To appear in *Proceedings of SICOGG 19*

On Some Symmetric Constituents in Japanese

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1. Introduction

A well-known {XP, YP} problem brought up by Chomsky (2008) is now a hot topic of debate. He claims that every Syntactic Object (SO) must be labeled for interpretation at interfaces as stated in (1). Labels are determined by Labeling Algorithm in (2) applying to an SO at the timing of Transfer phase by phase. There are two ways to label such symmetric constituents: Labeling via movement (i) and via feature-sharing (ii) in (2b). In (3), the label of XP = {DP, vP} is determined as *v*P since the DP internally merges with TP, rendering the lower copy invisible from LA. Another {XP, YP} problem arises with the merger of DP and TP. The label of YP in (3) is determined by so-called labeling via feature-sharing: the relevant DP and TP share φ-features, which undergo Agree. It labels YP as <φ, φ>.

For labeling via feature-sharing, Chomsky (2013) assumes that Agree is necessary between XP and YP. It follows that this strategy is available only in languages with agreement. Then, what would the label of {XP, YP} structure in φ-featureless languages like Japanese (Fukui 1986, 1988) be like? This is the central question the current study will deal with.

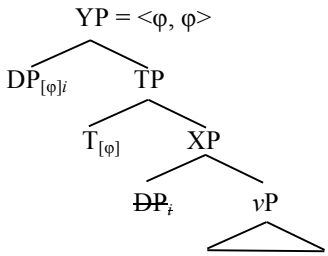
(1) Universal Labeling Hypothesis (**ULH**):
All SOs that reach the interfaces must be labeled for interpretation.
(Chomsky 2013:44)

(2) Labeling Algorithm (**LA**):[1]
a. In {H, XP}, LA selects the label H.
b. In {XP, YP} …,
(i) successive cyclic movement enables the lower copy invisible; or
(ii) a symmetric structure is labeled by the most prominent shared feature (feature-sharing). (adapted from Chomsky 2013:46)

* I would like to thank Naoki Fukui, Takaomi Kato and Hiroki Narita for their valuable comments. Thanks also go to the audience at the workshops in Keio University (January 2017) and Ryuukoku University (March 2017). All errors and inadequacies are my own. This work is supported by Grant-in-Aid for JSPS Fellows #16J00637.

[1] The SO of the form {H, H} is unlabelable as is (Chomsky 2013, 2015).

(3)

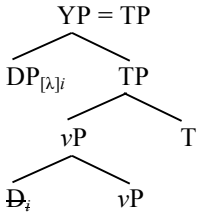


The rest of this paper is organized as follows. In section 2, I review Saito's (2014, 2016) anti-labeling analysis of Japanese. Then, we observe that there are at least three types of symmetric constituents that may pose problems to Chomsky's (2013, 2015) LA and Saito's anti-labeling analysis. In order to label such otherwise unlabelable constituents in Japanese, in section 3, I propose that labeling via categorial feature-sharing should be available if a language lacks φ-features or Agreement in the first place. Section 4 is an overall summary of the paper. We are now ready to discuss labeling of some symmetric constituents in Japanese.

2. Saito's (2014, 2016) Anti-labeling Analysis and its Problems

Saito (2014, 2016) is one of the first attempts to explain the characteristic properties of Japanese with labeling. He basically claims that overt case particles attached to nominals, and the inflectional morphemes on verbs serve as *anti-labeling* devices, which make the SO invisible from LA. This is illustrated in (4). As the subject DP bears a case particle, it is now opaque from Minimal Search, hence the label of YP would be TP.

(4)



(adapted from Saito 2016:157)

Saito further claims that his anti-labeling analysis explains why multiple nominatives and scrambling constructions are available in Japanese, whereas they are not in other languages. It is widely known that nominative NPs may multiply occur in Japanese in (5). Another outstanding character of the language is that arguments are freely scrambled, as in (6).

(5) Harvard-ga seisuuron-ga daigakuinsei-ga
Harvard-NOM number.theory-NOM graduate.students-NOM
sono gakkai-ni ki-ta.
that conference-to come-PAST
'As for Harvard, the graduate students of the number theory came to the conference.'
(adapted from Fukui 2011)

(6) a. Taro-ga Ziro-ni Hanako-o shookaisi-ta.
T.-NOM Z.-DAT H.-ACC introduce-PAST
'Taro introduced Hanako to Ziro.'
b. Hanako$_i$-o Taro-ga Ziro-ni t_i shookaisi-ta.
c. Ziro$_j$-ni Hanako$_i$-o Taro-ga t_j t_i shookaisi-ta.
(adapted from Saito 2016)

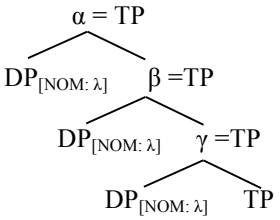
Considering the labels of each node in (5) and (6), an immediate problem that arises is that all of them create {XP, YP} structures problematic for Chomsky's LA, as illustrated in (7) and (8). In (7), each merger of a nominative NP creates a {XP, YP} structure in α, β, and γ. Scrambling of an accusative NP to the root TP also derives another {XP, YP} structure, β in (8a). The same applies to another scrambling of a dative NP to α in (8b).

(7) $\{_{\alpha}$ NP$_1$-ga, $\{_{\beta}$ NP$_2$-ga, $\{_{\gamma}$ NP$_3$-ga, … $\{_{v\mathrm{P}}$…$v\}\}\}\}$ (=5)

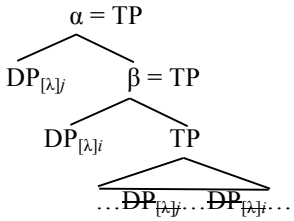
(8) a. $\{_{\alpha}$ NP$_i$-o, $\{_{\mathrm{TP}}$ NP-ga {…{…~~NP$_i$-o~~…}}}} (=6b)
b. $\{_{\alpha}$ NP$_j$-ni, $\{_{\beta}$ NP$_i$-o, $\{_{\mathrm{TP}}$ NP-ga {…{…~~NP$_j$-ni…NP$_i$-o~~…}}}}} (=6c)

In both (7) and (8), labeling via feature-sharing is not an option in Japanese, which lacks φ-agreement, since Chomsky (2013) assumes that it requires Agree between constituents. Saito claims that his anti-labeling analysis provides a solution. Since each DP bears an anti-labeling feature, or λ-feature in his terms, it is invisible from LA. Thus, α, β and γ in (7), and α and β in (8) are labeled as TP, as illustrated in (9) and (10) respectively.

(9) Multiple Nominatives (=5):



(10) Scrambling (=6b-c):



Scrambling is not limited to regular DPs in Japanese, as PPs like *to-syokan-kara* 'from the library' can also be preposed in (11) just like regular scrambling we observed in (6). Although case particles do not overtly realize, Saito expands his analysis and claims that PPs in Japanese also bear λ-features. He notes that "[PPs with genitives] suggest that PPs accompany Case features and they are valued as genitive, say, by N or D, within noun phrases. If this is the case, the PP in [(12)] should also have a Case feature although it is not phonetically realized" (Saito 2016:142). If this is on the right track, the scramblability of PPs in Japanese can be attributed to the presence of λ-features on them.

(11) a. Hanako-ga tosyokan-kara hon-o karidasi-ta
H.-NOM library-from book-ACC check.out-PAST
'Hanako checked out a book from the library.'
b. Tosyokan-kara$_i$ Hanako-ga t_i hon-o karidasi-ta
(Saito 2016:142)

(12) [Hanako-no [tosyokan-kara-***no*** [hon-no karidasi]]]
H.-GEN library-from-GEN book-GEN check.out
'Hanako's check-out of a book from the library.'
(*ibid*)

Although Saito's (2014; 2016) anti-labeling analysis has a wide explanatory coverage, I claim that it has both conceptual and empirical problems. In the following subsections, we expand the scope of observation to some other symmetric constructions in Japanese: (i) Stacked PPs, (ii) lexical VV-compounds with more than three verbs, and (iii) foci in multiple clefts. I point out that these symmetric constituents cannot be labeled either by Chomsky's LA or Saito's anti-labeling analysis.

2.1. Empirical Problems

2.1.1. Labeling of Stacked PPs

In (13), two PPs are stacked together. Since Williams (1994), many assume that *from-to* PPs in English form constituency. I point out that there

are certain PPs in Japanese whose syntactic behavior is quite different from others. First, these *kara-made* 'from-to' stacked PPs do not allow its first PP to be followed by a genitive case marker even when they are in the nominal projection. Second, neither the first nor the second PP can be scrambled independently: They must always be scrambled together.

(13) a. Demotai-wa hyaku-nin-kara nihyaku-nin-(kurai)-made i-ta
demonstrator-TOP 100-CL-from 200-CL-about-to be-PRES
'There were from 100 to about 200 demonstrators there.'
b. Kono-machi-wa sanju-ssai-kara goju-ssai-made-ga kensin-taisho-da
this-city-TOP 30-y.o-from 50-y.o-to-NOM screen-candidate-COP
Lit. 'In this city, those in their 30 to 50 years old are screening candidates.'

Saito claims that a PP also bears a λ-feature and it realizes as a genitive case marker when it is within the nominal projection (Saito 2016:134). However, the following data shows that this is not always the case. In the nominal counterparts of stacked PP examples in (14), first PPs can never be followed by a genitive case marker. If PPs always bear λ-features as Saito claims, the ungrammaticality of (14) with a genitive marker is unpredicted.

(14) a. Demotai-no hyaku-nin-kara(*-no) nihyaku-nin-made-no shuukai
demonstrator-TOP 100-CL-from-GEN 200-CL-about-to-GEN gathering
Lit. 'A gathering of demonstrators of from 100 to about 200 people.'
b. Kono-machi-no sanju-ssai-kara(*-no) goju-ssai-made-no kensin
this-city-GEN 30-y.o-from-GEN 50-y.o-to-GEN screen
Lit. 'The screening of the people in this town in their (from) 30 to 50 years old.'

Another point is that any part of certain stacked PPs can never be scrambled independently. It is well known that long-distance scrambling of the sort in (15) has been extensively discussed in the series of Saito's works. Although the *wh* is scrambled out of the embedded clause where its corresponding Q-particle *-ka* is, the sentence is still grammatical in (15b), which is due to radical reconstruction of *dono-hon-o* 'which book'.

(15) a. John-ga [Mary-ga dono-hon-o yon-da ka] siri-tagattei-ru
J.-NOM M.-NOM which-book-ACC read-PAST Q know-want-PRES
'John wants to know which book Mary read.'
b. ?Dono-hon$_i$-o [John-ga [Mary-ga t_i yon-da ka] siri-tagattei-ru]
which-book-ACC J.-NOM M.-NOM read-PAST Q know-want-PRES

'John wants to know which book Mary read.'

(Saito 2003:484)

On the other hand, examples with fronted NP-*kara* 'from NP' never show such reconstruction effects. In (16), the fronted *wh*-phrases *nan-nin-kara* 'from how people' cannot be interpreted inside the embedded clause within the scope of the Q-particle. The same applies when NP-*made* 'to NP' is scrambled out of the stacked PPs, as in (17).[2]

(16) a. Taro-ga [chaperu-ga nan-nin-kara 80-nin-made
T.-NOM chapel-NOM how-CL-from 80-CL-to
shuuyoo-deki-ru ka] siritagattei-ru.
contain-can-PRES Q know.want-PRES

[2] Note that not all PPs of the form *NP-kara NP-made* would be problematic. Consider something like (i):

(i) Tokyo-kara Osaka-made basu-ni not-ta.
Tokyo-from Osaka-to bus-on ride-PAST
'(I) took a bus from Tokyo to Osaka.'

This PP-PP tolerates both *no*-marking on the first PP and scrambling of a part from the whole stacked PPs, as demonstrated in (ii), and (iii) and (iv) below.

(ii) Tokyo-kara-no Osaka-made-no basu-no joosya
Tokyo-from-GEN Osaka-to-GEN bus-GEN ride
'a ride of a bus from Tokyo to Osaka.'

(iii) a. Hanako-ga [Taro-ga Tokyo-kara doko-made it-ta ka] sittei-ru.
H.-NOM T.-NOM Tokyo-from where-to go-PAST Q know-PRES
'Hanako knows to where Taro went from Tokyo.'
b. Doko$_i$-made [Hanako-ga [Taro-ga Tokyo-kara t_i it-ta ka] sittei-ru].
where-to H.-NOM T.-NOM Tokyo-from go-PAST Q know-PRES

(iv) a. Hanako-ga [Taro-ga doko-kara Osaka-made it-ta ka] sittei-ru.
H.-NOM T.-NOM where-from where-to go-PAST Q know-PRES
'Hanako knows from where Taro went to Tokyo.'
b. Doko$_i$-kara [Hanako-ga [Taro-ga t_i Osaka-made it-ta ka] sittei-ru].
where-from H.-NOM T.-NOM Osaka-to go-PAST Q know-PRES

The point here is that there are certain types of stacked PPs like those in (13) that would be problematic to both Chomsky's LA and Saito's anti-labeling analysis. Thus, the existence of *kara-made* PPs that deviate from those in (13) is does not affect the discussions in this paper.

'Taro wants to know from how many people to 80 people that chapel can contain.'

b. *Nan-nin-kara [Taro-ga [chaperu-ga t_i 80-nin-made
how-CL-from T.-NOM chapel-NOM 80-CL-to
shuuyoo-deki-ru ka] siritagattei-ru].
contain-can-PRES Q know.want-PRES

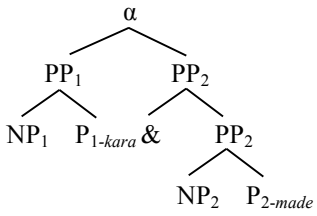
(17) a. Bucho-ga [insatsuya-ga hyaku-bu-kara nan-bu-made ichidoni
boss-NOM printing.shop-NOM 100-CL-from how-CL-to once
juchu-deki-ru ka] siri-tagattei-ru
accept-can-PRES Q know-want-PRES
'The boss wants to know from 100 copies to how many copies the printing shop can receive an order at the one time.'

b. *Nan-bu-made [bucho-ga [insatsuya-ga hyaku-bu-kara t_i ichidoni
how-CL-from boss-NOM printing.shop-NOM 100-CL-to once
juchu-deki-ru ka] siri-tagattei-ru]
accept-can-PRES Q know-want-PRES

From these observations, I conclude that certain stacked PP structures are inseparable. Then, what kind of structure do stacked PPs have?

Following Williams (1994:12) and Hirose (2007), I assume that the *from-to* or *kara-made* PPs and their kin have coordination-like structure in (18). '&' here does not contribute to labeling; it does not 'project' but it just coordinates the conjuncts (Chomsky 2013, and te Velde 2006).

(18)

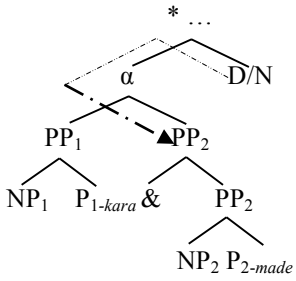


The structure naturally explains why a part of the whole stacked PP cannot be extracted, if the Coordinate Structure Constraint apply to (18) just like it does to regular coordinate structures.

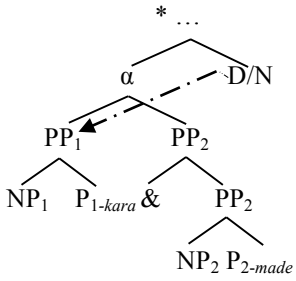
The stacked PPs of the sort discussed so far pose problems to both Chomsky's LA and Saito's anti-labeling analysis. Chomsky's LA predicts that the node α in (18) is unlabelable, since it is an {XP, YP} structure. Even if we assume Saito's anti-labeling analysis, the problem still remains. There is no head that can assign a Case or λ-feature to PP_1 or PP_2 in (18) from out-

side the whole PP-PP structure. It is supported by the first observation we made in this section, where a genitive case marker cannot appear on NP-*kara*, which is unpredictable if it bears a λ-feature, as in (19) and (20). The only target for genitive Case assignment is the whole *kara-made* stacked PP, but not the individual PP_1 or PP_2 inside, as illustrated in (19) and (20).

(19)



(20)



Saito's analysis predicts that neither PP_1 nor PP_2 has a λ-feature (Case feature). Therefore, they both remain visible to LA, which makes α in (18), (19) or (20), ends us as an unlabelable {XP, YP} ({PP_1, PP_2}) structure.

Another possibility under Saito's anti-labeling analysis is that both PP_1 and PP_2 in (18) inherently bear λ-features. However, α will remain unlabelable in a different way even in this scenario. Since both PP_1 and PP_2 bear λ-features, they are invisible from LA and nothing inside α is visible. Therefore, LA cannot label α, which violates the ULH in (1). In sum, either Chomsky's or Saito's analysis faces a problem in labeling of certain stacked PPs discussed in this section. Next, we will observe another counterargument from verbal compounds against the anti-labeling analysis.

2.2. Labeling of three-membered VV-compounds

Another apparent problem of Chomsky's LA is labeling of lexical VV-compounds that abound in Japanese, as in (21). Saito proposes that the conjunctive inflectional *-i/e* (*ren'yoo-kei*) morpheme is also an anti-labeling device in Japanese. Since the first verb in a VV-compound is always accompanied by *-i/e*, Saito claims that the LA just sees the second verb in the compounds in (21), and the label is determined as V_2, as in (22).

(21) A list of some lexical VV-compounds in Japanese: {V, V}
   a. transitive-transitive: *hiki-nuk* (pull-pull.out), *nigiri-tubus* (grasp-crash)
   b. unergative-unergative: *tobi-ori* (jump-go.down), *kake-nobor* (run-climb)

c. unaccusative-unaccusative: *suberi-oti* (slip-fall), *ukabi-agar* (float-rise)
d. transitive-unergative: *moti-aruk* (carry-walk), *mati-kamae* (wait-hold)
e. unergative-transitive: *nori-kaer* (ride-change), *nomi-tubus* (drink-waste)
(cf. Kageyama 1993)

(22) {V_1-inflection, V_2}, or more precisely, {V_1 [λ: preverbal], V_2}
(adapted from Saito 2016:150)

Although it seems appealing at first sight, his proposal faces a problem when more than three verbs are stacked, as in (23) and (24). Note that they all conform to the Transitivity Harmony Principle (Kageyama 1993). Although such compounds are less productive than those in (21), they are acceptable and productive to some extent as discussed in Sugioka (2008).

(23) a. Taro-wa Akabane-to Tateishi-o ***nomi-aruki-kurabe***-ta
T.-TOP Akabane-& Tateishi-ACC drink-walk-compare-PAST
'Taro did bar-hopping in Akabane and Tateishi to compare them.'
b. Hanako-wa taisetsuna kekkon-yubiwa-o ***sagasi-mawari-arui***-ta
H.-TOP precious wedding-ring-ACC search-go.around-walk-PAST
'Hanako walked searching around for her precious wedding ring.'
c. Aji-no harawata-o ***hiki-chigiri-nui***-ta.
horse.mackerel-GEN gut-ACC pull-tear-pull.out-PAST
'I degut out the horse mackerel.'
(Kobayashi 2017)

(24) a. tsumi-kasane-age-ru
pile-put.on-raise-PRES
'accumulate up'
b. tobi-hane-mawar-u
jump-hop-go.around-PRES
'jump up and down around'
c. hiki-zuri-das-u
pull-drag-pull.out-PRES
'drag out'
d. hiki-zuri-otos-u
pull-drag-push.down-PRES
'drag off to drop'
(Sugioka 2008:69)

I assume with Sugioka that these three-membered verbal sequences are structurally possible and form a compound verb for the following two reasons. First, they exhibit the compound accent (Sugioka 2008:70), in which three verbs form one single accentuation pattern. Second, there are semantic differences between compounds in (23) and those with its V_3 read separately from V_1 and V_2 without compound accentuation in (25). In (25), the sentence is true even if Hanako rides her bike while searching around. However, (23b) requires Hanako to walk while looking for her wedding ring. This difference is unexpected if three verbs in (23) and (24) do not form one lexical VV-compound.

(25) Hanako-wa taisetsuna kekkon-yubiwa-o *sagasi-mawari*, *arui*-ta
H.-TOP precious wedding-ring-ACC search-go.around, walk-PAST
'Hanako searched around for her precious wedding ring and walked.'

Now, let us consider how Chomsky's LA and Saito's anti-labeling analyses treat such compounds. Needless to say, the former cannot label $\{V_1, V_2\}$ or $\{\{V_1, V_2\}, V_3\}$ as is, since V_1 and V_2 do not undergo agreement under the common assumptions. If the inflectional morpheme is an anti-labeling device which makes the verb invisible to LA as Saito claims, then the first-merged $\{V_1, V_2\}$, α in (26) is always unlabelable. As neither V_1 nor V_2 is visible from LA, it is problematic at the interfaces.

(26) $\{_\beta \{_\alpha V_1\text{-}i, V_2\text{-}i\}, V_3\}$ *α is unlabelable!

Note that either structure in (27) or (28) is highly unlikely. By definition, features are on lexical items, thus an alternative structure in which the second λ-feature is attached to the set α is not possible, as in (27). Next, if V_2 and V_3 merge first, then the whole VVV compounds might be labelable ($\alpha = V_3$, $\beta = V_3$), as illustrated in (28). However, this is not the case, since $\{V_2, V_3\}$ like *aruki-kurabe* and *mawari-aruk* in (29) is not an independent VV-compound, unlike those in (30).

(27) $*\{_\beta \{_\alpha V_1\text{-}i, V_2\}\text{-}i, V_3\}$

(28) $\{_\beta V_1\text{-}i, \{_\alpha V_2\text{-}i, V_3\}\}$

(29) a. ??aruki-kurabe(-ru)
walk-compare
b. *mawari-aruk(-u)
go.around-walk
c. *?chigiri-nuk(-u)
tear-pull.out

(30) a. [ok]nomi-aruk(-u)
drink-walk
b. [ok]sagasi-mawar(-u)
search-go.around
c. [ok]hiki-chigir(-u)
pull-tear

The contrast of lexical integrity in (29) and (30) indicates that it is V_1 and V_2 that merge first, which is followed by a merger of V_3.[3] Therefore, Sai-

[3] Some might even say that the VV compounds in (ii) are bad due to some semanti-co-pragmatic factors. However, this is unlikely the case since when V_1 is present with *-te* attached to it, their ungrammaticality does not change. See Sugioka (2008) for further evidence for the Left Branching analysis of the three-member lexical VV.

(i) *Taro-wa Akabane-to Tateishi-o ***non-de-aruki-kurabe***-ta
T.-TOP Akabane-& Tateishi-ACC drink-TE-walk-compare-PAST
'Taro did bar-hopping in Akabane and Tateishi to compare them.'

to's (2014, 2016) anti-labeling analysis faces a problem in labeling as in the above examples since the inflectional morpheme *-i* is attached to V_1 and V_2, making both of them invisible from LA or Minimal Search. Finally, let us turn to still another potentially problematic example for the anti-labeling analysis.

2.3. Labeling of Foci in (Multiple) Clefts

The third possible moot point of both Chomsky (2013, 2015) and Saito (2014, 2016) is from labeling of the foci in (multiple-)cleft constructions in (31). In (31a), an NP, *hon-o* 'a book' is clefted, and in (31b), multiple NPs, *Hanako-ni hon-o* 'to Hanako a book' are in the focus position.

(31) a. Taro-ga Hanako-ni age-ta no-wa [$_{NP}$ hon-o] da.
T.-NOM H.-DAT give-PAST C-TOP book-ACC COP
Lit. 'It is a book that Taro gave to Hanako.'
b. Taro-ga age-ta no-wa [$_{NP}$ Hanako-ni] [$_{NP}$ hon-o] da.
T.-NOM give-PAST C-TOP H.-DAT book-ACC COP
Lit. 'It is a book to Hanako that Taro gave.'

Along with Takano (2015) among others, I assume that the clefts are derived as follows (Koizumi 2000, cf. Hiraiwa and Ishihara 2012).[4] First, V raises to T, creating a remnant in (32b). Then, this remnant is internally merged to the front (cf. focus movement), which is followed by the topicalization of the CP, as in (32c) and (32d).

(32) a. Taro-ga Hon-o Hanako-ni age-ta no da.
T.-NOM book-ACC H.-DAT give-PAST C COP
'Taro gave Hanako a book.'
b. Taro-ga [Hon-o Hanako-ni t_V] age$_V$-ta no da. (V-raising to T)
c. [Hon-o Hanako-ni t_V]$_i$ [$_{CP}$ Taro-ga t_i age$_V$-ta no] da.
(Focus movement of the remnant)
d. [$_{CP}$ Taro-ga t_i age$_V$-ta no]$_j$-wa [Hon-o Hanako-ni t_V]$_i$ t_j da.

What would the label of the focus position in such (multiple-)clefts be? Let us assume with Chomsky (2013) and Narita (2012) that LA applies at

[4] Takano (2015) claims that the multiple foci in the multiple cleft constructions can be labeled via FOC feature sharing. However, it does not rescue Saito's (2014, 2016) analysis since the multiple NP/PPs in the focus position bear anti-labeling features which make them invisible from LA. Thus, FOC features, if they have, are also invisible from LA, leaving the relevant {XP, YP} structure unlablebale.

Transfer. Verb-raising precedes Transfer, so the lower copy of the raised V becomes invisible when LA applies. Recall that for Saito (2014; 2016), NPs that bear case/anti-labeling features are invisible to LA as well. Thus, in the schematic representations in (33), both α and β are unlabelable under the anti-labeling analysis.

(33) Anti-labeling analysis (Saito 2014, 2016):
a. $\{_{\alpha}$ Hon-o$_{[\lambda]}$, $t_V\}$
b. $\{_{\alpha}$ Hon-o$_{[\lambda]}$, $\{_{\beta}$ Hanako-ni$_{[\lambda]}$, $t_V\}\}$

Even if we depart from Saito's anti-labeling analysis, Chomsky's LA may have the same problem when it comes to multiple-clefts, as in (34b), since it creates another {XP, YP} structure, {NP, {NP, t_V}}.

(34) Chomsky's (2013, 2015) LA:
a. $\{_{\alpha}$ Hon-o, $t_V\}$ (labelable as NP 'hon-o')
b. $\{_{\alpha}$ Hon-o, $\{_{\beta}$ Hanako-ni, $t_V\}\}$

An alternative is to take Bošković's (2015, 2016) assumption that LA applies when merge applies between an LI and an XP, which Saito himself briefly refers to in his works. More precisely, Bošković claims that with the {H, XP}, LA applies when H and XP merge, while LA applies at Transfer with regard to the {XP, YP} structure. If LA applies when the remnant VP is created, then the label of β and α in (33) would be VP. Thus, the labeling of foci in (multiple-)clefts is no longer a problem for Saito's (2015, 2016) anti-labeling analysis. However, I argue that such assumption is, at least, not available for the cleft construction in Japanese.

First, it is generally assumed that only nominal elements can appear in the focus position of clefts in Japanese. Therefore, the focused constituent should be labeled as DP or NP (or PP, which has some nominal characteristics in Japanese). If LA applies before the verb-movement in (32), then the focused verbless remnant is labeled as VP, but not D/NP, contrary to what is desired. Second, Bošković's assumption makes the timing of LA disjunctive, allowing LA to apply when merge occurs or Transfer applies, which is a theoretically unwanted assumption. Third, there are constructions that cannot be explained if we assume {H, XP} is labeled as H when they are merged. One of them is from Ott (2011), which attempts to account for the similarities and differences between free relatives and wh-interrogatives. Considering the differences between (35a) and (35b), free relatives, unlike embedded questions, do not have force, but just replace arguments.

(35) a. Free Relatives: I eat [$_{FR}$ what$_i$ you cook t_i]
b. Interrogatives: I wonder [$_{Q}$ what$_i$ you cook t_i]
(Ott 2011:183)

Ott argues that C_{FR}, unlike C_Q bears no interpretable formal features, but only uninterpretable ones (C_Q agrees with wh_Q like wonder in the higher phase domain or cycle). Therefore, assuming the logic of Full Interpretation, a phase head without any uninterpretable features will be transferred to the interfaces along with its complement (Ott 2011). In a FR, transfer removes C_{FR} and its complement, leaving only *what* in (35a). Following Chomsky (2008:145), Ott claims that it makes the label of FR, DP that is identical to what remains inside it, *what* in the CP-spec position. In the interrogatives (ib), if LA applies when *what* and {$_{CP}$ C_Q…{you cook}} merge, the label of β in (36) would be an LI *what* which is identical to the one in (35a).

(36) {$_{\beta}$ *what*, {$_{\alpha=CP}$ C_Q…{you cook…
Label({H, XP}) = H(P)

This is problematic since the label of the embedded clauses in (35a) and (35b) become identical, though (35a) is a free relative and (35b) a *wh*-interrogative. If, on the other hand, LA applies at Transfer, such problems do not arise. Given Ott's observation, I continue to assume with Chomsky (2013) and others that LA applies to an SO when it is transferred. Since any SO must be labeled until it reaches either SM or C-I interfaces (ULH), either Chomsky's LA or Saito's anti-labeling analysis makes wrong predictions with (multiple-)clefts.

2.4. Conceptual Problems

Apart from these empirical issues, the anti-labeling analysis (Saito 2014, 2016) has at least three problems in the conceptual aspects as well. First, there is no fundamental connection between case and inflectional features and the ability of making something invisible from LA. It seems to be successful in overcoming the abovementioned {XP, YP} problem in Japanese. However, the assumption that case-features and inflectional morphemes are anti-labeling devices remains stipulation, which in itself cannot be rationally justified.

Second, it is not obvious how exactly LA can detect a case or λ-feature if it makes the whole SO invisible. Saito notes that "[…] Case marker in Japanese serves as an anti-labeling device that makes a constituent invisible for labeling" (Saito 2016:131). He does not explicitly show how LA can know whether certain SO has an anti-labeling device or not. If case and in-

flectional features are anti-labeling devices, then how can Minimal Search find these features in the first place? One may claim that an anti-labeling feature is visible, but the whole SO to which it attaches is invisible. However, such an assumption violates the No Tampering Condition (NTC) in a broad sense. He or she must assume that "invisibility" is introduced from somewhere in the middle of the derivation unless the anti-labeling features are inherently invisible. Either way, it goes against minimalist assumptions.

Third, Saito's analysis contradicts itself in claiming that a λ-feature exists on PPs though it is not overt. He provides several examples of so-called the case-maker drop phenomena. Arguments without overt case markers cannot be scrambled, and he claims that this is attributed to the lack of λ-feature. A PP may undergo scrambling regardless of whether a case marker overtly attaches to it or not. Therefore, one must say that a λ-feature has nothing to do with its overt realization, which makes the proposal unfalsifiable.[5]

2.5. Interim Conclusion

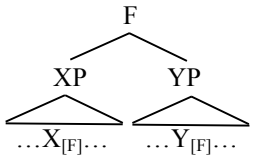
In this section, we have observed three different symmetric constituents: (i) Stacked PPs; (ii) three-membered VV-compounds; and (iii) (multiple) clefts, all of which may pose problems to Chomsky's and Saito's analyses. In the next section, I extend Chomsky's (2013) labeling via feature-sharing to the categorial features, and will see the consequences.

3. Labeling via Categorial Feature-Sharing

In order to defend ULH in (1), I extend Chomsky's (2013) labeling through feature-sharing to the categorial features in this section. Labeling through feature-sharing occurs when components of the symmetric {XP, YP} share some prominent features, φ-features in the case of subject raising to [Spec, TP], and Q-features in the case of *wh*-movement to the [Spec, CP], both of which correspond to the criterial position (Rizzi 2010). This is schematically shown in (37): LA or Minimal Search finds the most prominent features within XP and YP, which then serve as the label of the whole SO {XP, YP}.

(37) a. $\{XP_{[F]}, YP_{[F]}\}$
b. Label($\{XP_{[F]}, YP_{[F]}\}$) = F

[5] I would like to thank Yoshiki Fujiwara (p.c.) for bringing up this issue at WAFL 13 in Tokyo (May 2017).

c. 

(Takita et al. 2016:5)

3.1. Is Agreement Always Required for Labeling via Feature-sharing?

Chomsky (2013:45) clearly states that "[m]ere matching of most prominent features does not suffice (Marcel den Dikken p.c.), as shown, for example, by the copular constructions that Moro studied" and "[w]hat is required is not just matching but actual agreement, a stronger relation, which holds in the indirect question and subject-predicate examples but not small clauses." What Chomsky has in mind is the copula construction like (38) below. He claims, following Moro (2000), that the copula construction is derived via movement of XP out of the symmetric {XP, YP} structure, which is a complement of a *be* verb. He attributes the symmetry-breaking movement of XP in (38b) to the fact that α in (38a) is otherwise unlabeled. After the movement, α is labeled as YP since the lower copy of XP becomes invisible.

(38) a. {be, {$_{\alpha}$ XP, YP}}
b. {XP, {be, {$_{\alpha}$ ~~XP~~, YP}}}

Marcel den Dikken (p.c.) kindly refers me to some examples on why feature-sharing without Agreement should be prohibited. In (39b), *John* and *a nice guy* have the same set of φ-features. Thus, α can be labeled as <φ, φ> if labeling via accidental feature-sharing between the two is attained without Agreement. Needless to say, this is undesirable since α poses no problem in terms of labeling, contrary to the fact that (39b-c) are ungrammatical.

(39) a. John is a nice guy.
b. {be, {$_{\alpha}$ John$_{[\varphi]}$, a nice guy$_{[\varphi]}$}}
c. *Be John a nice guy.

Chomsky responded to this point by stipulating that the feature sharing that gives rise to labeling is strictly confined to Agree relations.

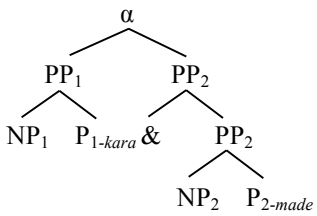
I claim that the situation is quite different in Japanese since the language lacks agreement (Fukui 1986, 1988 among others). In Japanese, it should be either that (i) labeling via feature-sharing is not allowed at all since Agree is not available; or that (ii) labeling via feature-sharing is possi-

ble without Agree relations since it lacks agreement in the first place. In this paper, I pursue the second possibility and show its empirical coverage in explaining otherwise unlabelable symmetric constituents in Japanese. If there are no more prominent features, then other features such as categorial features of the Lexical Item (LI) should be visible to the Minimal Search as well. Below, I demonstrate that this labeling through categorial feature sharing nicely solves the four types of undergeneration problems of Chomsky's (2013, 2015) LA or Saito's (2014, 2016) anti-labeling analysis.[6]

3.2. Labeling of Stacked PPs in Japanese

The structure of stacked PPs discussed in section 2 is repeated in (40). In the current analysis, stacked PPs above can be simply analyzed as {PP, PP} structure. It is an {XP, YP} structure, but this is no longer a problem if we extend the labeling through feature sharing to categorial features, as in (41). LA or Minimal Search finds the shared feature between the two components, which is most prominent P-feature; hence the whole SO is labeled as PP.

(40)



(41) Label({PP_1, PP_2}) = PP

Next, let us see how the current analysis solves the labeling problem of verb-verb compounds with more than three verbs.

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[6] Although he states that labeling via feature-sharing requires Agreement, he also notes that categorial features can be the candidate in the case of adjectival coordination. In (i), the label of α is undetermined unless Z moves since otherwise α remains as a symmetric {H, H} or {XP, YP} structure. He assumes that Conj is not a candidate for the label for some reason. As for the label of β, Chomsky claims that the label would be Z typically shared with W, which is A(P) in (i) (Chomsky 2013:46).

(i) {Conj, {$_{\alpha}$ Z, W}} e.g. *nice and neat*
a. {Conj, {$_{\alpha}$ nice, neat}}
b. {$_{\beta}$ nice, {Conj, {$_{\alpha}$ ~~nice~~, neat}}

3.3. Labeling of three-membered Lexical VV-compounds

I pointed out that Saito's anti-labeling analysis predicts that the label of the first-merged two verbs α in (42) becomes unlabelable; hence the SO crashes at the interfaces.

(42) $\{_{\beta}\ \{_{\alpha}\ V_1\text{-}i, V_2\text{-}i\}, V_3\}$ *α is unlabelable

Again, this is no longer problematic if we allow categorial features on LIs to participate in labeling via feature-sharing. Although Chomsky's (2013) original implementation only deals with the {XP, YP} structures, I assume that labeling via feature-sharing can apply to another symmetric {H, H} structure as well, as long as Minimal Search finds some shared features between the two. Thus, the label of β and α would be determined with no recourse to Saito's (2014, 2016) anti-labeling features, as in (43).

(43) a. Label($\{_{\alpha}\ V_{1[V]}, V_{2[V]}\}$) = V
b. Label($\{_{\beta}\ \{_{\alpha}\ V_{1[V]}, V_{2[V]}\}, V_{3[V]}\}$) = V

3.4. Labeling of the Foci in (Multiple-)Clefts

If we depart from the anti-labeling analysis, then the label of (44a) is unambiguously determined as NP of *hon-o* 'book', under Chomsky's (2013) LA. However, Chomsky's LA cannot handle multiple constituents in the focus position in (44b). It is, again, another {XP, YP} structure, namely {*Hanako-ni*, *hon-o*} in (45a). The current proposal indeed paves the way for labeling of such symmetric constituents. The SO can be labeled via categorial feature-sharing as NP (45b).

(44) a. Taro-ga Hanako-ni age-ta no-wa [$_{NP}$ hon-o] da.
T.-NOM H.-DAT give-PAST C-TOP book-ACC COP
Lit. 'It is a book that Taro gave to Hanako.'
b. Taro-ga age-ta no-wa [$_{NP}$ Hanako-ni] [$_{NP}$ hon-o] da.
T.-NOM give-PAST C-TOP H.-DAT book-ACC COP
Lit. 'It is a book to Hanako that Taro gave.'

(45) a. Label($\{$*Hanako-ni*$_{[\lambda]}$, $\{$*hon-o*$_{[\lambda]}$, $t_V\}\}$) = ?
b. Label($\{$*Hanako-ni*$_{[N]}$, *hon-o*$_{[N]}\}$) = NP (categorial feature-sharing)

Multiple clefts in Japanese are not limited to those of {NP, NP} in (44b), but a PP can co-occur with an NP in the focus position, as in (46). I claim

that an NP and a PP may share nominal features since PPs in Japanese show nominal characteristics, serving as an argument, and followed by a case marker, for instance. Thus, LA assigns *nominal* as the label of {ramen-o$_{[N]}$, Tokyo-de$_{[N]}$} in (47).

(46) Hanako-ga tabe-ta no-wa [$_{NP}$ ramen-o] [$_{PP}$ Tokyo-de] da.
H.-NOM eat-PAST C-TOP ramen-ACC Tokyo-at COP
Lit. 'It is ramen at Tokyo that Hanako ate.'

(47) Label({*ramen-o*$_{[N]}$, *Tokyo-de*$_{[N]}$}) = *nominal*P

4. Conclusion

In this paper, I pointed out several problematic cases against Chomsky's LA (2013, 2015) and Saito's (2014, 2016) anti-labeling analysis of Japanese. Although Saito's anti-labeling analysis has a wide explanatory coverage, I showed that it has both conceptual and empirical problems. We expanded the scope of observation to three types of symmetric constituents in Japanese: (i) Stacked PPs, (ii) lexical VV-compounds with more than three verbs, and (iii) foci in multiple clefts. Then, I demonstrated that the categorial feature-sharing provides a way to label those symmetric constituents, which would otherwise remain unlabelable.

Nevertheless, the current proposal falls short of labeling other types of symmetric constituents. Japanese also abounds in symmetric structures that do not share categorial features, which Saito (2014, 2016) attempts to explain with his anti-labeling analysis. Multiple nominatives and scrambling constructions in (5) and (6) are repeated here in (48) and (49).

(48) Harvard-ga seisuuron-ga daigakuinsei-ga (=5)
Harvard-NOM number.theory-NOM graduate.students-NOM
sono gakkai-ni ki-ta.
that conference-to come-PAST
'As for Harvard, the graduate students of the number theory came to the conference.'
(adapted from Fukui 2011)

(49) a. Taro-ga Ziro-ni Hanako-o shookaisi-ta. (=6)
T.-NOM Z.-DAT H.-ACC introduce-PAST
'Taro introduced Hanako to Ziro.'
b. Hanako$_i$-o Taro-ga Ziro-ni t_i shookaisi-ta.
c. Ziro$_j$-ni Hanako$_i$-o Taro-ga t_j t_i shookaisi-ta.
(adapted from Saito 2016)

For those {XP, YP} structures, I propose yet another way of labeling in Kobayashi (2017, to appear). In a compressed way, I basically argue that Japanese may apply Transfer more freely than English and other languages since the former lacks uninterpretable φ-features in the spirit of Fukui and Kasai (2004). For the reason of space, I cannot discuss the parametrization of Transfer and its consequences here. See Kobayashi (2017, to appear) for further details.

References

Bošković, Željko. 2015. The ban on movement out of moved elements in the phasal/labeling system. Ms., University of Connecticut.

Bošković, Željko. 2016. On the timing of labeling: Deducing comp-trace effects, the subject condition, the adjunct condition, and tucking in from labeling. *The Linguistic Review*, 33(1), 17-66.

Chomsky, Noam. 1995. *The minimalist program*. MIT Press: Cambridge, MA.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In Martin, R, Michaels, D, Uriagereka, J. (eds.). *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, 89-155. MIT Press: Cambridge, MA.

Chomsky, Noam. 2001. Derivation by Phase. In Kenstowicz, M. (ed.). *Ken Hale: A life in language*. 1-52. MIT Press: Cambridge, MA.

Chomsky, Noam. 2004. Beyond explanatory adequacy. In Belletti, A. (ed.), *Structures and beyond: The cartography of syntactic structures 3*, 104–131. Oxford University Press: Oxford.

Chomsky, Noam. 2005. Three factors in language design. *Linguistic inquiry*, 36(1), 1-22.

Chomsky, Noam. 2008. On phases. In Freidin, R., Otero, C.P., Zubizarreta, M.L. (eds.), *Foundational Issues in Linguistic Theory. Essays in Honor of Jean-Roger Vergnaud*, 291-321. MIT Press: Cambridge, MA.

Chomsky, Noam. 2013 Problems of projection. *Lingua*, 130, 33-49.

Chomsky, Noam. 2015. Problems of projection: Extensions. In Di Domenico, E., Hamann, C., Matteini, S. (eds.), *Structures, strategies and beyond - studies in honour of Adriana Belletti*, 3-16. John Benjamins: Amsterdam and Philadelphia.

Fukui, Naoki. 1986. A theory of category projection and its applications. Doctoral dissertation, MIT: Cambridge, MA.

Fukui, Naoki. 1988. Deriving the differences between English and Japanese: A case study in parametric syntax. *English Linguistics*, 5(0), 249-270.

Fukui, Naoki. 2011. Merge and Bare Phrase Structure. In Boeckx, C. (ed.), *The Oxford Handbook of Linguistic Minimalism*, 73-95. Oxford University Press: Oxford.

Fukui, Naoki., and Hironobu Kasai. 2004. Spelling-out scrambling. In Pica, P. (ed.), *Linguistic variation yearbook 2004*, 109-141. John Benjamins: Amsterdam.

Hiraiwa, Ken., and Shin-Ichiro, Ishihara. 2012. Syntactic metamorphosis: Clefts, sluicing, and in-situ focus in Japanese. *Syntax*, 15(2), 142-180.

Hirose, Tomio. 2007. Nominal paths and the head parameter. *Linguistic inquiry*, 38(3), 548-553.
Kageyama, Taro. 1993. *Bumpoo to gokeisei*. [*Grammar and word formation*]. Hituzi Syobo: Tokyo.
Kobayashi, Ryoichiro. 2017. Labeling the unlabelable in Japanese: On the timing difference of transfer and its consequences. Ms., Sophia University.
Kobayashi, Ryoichiro. to appear. Parametrizing the timing of transfer in Japanese and English and its consequences. In *Proceedings of the WAFL 13*. MIT Working Papers in Linguistics. <http://ling.auf.net/lingbuzz/003561>
Koisumi, Masatoshi. 2000. String vacuous overt verb raising. *Journal of East Asian Linguistics*, 9(3), 227-285.
Moro, Andrea. 2000. *Dynamic Antisymmetry*. MIT Press: Cambridge, MA.
Narita, Hiroki. 2012. Phase cycles in service of projection-free syntax. In Gallego, Á. (ed.), *Phases: Developing the framework*, 125-172. Mouton de Gruyter: Berlin.
Ott, Dennis. 2011. A note on free relative clauses in the theory of phases. *Linguistic Inquiry*, 42(1), 183-192.
Rizzi, Luigi. 2010. On Some properties of criterial freezing. In Panagiotidis, E.P. (ed.), *The Complementizer Phrase*, 17-32. Oxford University Press: Oxford.
Saito, Mamoru. 2003. A derivational approach to the interpretation of scrambling chains. *Lingua*, 113(4), 481-518.
Saito, Mamoru. 2014. Case and labeling in a language without φ-feature agreement. In Cardinaletti, A., Cinque, G., Endo, Y. (eds.), *On peripheries: Exploring clause initial and clause final positions*, 269-297. Hituzi Syobo Publishing: Tokyo.
Saito, Mamoru. 2016. (A) case for labeling: Labeling in languages without φ-feature agreement. *The Linguistic Review*, 33(1), 129-175.
Sugioka, Yoko. 2008. Remarks on asymmetry and recursion in compound formation. In Sano, T, Endo, M, Otaki, K, Sugisaki, K and Suzuki, T. (eds.), *An enterprise in the cognitive science of language: A festschrift for Yukio Otsu*. 65-78. Hitsuji shobo: Tokyo.
Takano, Yuji. 2015. Surprising constituents as unlabelabeled syntactic objects. *Nanzan Linguistics*, 10, 55-73.
Takita, Kensuke., Goto, Nobu., and Yoshiyuki Shibata. 2016. Labeling through Spell-Out. *The Linguistic Review*, 33(1), 177-198.
Williams, Edwin. 1994. *Thematic structure in syntax*. MIT Press: Cambridge, Mass.

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