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A Note on Distributivity and Argument Ellipsis*

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1. Introduction

This squib examines the availability of distributive interpretation with the distributive marker *zutsu* in the elided context, which is exemplified in (1):

- (1) a. Taroo to Hanako-wa hon-o ni-satsu-zutsu katta.
Taroo and Hanako-TOP book-ACC two-CL-DIST buy.PAST
'Taroo and Hanako bought two books each.'
- b. Jiroo to Fuyuko-wa _____ kawanakatta.
Jiroo and Fuyuko-TOP buy.NEG.PAST
'Jiroo and Fuyuko did not buy two books each.'

(1b) can be interpreted as if the empty object position is occupied by *hon-o ni-satsu-zutsu*. Given the assumption that floating numerals (can) form a constituent (Watanabe 1996), we assume that the phrase is copied to the object position of (1b) from (1a). Based on Miyamoto's (2012) analysis of *zutsu*, the current squib seeks implications for Sakamoto's (2017) proposal, that only covert extraction is permitted out of null argument sites, regardless of movement type (A' or A) or null argument categories (clausal or nominal).

This squib is organized as follows: Section 2 restates Sakamoto's (2017) proposal. Then, to provide fundamental discussion, Section 3 introduces Miyamoto's (2012) analysis of the distributive marker in Japanese. Adopting Miyamoto's (2012) proposal, Section 4 presents data involving the distributive affix in question in order to show that overt extraction out of a null argument site in fact is available; the finding supports Miyamoto's (2019) claim that when moving elements end up having no phonetic content at the end of the derivation, their extraction out of null argument sites is permitted. Finally, Section 5 concludes the squib.

2. Overt and Covert Extraction out of Null Argument Sites

In this section, we briefly introduce Japanese data apparently indicating that extraction is only allowed out of null argument sites in covert syntax. Let us start with (2a-c):¹

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¹ Abbreviations that are used throughout this squib are as follows:

ACC = accusative, CL = classifier, DIST = distributive affix/marker, NOM = nominative, PASS = passive,

- (2) a. Fugu-o Hanako-wa [Taroo-ga t tabeta to] omotteiru kedo,
 blowfish-ACC Hanako-TOP Taroo-NOM eat.PAST that think.PRES though
 ‘(lit.) Although a blowfish₁, Hanako thinks [that Taroo ate *t*], ...’
- b. Dokutsurutake-o Sachiko-wa [Taroo-ga t tabeta to] omotteiru .
 destroying angel-ACC Sachiko-TOP Taroo-NOM eat.PAST that think.PRES
 ‘(lit.) A destroying angel, Sachiko thinks [that Taroo ate *t*].’
- c. *Dokutsurutake-o Sachiko-wa _____ omotteiru .
 destroying angel-ACC Sachiko-TOP think.PRES
 ‘(lit.) A destroying angel, Sachiko thinks _____.’

(Tanaka 2008: 11)

Following (2a), (2b) is grammatical while (2c) is not (see Shinohara 2006, Saito 2007, Tanaka 2008, among others). The ungrammaticality of (2c) illustrates that overt movement out of a null argument site is prohibited.

In contrast, covert movement out of a null argument is permitted. Consider the following comparative deletion examples:

- (3) a. [Op₁ [Taroo-ga *t*₁ yonda to] Kanako-ni iwareteiru yori(mo)]
 Taroo-NOM read.PAST that Kanako-by say.PASS.PRES than(also)
 Hanako-wa takusan ronbun-o yondeiru.
 Hanako-TOP many paper -ACC read.PRES
 ‘(lit.) Hanako reads more papers than [Op₁ [it is said by Kanako [that Taroo reads *t*₁]].’
- b. Sarani, [Op₁ [Taroo-ga *t*₁ yonda to] Ayaka-ni iwareteiru
 furthermore Taroo-NOM read.PAST that Ayaka-by say.PASS.PRES
 yori(mo)] kanojo-wa takusan ronbun-o yondeiru.
 than(also) she -TOP many paper -ACC read.PRES
 ‘(lit.) Furthermore, she reads more papers than [Op₁ [it is said by Ayaka [that Taroo reads *t*₁]].’
- c. Sarani, [Op₁ _____ Ayaka-ni iwareteiru yori(mo)] kanojo-wa
 furthermore Ayaka-by say.PASS.PRES than(also) she -TOP
 takusan ronbun-o yondeiru.
 many paper -ACC read.PRES
 ‘(lit.) Furthermore, she reads more papers than [Op₁ [it is said by Ayaka _____]].’

Unlike the contrast between (2b) and (2c), no grammatical difference emerges between (3b) and (3c).

Sakamoto takes this symmetry between these two examples as evidence of the hypothesis that covert movement is permitted out of a null argument site.

Kikuchi (1987: 6-7) shows that comparative deletion exhibits island effects: for reasons of space, we cite one example of complex NP effects:

- (4) a. [Op₁ [John-ga t₁ yonda to] iwareteiru yori(mo)] Mary-wa
 John-NOM read.PAST that say.PASS.PRES than(also) Mary-TOP
 takusan hon-o yondeiru.
 many book-ACC read.PRES
 ‘(lit.) Hanako reads more books than [Op₁ [it is said [that Taroo reads t₁]].’
- b. *[Op₁ [[Sono tsukue-de t₁ yondeita] hito]-o John-ga nagutta
 the table -on read.PROG.PAST person-ACC John-NOM hit.PAST
 yori(mo)] Paul-wa takusan hon-o yondeita.
 than(also) Paul-TOP many book-ACC read.PRES
 ‘(lit.) Paul reads more books than [Op₁ [than John hit [a person [who was reading t₁ at the table]].’

A potential conclusion from the ungrammatical status of (4b), in contrast to (4a), along with the grammatical status of (3c), is that extraction of a phonetically null element is permitted out of a null argument site in overt syntax, given the assumption that Subjacency is only operative in overt syntax (Lasnik and Saito 1984).

Sakamoto (2017) rejects this possibility, based on Chomsky’s (1995) distinction between strong and weak features: strong features, by definition, can only be licensed by movement in overt syntax whereas weak ones can be licensed by movement in LF. The important assumption here is that the presence of strong features must affect word order, which in turn indicates that covert movement cannot be triggered by strong features: hence, it must be triggered by weak features, which amounts to saying that covert movement must take place in LF under Chomsky’s grammatical architecture. Under this conception of grammar, the grammatical status of (3c) leads Sakamoto (2017) to assert that movement out of a null argument site is allowed in LF.

In the current squib, while we do not immediately argue against Sakamoto (2017), we show that there is a case in Japanese where Op-movement takes place out of a null argument site in overt syntax, providing a testing ground for Sakamoto’s (2017) dichotomy between overt and covert movement.

3. Distributive Interpretation with the Distributive Affix *Zutsu*

Miyamoto (2008) argues that distributive interpretation available in sentences containing the

distributive affix *zutsu* is realized via distributive operator (D-Op) in overt syntax. Consider the examples in (5):

- (5) a. ??gakusei futa-ri-zutsu-ga furansugo to doitsugo-o benkyooshiteiru (-koto)
 student two-CL-DIST-NOM French and German-ACC study.PROG.PRES(-fact)
 ‘(lit.) Two students each are studying French and German.’
- b. furansugo to doitsugo-o₁ gakusei futa-ri-zutsu-ga t₁ benkyooshiteiru (-koto)
 French and German-ACC student two-CL-DIST-NOM study.PROG.PRES(-fact)
 ‘(lit.) French and German₁ two students each are studying t₁.’
- c. *gakusei futa-ri-zutsu-ga furansugo to doitsugo-o yoku shitteiru (-koto)
 student two-CL-DIST-NOM French and German-ACC well know.PRES(-fact)
 ‘(lit.) Two students each are studying French and German.’
- d. ?furansugo to doitsugo-o₁ gakusei futa-ri-zutsu-ga t₁ yoku shitteiru (-koto)
 French and German-ACC student two-CL-DIST-NOM well know.PRES(-fact)
 ‘(lit.) French and German₁ two students each are studying t₁.’

(Miyamoto 2012: 51)

Suppose at the descriptive level that the plural NP must c-command the NP accompanied by the distributive affix in question at some point in derivation. What appears difficult, is to account for the asymmetry between (5a), which we take to be basically grammatical, and (5c), at the level of LF. Given the assumption that Quantifier Raising (QR) is available in Japanese (Sano 1985, Saito 2005, Takahashi 2011, among others), the plural NP in the object position comes to c-command the subject NP with the distributive affix in LF, and thus, the grammatical contrast between (5a) and (5c) should be nullified at that level. This, in turn, leads us to hypothesize that the distributive licensing in point takes place in overt syntax. If this is an accurate way to understand the paradigm in (5), it is no surprise that (5b) and (5d) are both grammatical since the relative order of the subject and the object NPs is the same in these examples.

Island effects, moreover, seem to be observed in the relationship between the plural NP and the NP accompanied by the distributive affix. Observe the contrast between (6a) and (6b):

- (6) a. Taroo to Hanako-ga [Jiroo-ga hon-o ni-satsu-zutsu yonda to]
 Taroo and Hanako-NOM Jiroo-NOM book-ACC two-CL-DIST read.PAST that
 omotteiru (-koto)
 think.PRES(-fact)
 ‘(lit.) Taroo and Hanako think that Jiroo bought two books each.’


- b. #Taroo to Hanako-ga [[e hon-o ni-satsu-zutsu yonda] hito-ni
 Taroo and Hanako-NOM book-ACC two-CL-DIST read.PAST person-DAT
 atta (-koto)
 meet.PAST(-fact)
 ‘(lit.) Taroo and Hanako met a person who bought two books each.’

Under the intended interpretation where the books in twos are distributed over Taroo and Hanako, (6a) is acceptable while (6b) is deviant. Based on discussion to this point, we conclude that movement takes place in overt syntax in order to license the distributive interpretation concerned in this section.


Regarding the mechanism to incorporate this movement, Miyamoto (2012) proposes the distributive operator (D-Op), which corresponds to ‘each’, is generated in the position illustrated in (7):

- (7) [DistP D-Op [Dist' [NQ Num+CL] Dist]]

This D-Op is raised to the plural NP in overt syntax in the sense of Heim, Lasnik and May’ (1991) analysis of the reciprocal *each other*, in order to substantiate the intended distributive interpretation. At this point, and accordingly, the grammaticality of (5b, d) is now easy to explain. The D-Op is raised to the scrambled plural NP in overt syntax, and the ungrammaticality of (5c) follows from the general prohibition of lowering operation in grammar, as illustrated in (8):

- (8) *John told t₁ [who₁ Mary praised Bill].


The question remaining is how we account for the grammaticality of (5a). Miyamoto (2012) proposes that in this example, the D-Op is not lowered to the object NP: rather, it is raised to the event argument located in SPEC of Event Phrase (EP) above TP, as roughly shown in (9):

- (9) [EP [[Event Argument] D-Op₁] [TP [gakusei [t₁ futa-ri-zutsu]]-ga furansugo to

 student two-CL-DIST-NOM French and
 doitsugo-o benkyooshiteiru]] (-koto)
 German-ACC study.PROG.PRES (-fact)

Having established that in sentences involving the distributive affix *zutsu*, the movement of the D-Op takes place in overt syntax, we are now able to create a case where we can decide whether

(10a) or (10b) is crucial for Sakamoto's (2017) proposal.²

- (10) a. Whether or not movement takes place in overt syntax.
- b. Whether or not a moving phrase has phonetic content.

4. Distributive Interpretation with the Distributive Affix *Zutsu* in Elided Context

Given the discussion so far, let us directly go to the crucial examples to choose (10a) or (10b):

- (11) a. Toyota to Nissan-ga [torishimariyaku-ga futa-ri-zutsu kogaisha-ni
Toyota and Nissan-NOM director -NOM two-CL-DIST subsidiary-to
shukkooshita] to] happyooshita (-koto)
be.sent on loan.PAST that announce.PAST (-fact)
'(lit.) Toyota and Nissan announced that two directors each have been sent on loan to
their subsidiaries.'
- b. Sarani, Honda to Suzuki-mo [torishimariyaku-ga futa-ri-zutsu
furthermore Honda and Suzuki-also director -NOM two-CL-DIST
kogaisha-ni shukkooshita] to] happyooshita (-koto)
subsidiary-to be.sent on loan.PAST that announce.PAST (-fact)
'(lit.) Furthermore, Honda and Suzuki also announced that two directors each have been
sent on loan to their subsidiaries.'
- c. Sarani, Honda to Suzuki-mo _____ happyooshita (-koto)
furthermore Honda and Suzuki-also announce.PAST (-fact)
'(lit.) Furthermore, Honda and Suzuki also announced _____.'

Notice that both (11b) and (11c) can follow (11a): notably, the latter example is fully acceptable with the D-Op being raised out of the elided clause, adjoined to the matrix plural subject in overt syntax. This means that it is PF-deletion, not LF-copying, that is operative in (11c) in order to obtain the intended distribution of sets of two directors over Honda and Suzuki in overt syntax. In other words, it is too late to realize this relationship via LF-copying.³ We therefore might conclude that (10b) plays a decisive role in Sakamoto's (2017) proposal on extraction out of a null argument site.

For the sake of completeness, one further example still needs accounting for. Consider (12a-c):

² Miyamoto (2019) suggests (10b) is at issue, claiming that N²-deletion with a relative clause is possible even if the original position of the relative head is elided via AE in Chinese.

³ Notice that this conclusion is only tenable under the framework Sakamoto (2017) assumes. Under the single output model (Bobaljik 1995), no timing difference arises between overt and covert movement.

- (12) a. Toyota to Nissan-ga [torishimariyaku-ga futa-ri-zutsu kogaisha-ni
 Toyota and Nissan-NOM director -NOM two-CL-DIST subsidiary-to
 shukkooshita] to] happyooshita (-koto)
 be.sent on loan.PAST that announce.PAST (-fact)
 ‘(lit.) Toyota and Nissan announced that two directors each have been sent on loan to
 their subsidiaries.’
- b. *Sarani, Honda-mo [torishimariyaku-ga futa-ri-zutsu kogaisha-ni
 furthermore Honda-also director -NOM two-CL-DIST subsidiary-to
 shukkooshita] to] happyooshita (-koto)
 be.sent on loan.PAST that announce.PAST (-fact)
 ‘(lit.) Furthermore, Honda also announced that two directors each have been sent on loan
 to its subsidiaries.’
- c. Sarani, Honda-mo _____ happyooshita (-koto)
 furthermore Honda-also announce.PAST (-fact)
 ‘(lit.) Furthermore, Honda also announced _____.’

The grammaticality of (12c) appears surprising under the current analysis introduced in Section 3. Given the assumption that Parallelism must be met between (12a) and (12c), the complement CP of (12c) should be as shown in (13):

- (13) Sarani, Honda-mo [torishimariyaku-ga futa-ri-zutsu kogaisha-ni
 furthermore Honda-also director -NOM two-CL-DIST subsidiary-to
 shukkooshita] to] happyooshita (-koto)
 be.sent on loan.PAST that announce.PAST (-fact)
 ‘(lit.) Honda also announced that two directors each have been sent on loan to its subsidiaries.’

To the extent that (13) follows, the movement of the D-Op, illustrated in (14), should then take place:

- (14) Sarani, [[Honda] D-Op₁]-mo [torishimariyaku-ga [t₁ futa-ri-zutsu] kogaisha-ni
 ↑ _____]
 furthermore Honda -also director -NOM two-CL-DIST subsidiary-to
 shukkooshita] to] happyooshita (-koto)
 be.sent on loan.PAST that announce.PAST (-fact)

Since the NP *Honda* is singular, the intended distribution should fail and the sentence is incorrectly

expected to be ungrammatical under this intended interpretation, contrary to fact. The grammaticality of (12c) thus indicates that there is no D-Op involved in this example. This in turn indicates that, when Parallelism is “checked” for PF-deletion operation, the distributive affix *zutsu* can be ignored, which needs explaining.⁴

In (11c), Parallelism (Griffiths and Lipták 2014: 210) requires that there be a parallel variable-binding relationship/dependency in the antecedent and the elided constituent: variables in the antecedent and the elided clause are bound from parallel positions.⁵ Given this scope parallelism in ellipsis, the D-Op movement takes place in both clauses in parallel fashion in (11c). Nothing goes wrong in this example. Conversely, in (12c), since the matrix subject is singular, the D-Op cannot be present in the elided constituent, and thus, there is no way that Parallelism can be respected. What remains unclear as a consequence is why (12c) is acceptable. On the syntactic side, since the ellipsis option, namely (14), cannot be chosen, the null complement must then be *pro*, as shown in (15):

- (15) Sarani, Honda-mo *pro* happyooshita (-koto)
 furthermore Honda-also announce.PAST (-fact)

At discourse level, the referent of this null complement must be identified, based on the given context. Important for our purpose here is the discourse constraint in which listeners and readers generally prefer to supply the newly asserted material with material that appeared earlier in the discourse as part of a main assertion. To this effect, Frazier and Clifton (2005) propose (16):⁶

(16) Main Assertion Hypothesis

Other things equal, comprehenders prefer to relate material in a new sentence to the main assertion of the preceding sentence.

When the parser cannot find a perfectly matching antecedent, it tries to find an alternative, then identifies it as the candidate for the elided position to complete the structure: if this is the case, (11c), but not (12c), can find its perfectly matching antecedent, which involves the D-Op raising in overt syntax, and therefore, this D-Op option must be selected in this example. By contrast, in (12c), there is no way that (14) is chosen due to the reason mentioned above: (15) must therefore be selected. To the extent that this viewing of (11c) and (12c) is accurate, the grammaticality of the former example constitutes evidence for the current claim that movement of phonetically null elements are permitted out of null argument sites, no matter whether they take place in overt or covert syntax.

⁴ See Sag (1976), Rooth (1992), Fox (2000), among others for discussion on Parallelism.

⁵ See Fox (1999) and Fox and Lasnik (2003) for related discussion.

⁶ See also Frazier and Clifton (2010) for related discussion.

5. Concluding Remarks

The current squib examined the behavior of the distributive affix *zutsu* in the elliptical context. I showed that the movement of the D-Op out of a null argument site is possible, no matter whether the movement in point takes place in overt syntax or LF. This finding supports Miyamoto's (2019) claim that Sakamoto's (2017) asymmetry between overt syntax and LF with respect to extraction out of null argument sites should be understood as the one between elements with and without phonetic content. In addition, we suggest that identity condition on ellipsis should be supplemented by repair strategy in processing. We leave detailed examination of this repair strategy for future research.

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