

PARAMETRIZING THE TIMING OF TRANSFER IN JAPANESE AND ENGLISH AND ITS CONSEQUENCES^{*}

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1 Introduction

The aim of this short paper is to propose an analysis of labeling of some {XP, YP} structures in Japanese. In English, Chomsky (2013) proposes that the label of {DP, vP} = XP in (1a) is determined as vP, since the DP internally merges with TP, rendering the lower copy invisible from LA. Another {XP, YP} problem arises when the DP merges TP in (1b). The label of YP is determined as $\langle \varphi, \varphi \rangle$ via feature-sharing (Agree) between the DP and T(P). In languages with φ -agreement, the strategy in (1b) is available. Then, what would the label of YP in φ -featureless languages like Japanese (Fukui 1986) be like? This is the central question the current study deals with.

- (1) a. $\{_{XP} DP, \{_{vP} v, \{_{VP} \dots \}\}\}: XP = vP$ (Labeling via Internal Merge)
b. $\{_{YP} DP, \{_{TP} T, \{_{vP} \overline{DP}, vP\}\}\}: YP = \langle \varphi, \varphi \rangle$ (Labeling via feature-sharing)

I propose that the timing and domain of Transfer is much more flexible in Japanese than in English due to the lack of its unvalued formal features. Combining the Labeling via Transfer (Takita et al. 2016) and the insight of Fukui and Kasai (2004), I will show how the current proposal explains the labeling problems in structure building, multiple nominative, and scrambling constructions, all of which involve {XP, YP} structures in Japanese. Let us first review the previous studies in section 2, and then move to the proposal and its consequences in section 3.

2 Parametrizing the Timing and Domain of Transfer

In addition to the abovementioned problem, Saito (2014, 2016) correctly points out that multiple nominatives and scrambling constructions also create {XP, YP} structures. It is widely known that

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in Japanese, nominative NPs may occur multiply in (2). Another well-known characteristic of the language is that arguments are freely scrambled, as in (3). Considering the labels of each node in (2) and (3), an immediate problem that arises is that they create {XP, YP} structures, which is problematic for the Labeling Algorithm (Chomsky 2013). In (4a) and (4b), nodes α , β , and γ are all unlabelable since feature-sharing is not an option in Japanese, which lacks ϕ -features.

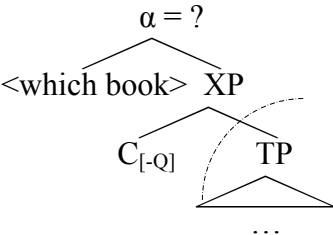
- (2) Harvard-ga seisuuron-ga daigakuinsei-ga sono gakkai-ni ki-ta.
 Harvard-NOM number:theory-NOM grad:students-NOM that conference come-PAST
 ‘As for Harvard, the graduate students of the number theory came to the conference.’
 (adapted from Fukui 2011)
- (3) a. Taro-ga Ziro-ni Hanako-o shookaisi-ta.
 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.
- (4) a. $\{\alpha \text{ NP1-ga}, \{\beta \text{ NP2-ga}, \{\gamma \text{ NP3-ga}, \{\nu\text{P}\dots\nu\}\}\}\}$ (=2)
 b. $\{\alpha \text{ NP}_i\text{-o}, \{\text{TP NP-ga} \{\dots \{\text{NP}_i\text{-}\theta\dots\}\}\}\}$ (=3)

I propose that multiple Transfer paves the way for determining the label of SO, following Goto (2013), Narita (2014) and Takita et al. (2016). The analysis incorporates the insight of Fukui and Kasai (2004) that the absence of uninterpretable ϕ -features in Japanese makes timing and domain of Transfer more flexible than in English. Following Takita et al.’s (2016) claim that Spell-Out contributes to determining labels of SO, I propose a novel analysis of why multiple nominatives and scrambling are possible in Japanese in light of labeling (Chomsky 2013).

2.1 Labeling via Transfer

Let us briefly review Takita et al. (2016) below. They claim that Spell-out determines a label of an otherwise unlabelable structure. In (5), the label of α is not determined by LA since <which book> and $C_{[-Q]}$ do not share [+Q] or [-Q] features. Goto (2013) and Takita et al. (2016) then suggest that Transfer applies to TP, which enables LA to detect $C_{[-Q]}$ as the label of α , as in (6b).

- (5) a. I wonder which book Bob thinks John bought.
 b. [α <which book> [$_{XP} C_{[-Q]} [_{TP} \dots]$]]

- (6) a.  b. 

(adapted from Takita et al. 2016:9)

What Spell-Out (Transferring the complement of C) does in (6a) is to reduce the set {C, TP} into {C}. Following Narita (2011, 2014), they assume that a head-LI in an SO serves as a head-LI again as soon as it Spells-Out its complement. This is compatible with Chomsky’s (2012) assumption that in natural language, a singleton set is converted into its member in (7).

(7) $\{X\} = X$ (Chomsky 2012:66)

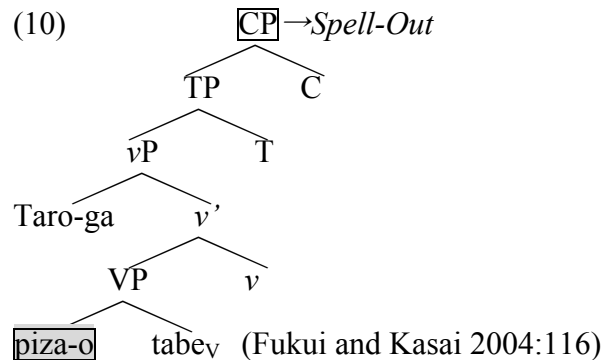
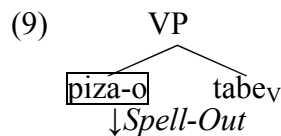
Since Spell-Out ‘recycles’ phasal C in CP as an LI again in (7), LA correctly determines the label of $\{\{\text{which book}\}, C\}$ as C. This is the essence of their analysis that Transfer contributes to labeling of an SO which is otherwise unlabelable.

2.2 On the Timing of Transfer (Fukui and Kasai 2004)

To the best of my knowledge, Fukui and Sakai (2003) and Fukui and Kasai (2004) are the first to associate the absence of uninterpretable features and the timing of Spell-Out in Japanese. Specifically, they attempt to reduce the optionality of scrambling in Japanese to the free application of Spell-Out. Chomsky (1995) suggests that Spell-Out may apply at any point through the derivation, but the existence of uninterpretable features restricts the timing (Fukui and Kasai 2004). Based on this, Fukui and Kasai claim that Spell-Out is applied much freer in Japanese than in English, since the absence of uninterpretable features does not pose any constraint on the timing of Spell-Out.

Assuming with Chomsky (2000, 2001) that vP and CP are phases, they further propose that nominal phrases are also phases (Fukui and Kasai 2004:116). In order to derive the object-subject order in (8), Fukui and Kasai propose that what is spelled-out earlier proceeds in the linear order.¹ In (9), the object NP, *pizza-o* ‘pizza’ in (8) is spelled-out independently, which is followed by another application of Spell-Out at the CP level in (10). It derives the object-subject, or more precisely, the object-CP order in PF.

(8) *Piza_i-o Taro-ga e_i tabe-ta (koto).*
 Pizza-ACC T.-NOM eat-PAST thing
 ‘(That) Taro ate pizza.’



Spell-Out in Fukui and Kasai (2004) is adopted from Chomsky (2001), which allows that the entire phase, including the phasal head to be sent to PF. Although these assumptions might be incompatible as is with the current theory of labeling, I follow Fukui and Kasai’s insightful proposal that the timing of Spell-Out is much less restricted in Japanese than in English and languages with uninterpretable features, namely $[u\phi]$ and $[uCase]$. Below, I combine the labeling via Transfer and the insight of Fukui and Kasai (2004) on the timing difference of it in Japanese and English.

2.3 On the Timing of Transfer (Fukui and Kasai 2004)

The Minimalist Program has pursued an optimal design of human language based on the working hypothesis that syntax is a system of Minimal Computation (Chomsky 2005). There are mainly two different types of economy considerations. Narita (2014:27) summarizes the tension between

¹ Note that the current proposal does not necessarily follow their claim on how spelled-out objects are linearized.

the two aspects of the computational efficiency as follows regarding the timing of Transfer: (i) to apply Transfer as many times as possible so as to reduce the memory load in the workspace (Epstein and Seely 2002); or (ii) to reduce the number of Transfer as much as possible for economy in derivational steps (Chomsky 1995, Fukui 1996).

What achieves a balance between the two different aspects of economy consideration? Narita (2014), following Gallego (2010), states that the interior of the phase, which is the complement domain of the phasal-head, is Transferred when it converges (Richards 2007). Thus, valuation of [uF], [u ϕ] and [uCase], is a prerequisite for the Transferred SO to be properly interpreted at the interfaces. In other words, unvalued features contribute to determining the phase cycle. If UG employs unvalued features to optimize the balance between (i) and (ii) above, then what should be the optimal case in languages without unvalued formal features like Japanese? I claim that such languages should be able to avail of either way of optimization: The absence of ϕ -features in the Lexicon enables Japanese to apply Transfer at any point in the derivation.

(11) Proposals:

- a. Japanese: Transfer *may* apply at any point after the phasal head discharges its θ -roles.
- b. English: Transfer *must* apply at valuation of [uF].

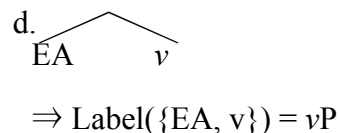
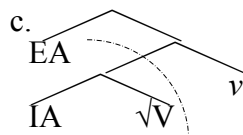
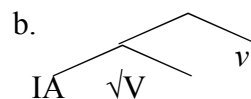
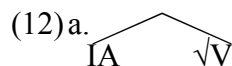
The point is that Transfer may or may not apply thanks to its absence of uninterpretable ϕ -features in Japanese. As Richards (2007) points out, valuation of the uninterpretable features and Transfer must apply simultaneously; otherwise they would become undistinguishable from the inherently valued features, say [v ϕ] on DPs. Such problem does not arise in Japanese, since there is no need of valuation thanks to the lack of uninterpretable ϕ - or Case-features in the Lexicon.

3 Consequences

Now we are ready to see the consequences of the proposal in (11). I claim that the current analysis solves the labeling problem of the symmetric constituents. First, I demonstrate how the {XP, YP} problem between EA and vP is to be solved in section 3.1. Then, we will observe that the proposal in (11) nicely captures why multiple nominative constructions in section 3.2, and scrambling in section 3.3, both of which create symmetric {XP, YP} structures, are available in Japanese.

3.1 Structure Building

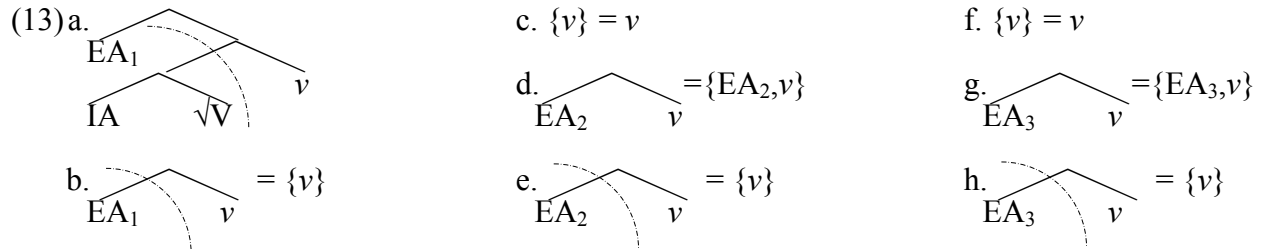
Let us see how a sentence with a transitive verb derives in Japanese under the current proposal in (11). First, the IA and \sqrt{V} merge to create a set in (12a), which is followed by merger of v in (12b). After v assigns a θ -role to its EA in (12c), it may Transfer its complement satisfying (11b). Transfer makes v become a LI again (12c) (Narita 2014). Thus, the structure after Transfer would be (12d).



Note that Transfer *may* or *may not* apply at this point in (12d). If it does not, then LA labels the SO as vP in (12d). I assume with Fukui (1986), Kato (2006) and others that EA in Japanese may remain inside vP . After T and C are introduced, the SOs are labeled as TP and CP respectively.

3.2 Multiple Nominatives

The proposal in (11) correctly explains why multiple nominative construction is possible in Japanese. After Transfer of the complement in (13b), only $\{v\}$ is left in the workspace. Following Chomsky (2012:66) and Takita et al. (2016:11), I assume that a singleton set is identical to its member, thus $\{v\} = v$. Therefore, v , which regains its phase-hood may still Transfer its merge-mate (Narita 2014) in (13b). Since Merge is free (Chomsky 2004), another EA_2 can be merged with v in (13d). Then Transfer applies again in (13e), which makes v available as an LI again, as in (13f). Ditto for still another EA_3 and further applications of Transfer and merger, which makes the multiple nominative construction available in Japanese. It captures Fukui’s insight that Unbounded Merge is in Full Force in Japanese (Fukui 2011:90).



Some might wonder why v in English does not Transfer its EA, after it regains its phase-hood in (13b). I claim that v may also apply Transfer, but its derived interior EA ends up being not convergent due to the existence of [uCase]. Thus, if Transfer applies at this point, EA does not satisfy Full Interpretation. On the other hand, in Japanese, it is an option. The EA does not bear any unvalued features, since case is licensed via merger, not as a reflex of ϕ -agreement in this language (Zushi 2014, 2016, see also Saito 2012). I specifically assume with Zushi’s (2016) proposal that nominative case is assigned to an NP when it merges v . This is summarized in (14).

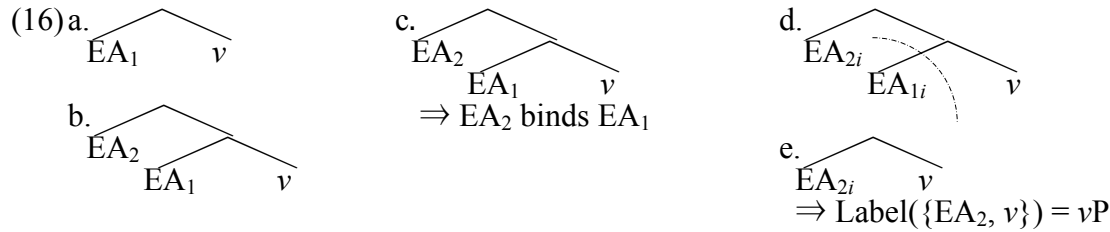
- (14) a. When a nominal is merged with a lexical head, its case feature is valued as accusative.
 b. When a nominal is merged with a phrase head (v , or n), its case feature is valued as nominative or genitive.
 c. Otherwise, the case feature of a nominal is valued as dative. (Zushi 2016:48)

As a matter of fact, a structurally higher nominative NP can bind the lower NP in Japanese, as illustrated in (15). Given this, some may wonder whether EA_1 and EA_2 can have the relevant binding relation in Narrow Syntactic derivation in (13), since EA_1 is no longer in Narrow Syntactic workspace when EA_2 is introduced to the derivation.

- (15) Toyota-sae_i-ga so_i-ko-no kogaisya-ga toosansi-ta.
 Toyota-even-NOM that-place-GEN subsidiary-NOM go.bankrupt-PAST
 ‘For even Toyota_i, its_i subsidiaries went bankrupt.’ (OKBVR)

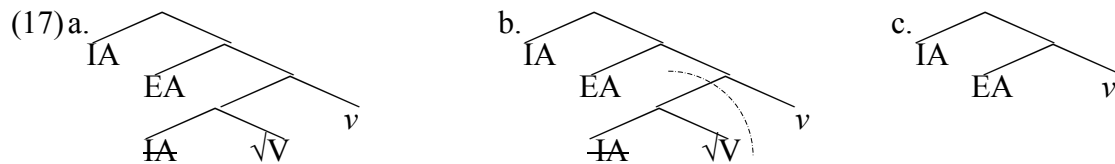
Note that the proposal in (11a) does not necessarily require v to Transfer its merge-mate *as soon* as it is merged. In other words, stacking of multiple EAs should also be available *per se*. After

guaranteeing the binding relation between EAs in (15), v may cyclically Transfer each EA as illustrated in (16) below.² Needless to say, the same applies when there are more than three EAs. Therefore, the binding fact in (15) is not a problem for the current proposal.



3.3 Scrambling

Still another consequence of the proposal on the parametrized timing of Transfer in (11) is labeling of scrambling constructions. I argue that the proposal in this paper is also compatible with the phenomenon. Let us observe it with a toy derivation in (17) and (18). In (17a), IA internally merges to the root. Note that v may or may not Transfer its complement even after it discharges all its θ -roles in (17a), as (11a) states. If Transfer applies at this point in (17b), then the structure would be something like (17c).



After v regains its phasehood in (17c), it further Transfers its sister EA in (18a). If it does not Transfer further, the label of the SO would be vP , since (18b) is an $\{H, XP\}$ structure, $\{IA, v\}$. The derivation depicted above captures the fact that scrambling is possible in Japanese, and it does not pose any problem to LA under the proposal (11) that the timing/domain of Transfer is less restricted in Japanese. The derivation depicted above captures the fact that scrambling is possible in Japanese and does not pose any problem to LA or Minimal Search.



4 Conclusion

In this paper, I have shown that the current analysis based on labeling via Spell-Out and the timing difference of Transfer successfully provide explanations to (i) structure building, labeling of (ii) multiple nominatives and (iii) scrambling constructions in Japanese. Due to the space limitation, I could not discuss the consequences of (11) in the C-domain. See Kobayashi (2017) for more details.

² If we strictly follow Zushi's definition, EAs in (16) might not be able to gain nominative case via merger with v , since she assumes that an NP acquires nominative case when it is merged with v or its projection in the classical sense. However, it would not be a problem if we slightly modify (14) and claim that a nominative case is assigned when a nominal becomes a sister with v even derivationally.

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