be agnostic about the 'label' of FNQs and 2ndPs and use 'ClP' (= Classifiers Phrase) and 'AdvP' (Adverbial Phrase) merely for expository purpose, without making any theoretical commitment.

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(3) SinC (Single Constituent) analysis
(Re-unification of FNQs and 2ndPs):
FNQs and 2ndPs can form a base-generated single constituent with its host DPs; they can be adjoined to DP ((2)).

(4) InC (Independent Constituent) analysis
(Unification of FNQs and 2ndPs):
FNQs and 2ndPs do not form a base-generated single constituent with its host DPs; they are adjoined to vP/VP ((1)).

In so doing, I will show how analyzing such phenomena instantiates free application of merge, aiming to contribute to the current linguistic theory, especially the theory of merge developed in Chomsky 2013, 2015, and Chomsky et. al. 2019 in which free application of merge is elaborated.

The organization of this paper is as follows. In Section 2, I will show that re-unification is called for, building on the conditions that apply to the ellipsis of arguments and adjuncts. In Section 3, I will show that re-unification is called for, building on the conditions that apply to the multiple long-distance scrambling. In Section 4, I will discuss a theoretical issues regarding the theory of merge, building on new set of data involving multiple long-distance scrambling. Section 5 is a conclusion.

2 Ellipsis – Argument/Adjunct Asymmetry on Argument Ellipsis

In this section, building on the paradigm involving *argument/adjunct asymmetry on argument ellipsis* (AE), I show that, contrary to the classic InC analyses that treat FNQs and 2ndPs in Japanese as adverbial adjuncts adjoined to vP/VP not forming a constituent with its host DP it is associated with, such adjuncts *can* be *adnominal adjuncts* which is adjoined to its host DP forming a base-generated single constituent, and the host DP as a result functions as a lower segment of DP, as in (2) above.

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 (i) 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 (ii) 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.[2]
b. AE is applicable to only arguments, but not applicable to adjuncts.[3]
c. Any segment can be the target of syntactic operation (e.g., ellipsis).

With this in mind, let us look at the ellipsis paradigm involving (i) FNQs and its host DPs (6) (taken from Yamashita 2015, 2016) and (ii) 2ndPs and its host DPs (7) (taken from Yamashita 2019), which shows exactly the same behaviors.[4, 5, 6]

(6) [Mari-wahaha-ni iPad-o 2-dai
M.-TOP mom-DAT iPad-ACC 2-CL
katta].
bought
'Mari bought 2 iPads for (her) mother.'
a. [Ken-mo haha-ni iPad-o 2-dai
K.-also mom-DAT iPad-ACC 2-CL
katta].
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].

[2] See Shinohara 2006, Saito 2007, Yamashita 2014, Sakamoto 2017, 2019, a.o., for arguments against PF-deletion and pro analyses of AE.
[3] 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.
[4] All the Japanese examples are transcribed in the *Hepburn (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. Translations and glosses are provided minimally, only when necessary.
[5] I use the double strike-through (~~*XP*~~) to indicate ellipsis.
[6] Both (i) FNQs and its host subject DPs and (ii) 2ndPs and its host subject DPs exhibit the same properties, but due to the space limitation, I can only provide here examples involving object DPs.

d. [Ken-mo haha-ni ~~iPad-o~~ ~~2-dai~~ katta].
e. *[Ken-mo ~~haha-ni~~ iPad-o ~~2-dai~~ katta].

(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 ((3)) and InC analysis ((4)) since it involves AE of a host DP which is selected directly by the predicate; *[$_{DP}$ ~~[$_{DP}$ host DP]~~ [$_{ClP}$ FNQ]]* under (3), and *[$_{VP}$ ~~[$_{DP}$ host DP]~~ [$_{ClP}$ 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)) 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 (~~[$_{DP}$ [$_{DP}$ host DP] [$_{ClP}$ 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.

(7) [Mari-wahaha-ni sake-o hiya-de M.-TOP mom-DAT sake-ACC cold-DE furumatta]-ga,
served-but
'Mari served sake cold for (her) mom, but …'
a. [Ken-wa haha-ni sake-o hiya-de K.-TOP mom-DAT sake-ACC cold-DE furumawanakatta].
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].

(7)a is the sentence without any ellipsis applied. (7)b shows that it is possible to delete the host DP alone, excluding the 2ndP; this can be achieved under both the SinC ((3)) and InC analysis ((4)) since it involves AE of a host DP which is selected directly by the predicate; *[$_{DP}$ ~~[$_{DP}$ host DP]~~ [$_{AdvP}$ 2ndP]]* under (3), and *[$_{VP}$ ~~[$_{DP}$ host DP]~~ [$_{AdvP}$ 2ndP] V]* under (4). (7)c shows that it is not possible to delete the 2ndP alone, excluding the host DP. This fact indicates that 2ndP in Japanese behaves like adjunct. Assuming this is on the right track, the deviance of (5)c can be captured under both the SinC ((3)) and InC analysis ((4)) by the assumption (5)b.

The crucial paradigm to the present work is the contrast between the legitimate (7)d and the illegitimate (7)e. Let us first consider (7)d, which deletes both the 2ndP and its host DP. Under the SinC approach, this is readily allowed because it involves a run-of-the-mill AE (~~[$_{DP}$ [$_{DP}$ host DP] [$_{AdvP}$ 2ndP]]~~). Next, consider (7)e, which deletes the 2ndP and the argument which is not associated with the ADV. Note first that the deviance of (7)e in contrast to (7)d suggests that the legitimate ellipsis of 2ndP does not involve the Principle of Minimal Compliance effect (Richards 1998); the

possible AE will not save the otherwise impossible adjunct ellipsis of 2ndP in (7)e. Hence, this suggests that it is not the possible AE of host DP per se that saves the otherwise impossible adjunct ellipsis of 2ndP in (7)d. In addition, the deviance of (7)e 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 2ndP, being an adjunct, cannot undergo ellipsis ((7)c), then the legitimate ellipsis in (7)d constitutes evidence for the SinC analysis where the 2ndP and its host DP form a base-generated single constituent. And the contrast between the legitimate (7)d and the illegitimate (7)e constitute evidence against the InC analysis where the 2ndP and its host DP do not form a base-generated single constituent, but are instead generated as independent constituents.

In sum, both (i) FNQs and its host DPs (6) and (ii) 2ndPs and its host DPs (7) show exactly the same behaviors with respect to the ellipsis paradigm, i.e., *argument/adjunct asymmetry on AE*. And I have shown that while the SinC analysis of these adjuncts (i.e., FNQs and 2ndPs) and its host DPs ((3)) can capture the structural difference between the adjuncts and its host DP (DO) and the adjuncts and the non-host DP (IO) (accounting for the ellipsis paradigm), the InC analysis ((4)) cannot (failing to account for the ellipsis paradigm). But what is crucial is that FNQs and 2ndPs should be treated uniformly (supporting Miyagawa's (1989) insight), but it needs to be re-unified (departing from Miyagawa's analysis); they *can* be *adnominal adjuncts* which is attached to its host DP by adjoining to it and forming a constituent with its host argument DP, having the structure depicted in (2) above.

3 Scrambling – Ban on Split Multiple Long-distance Scrambling

In this section, building on the paradigm involving what Yamashita (2015, 2016) referred as *the ban on split multiple long-distance scrambling* (BSML) in Japanese, I show that, contrary to the classic InC analyses that treat FNQs and 2ndPs in Japanese as adverbial adjuncts adjoined to vP/VP not forming a constituent with its host DP it is associated with, such adjuncts *can* be *adnominal adjuncts* which is adjoined to its host DP forming a base-generated single constituent, and the host DP as a result functions as a lower segment of DP, as in (2) above.

In addition to the frequent use of null arguments, one of the prominent features of Japanese syntax is that scrambling, especially, long-distance scrambling (LDS) is allowed (Saito 1985, Sakai 1994, Saito and Fukui 1998, a.o.). For the sake of exposition, let us assume that (i) such LDS results from overt upward/leftward movement, an optional dislocation operation, summarized in (8), which is evidenced by (9)–(12), and (ii) scrambling is subject to the basic assumption about the potential target of movement operation in (8)c.

(8) a. LDS is unbounded; i.e., super-LDS is possible.
b. LDS can apply multiply.
c. Any segment can be the target of syntactic operation (e.g., scrambling).

In (9), *Aya-ni* or *sake-o* which is first generated in the most embedded clause (CP1) undergoes LDS to the top of CP2 (which is immediately above CP1).

(9) a. [$_{CP3}$ Yui-ga [$_{CP2}$ Aya-ni$_j$ Ken-wa
Y.-NOM Aya-DAT K.-TOP
[$_{CP1}$ Mari-ga naze t$_j$ sake-o
M.-NOM why sake-ACC
(2-hon/hiya-de) furumatta-to] omotta-ka]
2-CL/cold-DE served-C thought-Q
shiritagatteiru-yo].
wants.to.know-SFP
'[Yui wants to know [Q Ken thought [that Mari served Aya (two) sake(s) (cold) why]]].'
b. [$_{CP3}$ Yui-ga [$_{CP2}$ sake-o$_i$ Ken-wa
[$_{CP1}$ Mari-ga naze Aya-ni t$_i$
(2-hon/hiya-de) furumatta-to] omotta-ka]
shiritagatteiru-yo].

In addition, it is not impossible to continue LDS to the higher clause(s) (Sakai 1994). As can be seen in (10), *Aya-ni* or *sake-o* can undergo subsequent LDS (hereafter, super-LDS) to the top of CP3, which end up in crossing two CP boundaries from its base-generated position.

(10) a. [$_{CP3}$ Aya-ni$_j$ Yui-ga [$_{CP2}$ t$_j$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ sake-o (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Sake-o$_i$ Yui-ga [$_{CP2}$ t$_i$ Ken-wa [$_{CP1}$ Mari-ga naze Aya-ni t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

Furthermore, the number of phrases that can undergo LDS is in principle unlimited (Saito and Fukui 1998:444, fn.8), and two or more phrases can undergo LDS; that is, multiple (super-)LDS is possible, as in (11) and (12).

(11) a. [$_{CP3}$ Yui-ga [$_{CP2}$ Aya-ni$_j$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Yui-ga [$_{CP2}$ sake-o$_i$ Aya-ni$_j$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

(12) a. [$_{CP3}$ Aya-ni$_j$ sake-o$_i$ Yui-ga [$_{CP2}$ t$_j$ t$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Sake-o$_i$ Aya-ni$_j$ Yui-ga [$_{CP2}$ t$_i$ t$_j$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

Thus, LDS in Japanese can in principle be unbounded, crossing more than two or more clausal boundaries (yielding (super-)LDS) and can apply multiply, moving two or more phrases (yielding multiple (super-)LDS).

An interesting quirk about multiple LDS is that there is a curious constraint exemplified in (13), which is referred as *the ban on split multiple LDS (BSML)* (Yamashita 2015, 2016).

(13) a. *[$_{CP3}$ Aya-ni$_j$ Yui-ga [$_{CP2}$ t$_j$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. *[$_{CP3}$ Sake-o$_i$ Yui-ga [$_{CP2}$ Aya-ni$_j$ t$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t$_j$ t$_i$ (2-hon/hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

As first observed on independent ground by Sakai (1994) and Sohn (1994), the otherwise possible multiple LDS/super-LDS becomes impossible when scrambled phrases end up in different landing sites: *(super-)LDSed phrases cannot be "split" apart, in the sense that they cannot end up in different landing sites; rather, they need to be in the same landing site*. To put it differently, *multiple (super-)LDSed phrases must be "adjacent" to each other*. Recall the legitimate cases of multiple (super-)LDS in (11) and (12), where multiple (super-)LDSed phrases are not split apart and kept adjacent.[7] If not, it becomes ungrammatical. Descriptively speaking, the BSML emerges when two clause-mate phrases which are not a syntactic constituent, such as *Aya-ni* (IO of CP1) and *sake-o* (DO of CP1), are not adjacent to each other at their landing sites. The state-of-affairs can be schematically represented as in (14).

(14) a. Multiple LDS
OK [$_{CP3}$ … [$_{CP2}$ *XP YP* … [$_{CP1}$ … t_{XP} t_{YP} …]]]

b. Multiple super-LDS
OK [[$_{CP3}$ *XP YP* … [$_{CP2}$ t_{XP} t_{YP} … [$_{CP1}$ … t_{XP} t_{YP} …]]]

c. Split multiple LDS
* [$_{CP3}$ *XP* … [$_{CP2}$ t_{XP} *YP* … [$_{CP1}$ … t_{XP} t_{YP} …]]]

With this in mind, let us look at the scrambling paradigm involving (i) FNQs and its host DPs (15) (based on Yamashita 2016: (14)) and (ii) 2ndPs and its host DPs (16), which shows exactly the same behaviors. That a multiple LDS ((15)a–b and (16)a–b) and a multiple super-LDS ((15)c–d and (16)c–d) is possible is not surprising. But what is interesting is that the BSML is inapplicable to a case involving both FNQs and its host DPs and 2ndPs and its host DPs; crucially, even what seems like an instance of split multiple LDS involving FNQs or 2ndPs and its host DPs is grammatical as in (15)e–f and (16)e–f.

[7] This holds true for (i) the otherwise possible multiple super-LDS involving argument and adjunct (e.g. *naze*) (a.k.a. the Free Ride effect) becomes impossible when they are split apart (Sohn 1994) and (ii) the otherwise possible multiple super-LDS involving two or more adjuncts.

(15) a. [$_{CP3}$ Yui-ga [$_{CP2}$ sake-o$_i$ 2-hon$_h$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Yui-ga [$_{CP2}$ 2-hon$_h$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

c. [$_{CP3}$ sake-o$_i$ 2-hon$_h$ Yui-ga [$_{CP2}$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

d. [$_{CP3}$ 2-hon$_h$ sake-o$_i$ Yui-ga [$_{CP2}$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

e. OK [$_{CP3}$ sake-o$_i$ Yui-ga [$_{CP2}$ 2-hon$_h$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

f. OK [$_{CP3}$ 2-hon$_h$ Yui-ga [$_{CP2}$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_h (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

(16) a. [$_{CP3}$ Yui-ga [$_{CP2}$ sake-o$_i$ hiya-de$_g$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Yui-ga [$_{CP2}$ hiya-de$_g$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

c. [$_{CP3}$ sake-o$_i$ hiya-de$_g$ Yui-ga [$_{CP2}$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

d. [$_{CP3}$ hiya-de$_g$ sake-o$_i$ Yui-ga [$_{CP2}$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

e. OK [$_{CP3}$ sake-o$_i$ Yui-ga [$_{CP2}$ hiya-de$_g$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

f. OK [$_{CP3}$ hiya-de$_g$ Yui-ga [$_{CP2}$ sake-o$_i$ Ken-wa [$_{CP1}$ Mari-ga naze t_i t_g (hiya-de) furumatta-to] omotta-ka] shiritagatteiru-yo].

The SinC approach offers a straightforward explanation why the so-called BSML is not at work in these cases. Under this analysis, what we see in e–f examples in (15) and (16) is not the same kind of split multiple LDS taking place in (13) which is ruled out by BSML; what is taking place here is *scrambling out of scrambled phrase*, having the derivation depicted in (17), which, in terms of derivation, is just like scrambling of DP out of scrambled CP (18), which is readily possible (Saito 1985, a.o.).

(17) $[_{ZP}\ YP \ldots [_{XP} \ldots t_{YP} \ldots] \ldots t_{XP} \ldots]$

(18) a. [$_{CP3}$ Aya-ni$_j$ Yui-ga [$_{CP2}$ [$_{CP1}$ Mari-ga naze t_j sake-o (2-hon/hiya-de) ageta-to]$_k$ Ken-wa t_k omotta-ka] shiritagatteiru-yo].

b. [$_{CP3}$ Sake-o$_i$ Yui-ga [$_{CP2}$ [$_{CP1}$ Mari-ga naze Aya-ni t_i (2-hon/hiya-de) ageta-to]$_k$ Ken-wa t_k omotta-ka] shiritagatteiru-yo].

Thus, whatever mechanisms that is responsible for BSML is not applicable for multiple application of LDS involved in (15)e–f, (16)e–f, and (18) since these are not "split" multiple LDS in terms of derivational procedure.

Under the InC approach, on the other hand, the multiple application of LDS involved in (15)e–f, (16)e–f, and (18) is the same kind of multiple application of LDS involving IO and DO in (13); i.e., it is an instance of "split" multiple LDS involving BSML. Thus, there is no way to tease apart the difference, failing to account for the contrast.

In sum, both (i) FNQs and its host DPs (15) and (ii) 2ndPs and its host DPs (16) show exactly the same behaviors with respect to the scrambling paradigm, i.e., *BSML*. While the SinC analysis can capture the difference between multiple LDS of FNQ or 2ndP and its host DP and multiple LDS of IO and DO (accounting for the absence/presence of BSML paradigm), the InC analysis cannot (failing to account for the absence/presence of BSML paradigm). But what is crucial is that FNQs and 2ndPs should be treated uniformly (supporting Miyagawa's (1989) insight), but it needs to be re-unified (departing from Miyagawa's analysis); they *can* be *adnominal adjuncts* which is adjoined to its host DP forming a base-generated single constituent, having the structure depicted in (2) above.

4 Theoretical Issue: On the Free Application of Merge

In this section, building on yet another paradigm of multiple long-distance scrambling (i.e., BSML) involving both FNQs and 2ndPs, I will discuss theoretical issues regarding merge and claim that the paradigm in question instantiates the free application of merge developed in Chomsky 2013, 2015, and Chomsky et. al. 2019.

Before discussing the crucial paradigm, let us first note that (as implicitly hinted in some of the examples in above) (i) FNQs and 2ndPs can co-occur and (ii) the order among FNQs, 2ndPs, and the host DPs are flexible as in (19).

(19) a. sake-o 2-hon hiya-de
b. sake-o hiya-de 2-hon
c. 2-hon sake-o hiya-de
d. hiya-de sake-o 2-hon
e. 2-hon hiya-de sake-o
f. hiya-de 2-hon sake-o

Now I propose that, extending the already proposed structure of FNQs and 2ndPs in (2), that the flexible word order in (19) *can* be generated by free application of merge proposed and developed in Chomsky 2013, 2015, and Chomsky et. al. 2019. More specifically, FNQs and 2ndP can either be left-adjoined and right-adjoined via External Pair Merge with its host DP as depicted in (20).

(20) a. $[_{DP}[_{DP}$ sake-o$]$ $[_{ClP}$ 2-hon$]$ $[_{AdvP}$ hiya-de$]]$
b. $[_{DP}[_{DP}$ sake-o$]$ $[_{AdvP}$ hiya-de$]$ $[_{ClP}$ 2-hon$]]$
c. $[_{DP}[_{ClP}$ 2-hon$]$ $[_{DP}$ sake-o$]$ $[_{AdvP}$ hiya-de$]]$
d. $[_{DP}[_{AdvP}$ hiya-de$][_{DP}$ sake-o$]$ $[_{ClP}$ 2-hon$]]$
e. $[_{DP}[_{ClP}$ 2-hon$]$ $[_{AdvP}$ hiya-de$]$ $[_{DP}$ sake-o$]]$
f. $[_{DP}[_{AdvP}$ hiya-de$]$ $[_{ClP}$ 2-hon$]$ $[_{DP}$ sake-o$]]$

With this in mind, let us look at the scrambling paradigm involving both FNQs and 2ndPs co-occur, which is schematically illustrated below, by focusing on cases in (19)a=(20)a and (19)b=(20)b.[8]

(21) a. Super-LDS of FNQ and LDS of 2ndP
OK $[_{CP3}$ *FNQ …* $[_{CP2}$ t_{FNQ} *2ndP …* $[_{CP1}$ *… OBJ* t_{FNQ} t_{2ndP} *…]]]*
b. Super-LDS of 2ndP and LDS of FNQ
OK $[_{CP3}$ *2ndP …* $[_{CP2}$ *FNQ* t_{2ndP} *…* $[_{CP1}$ *… OBJ* t_{FNQ} t_{2ndP} *…]]]*

What is of interest is that, these FNQs and 2ndPs need not be adjacent and can undergo (super-)LDS ending up in non-adjacent positions yielding split multiple LDS on the surface; yet, the BSML is not at work here.

These possible cases raises a potential problem to the SinC analysis which assigns the structure in (20), which simply adjoins FNQ and 2ndP to the host DP. This is so because, under this structure, two adjuncts do not form a base-generated single constituent. What can form a base-generated single constituent (and which in turn can be the target of syntactic operations based on segment; recall (5)c) with the structure (20) is depicted in (22) and (23) respectively, where the box indicates the possible constituency.

(22) a. $[_{DP}\boxed{[_{DP}$ sake-o$]}$ $[_{ClP}$ 2-hon$]$ $[_{AdvP}$ hiya-de$]]$
b $[_{DP}\boxed{[_{DP}$ sake-o$]$ $[_{ClP}$ 2-hon$]}$ $[_{AdvP}$ hiya-de$]]$
c. $\boxed{[_{DP}[_{DP}$ sake-o$]$ $[_{ClP}$ 2-hon$]$ $[_{AdvP}$ hiya-de$]]}$

(23) a. $[_{DP}\boxed{[_{DP}$ sake-o$]}$ $[_{AdvP}$ hiya-de$]$ $[_{ClP}$ 2-hon$]]$
b. $[_{DP}\boxed{[_{DP}$ sake-o$]$ $[_{AdvP}$ hiya-de$]}$ $[_{ClP}$ 2-hon$]]$
c. $\boxed{[_{DP}[_{DP}$ sake-o$]$ $[_{AdvP}$ hiya-de$]$ $[_{ClP}$ 2-hon$]]}$

The point is that if (22) and (23) are the only available structure, FNQs and 2ndPs must undergo the split multiple LDS just like that of IOs and DOs in (13), which end up in BSML.

But the problem is only apparent, and I argue that the possible cases can be handled properly under the SinC analysis. Then what kind of structure is formed for cases involving FNQs, 2ndPs, and the host DPs to account for the paradigm under discussion? I propose, based on the free application of merge advocated in Chomsky 2013, 2015, and Chomsky et. al. 2019, that in addition to the "normal" case where both FNQs and 2ndPs are adjoined (either leftward and/or rightward) to its host DP (20)/ (22)/(23), (24) is possible where FNQ and 2ndP are adjoined to each other first, and then this amalgam as a whole is adjoined to the DP. (25) and (26) depict

[8] Due to space limitation, I can only provide the schematics. I also note here that paradigm remain the same for c–f examples.

what can form a base-generated single constituent (and which in turn can be the target of syntactic operations based on segment; recall (5)c), where the box indicates the base-generated constituency.

(24) a. [DP [DP host DP][[ClP FNQ] [AdvP 2ndP]]]
a'. [DP [DP sake-o] [[ClP 2-hon] [AdvP hiya-de]]]
b. [DP [DP host DP][[AdvP 2ndP] [ClP FNQ]]]
b'. [DP [DP sake-o] [[AdvP hiya-de] [ClP 2-hon]]]

(25) a. [DP [DP sake-o] [[ClP 2-hon] [AdvP hiya-de]]]
b. [DP [DP sake-o] [[ClP 2-hon] [AdvP hiya-de]]]
c. [DP [DP sake-o] [[ClP 2-hon] [AdvP hiya-de]]]

(26) a. [DP [DP sake-o] [[AdvP hiya-de] [ClP 2-hon]]]
b. [DP [DP sake-o] [[AdvP hiya-de] [ClP 2-hon]]]
c. [DP [DP sake-o] [[AdvP hiya-de] [ClP 2-hon]]]

What is crucial is that with the structure (24), two adjuncts form a base-generated single constituent (as in (25)b and (26)b), and hence may be the target of syntactic operations. This makes it possible to allow the derivation where "FNQ+2ndP" or "2ndP+FNQ" first undergoes LDS as a single constituent, and then one of them is scrambled out undergoing super-LDS as depicted in (27).

(27) a. Super-LDS of FNQ and LDS of 2ndP
OK [CP3 *FNQ* ... [CP2 t_{FNQ} *2ndP* ...
[CP1 ... *OBJ* t_{FNQ} t_{2ndP} ...]]]
b. Super-LDS of 2ndP and LDS of FNQ
OK [CP3 *2ndP* ... [CP2 *FNQ* t_{2ndP} ...
[CP1 ...*OBJ* t_{FNQ} t_{2ndP} ...]]]

Thus, despite the surface, (21) is not an instance of the BSML.

To sum up, the absence of BSML with what seems like a split multiple LDS involving FNQ and 2ndP illustrated in (21) is accounted for under the SinC analysis since it involves the derivation depicted in (27) which shows that it is irrelevant to the BSML, which in turn is made available by the free application of merge, especially External Pair Merge (i.e., adjunction in the classical terminology), developed in Chomsky 2013, 2015, and Chomsky et. al. 2019, where selection (in a broad sense) can be irrelevant to the application of merge.

5 Conclusion

To conclude, building on the evidence involving (i) the argument/adjunct asymmetry on argument ellipsis and (ii) the ban on split multiple long-distance scrambling, I argued for the Single Constituent (SinC) analysis for the floating numeral quantifiers (FNQs) and the secondary predicates (2ndPs) in Japanese; these adjuncts in Japanese *can* be *adnominal adjuncts* which is adjoined to its host DP it is associated with, forming a base-generated single constituent, and the host DP as a result functions as a lower segment of DP, as depicted in (2) above. I also discussed cases where both FNQ and 2ndP co-occur with its host DP and its theoretical implication, and showed that the proposed analysis shed lights to the recent theory of merge allowing its free application developed in Chomsky 2013, 2015, and Chomsky et. al. 2019.

Last but not the least, although the SinC analysis developed in this paper counters with the classic analyses that treats FNQs and 2ndPs as adverbial adjuncts which are externally pair merged with vP/VP and not with DP – the Independent Constituent (InC) analysis (Miyagawa 1989, Koizumi 1994, a.o.)) –, to the extent that this analysis is on the right track, it re-unified the treatment of FNQs and 2ndPs in Japanese as in (3), reproduced here as (28), updating the unification first pursued in Miyagawa 1989 (4), reproduced here as (29).

(28) SinC (Single Constituent) analysis
(Re-unification of FNQs and 2ndPs):
FNQs and 2ndPs can form a base-generated single constituent with its host DPs; they can be adjoined to DP ((2)).

(29) InC (Independent Constituent) analysis
(Unification of FNQs and 2ndPs):
FNQs and 2ndPs do not form a base-generated single constituent with its host DPs; they are adjoined to vP/VP ((1)).

Thus, although the exact analysis is different and essentially contradictory, it nonetheless provides support for Miyagawa's insight that FNQs and 2ndPs in Japanese are of the same syntactic species and hence these two elements calls for a unification.

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