

Multiple Case Valuation and Its Implications

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Main claim

A nominal phrase can receive more than one Case

1. Multiple Case Valuation via Agree/Merge: General Introduction

1.1 Free Applications of Merge

- (1) Merge is the fundamental operation of the computational system of human language. It is defined as a set-formation operation that takes two syntactic objects (SOs), α and β , and forms a new SO, a two-membered set $\{\alpha, \beta\}$.
- (2) External Merge (EM) and Internal Merge (IM) are instantiations of the *single* operation Merge. The *single* operation Merge, in its simplest form, is not triggered but applies freely. (cf. Epstein, Kitahara, and Seely 2014, Chomsky 2013, 2015a).

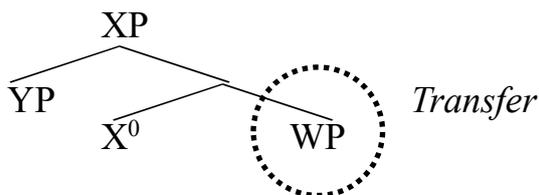
1.2 Phases, PIC, and Transfer

- (3) I assume that phases include nP , vP , and CP and that the following condition holds.

Phase Impenetrability Condition (PIC):

In phase α with head H, the domain of H (i.e., the complement of the phase head) is not accessible to operations outside α , only H and its edge are accessible to such operations. (Chomsky 2000: 108)

- (4) Once a phase (XP) has been completed, the complement of the phase head (WP) undergoes Transfer to the conceptual-intentional (CI) and sensorimotor (SM) interfaces.



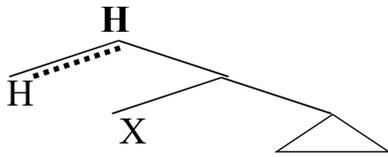
- (5) I assume that Transfer is an operation that cyclically strips off the complement of the phase head upon completion of a phase and sends it over to the interfaces (cf. Chomsky 2000, 2008, Narita 2011, 2014, Takita et al. 2016).

1.3 Labeling and Minimal Search

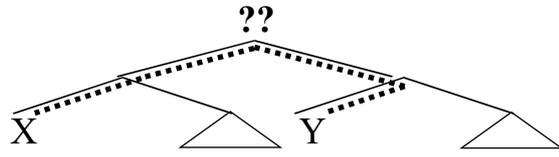
(6) Chomsky (2013, 2015a) assumes that Labeling Algorithm (LA) is just a minimal search (as in Agree), applying as part of the Transfer operation.

(7) If an SO is of the form $\{H, XP\}$, LA selects H as the label. In contrast, if an SO is of the form $\{XP, YP\}$, LA is ambiguous, locating both the heads of XP and YP.

a. $SO = \{H, XP\}$

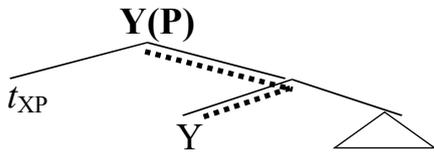


b. $SO = \{XP, YP\}$

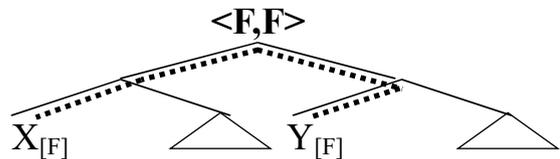


(8) Chomsky (2013, 2015a) proposes that there are two ways in which the SO in (7b) can be labeled. One way is to raise either XP or YP so that there is only one visible head. The other way is to share prominent features (i.e., ϕ or Q) via Agree (i.e., minimal search).

a. $SO = \{t_{XP}, YP\}$



b. $SO = \{XP_{[F]}, YP_{[F]}\}$ ($[F] = \phi, Q$)

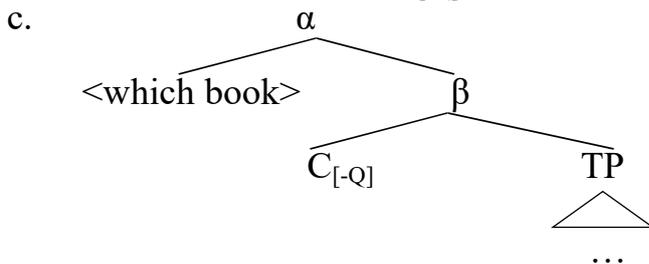


(9) However, as Tonoike (2014) and Takita et al. (2016) point out, the idea that the lower copy is invisible to LA (i.e., t_{XP} in (8a)) is incompatible with the copy theory of movement. Even after XP is raised in (8a), we still have the configuration (7b).

(10) Takita et al. (2016), following Narita (2011, 2014) and Goto (2013), propose that in cases like (7b) Transfer (Spell-Out in their terminology) contributes to labeling, as shown below (Angle brackets indicate copies).

a. I wonder which book Bob thinks John bought.

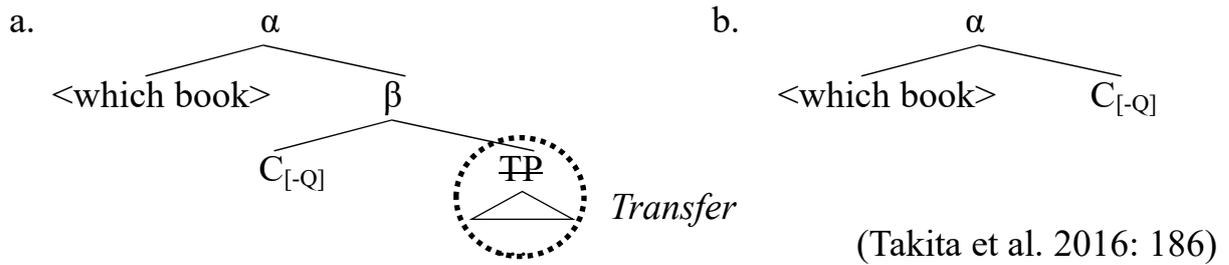
b. ... $[\alpha$ <which book> $[\beta$ $C_{[-Q]}$ $[TP$...]]]



(Takita et al. 2016: 185)

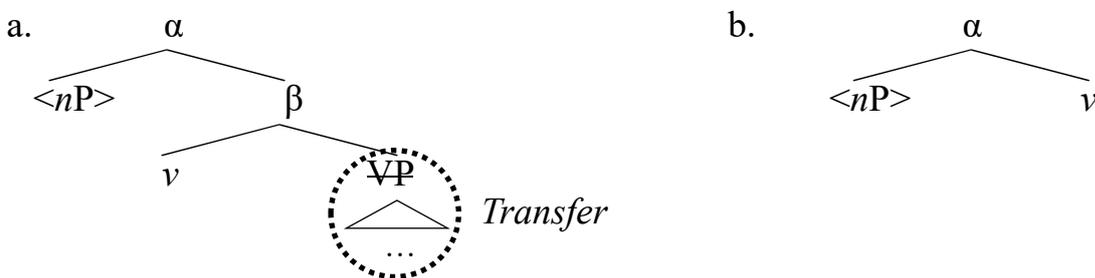
(11) The label of α remains unlabeled because it is still an XP-YP configuration.

However, Takita et al. (2016) argue that Transfer applies to TP and sends it to the interfaces, making it possible for LA to detect $C_{[-Q]}$ as the label of α .



(12) Transfer reduces the set $\{<which\ book>, \{C_{[-Q]}, TP\}\}$ into the set $\{<which\ book>, \{C_{[-Q]}\}\}$. Takita et al. (2016) assume, following Chomsky (2012), that a singleton set is equivalent to its member.¹ Thus, the set $\{<which\ book>, \{C_{[-Q]}\}\}$ will be regarded as the set $\{<which\ book>, C_{[-Q]}\}$.

(13) Let us now consider another XP-YP configuration, namely subject-raising.



(14) The label of α remains unlabeled. However, Transfer reduces the set $\{<nP>, \{v, VP\}\}$ into the set $\{<nP>, \{v\}\}$. Here again, if the singleton set $\{v\}$ is equivalent to its member v (cf. Chomsky 2012), the set $\{<nP>, \{v\}\}$ will be regarded as the set $\{<nP>, v\}$. Then, LA can unambiguously detect v as the label of α .

(15) Let us now turn to the treatment of root elements (i.e., V and T). Chomsky (2013, 2015a) assumes that V and T are unspecified (i.e., category-neutral) roots in the sense of Marantz (1997) and Borer (2005) and that they are too weak to serve as labels.

(16) However, Chomsky (2013, 2015a) assumes that V can serve as a label if its “Spec” position is filled by an element that bears features agreeing with it (i.e., “strengthening” in Chomsky’s terminology).

¹ Mathematically speaking, this is not correct because the set of the empty set $\{\emptyset\}$ is not equivalent to the empty set \emptyset . But I follow Chomsky (2012) and assume that a singleton set is equivalent to its member *as far as linguistic structure is concerned*. I would like to thank Naoki Fukui for pointing this out.

➤ **Two problems:**

(i) The claim that V is universally too weak to serve as a label is nothing but a stipulation, and should be avoided if possible (cf. Goto 2017).

(ii) If V is universally too weak to serve as a label unless its “Spec” position is filled by an element that bears features agreeing with it, V in non-agreeing languages like Japanese (cf. Fukui 1986, 1988), can never serve as a label since there is no way to “strengthen” the root element.

(17) Thus, I will depart from Chomsky (2013, 2015a) and assume instead, following Abe (2016) and Kitahara (2017), that V can serve as a label on its own.

(18) Chomsky (2015a) assumes that T in English (i.e., poor-agreement languages) is too weak to serve as a label unless its “Spec” position is filled by an element that bears features agreeing with it, while T in Italian (i.e., rich-agreement languages) is strong enough to serve as a label.

➤ **Two problems:**

(i) The claim that T is strong or weak runs the risk of stipulation and should be avoided if possible (cf. Goto 2017).

(ii) If T in poor-agreement languages is too weak to serve as a label unless its “Spec” position is filled by an element that bears features agreeing with it, T in Japanese can never serve as a label because Japanese lacks agreement features altogether (cf. Fukui 1986, 1988).

(19) Thus, I will depart from Chomsky (2013, 2015a) and assume instead, following Kitahara (2017), that T can label on its own.²

Assumptions:

(i) T can label on its own.

(ii) V can label on its own.

1.4 Case Valuation via Agree/Merge

(20) Chomsky (2013, 2015a,b) suggests that the Probe-Goal system should now be reduced just to minimal search (finding the first head(s)). For instance, Chomsky (2015b) states:

“The Probe is just... There isn’t any identifiable Probe. There is just a search

² I will leave open the question of how to derive the differences between English and Italian. Goto (2017) and Gallego (2017) attempt to derive the differences between the two types of languages without recourse to the feature-strength parameter on T.

procedure, which is trying to find... It takes a look at a syntactic object and it's asking the question, "What are you?" Now you could formulate Agree that way. You could say there is no Probe, it's just that you're searching for some unvalued feature, and then if you find it, you look for something that will be valued by its relations to it. That's the Probe-Goal relation. But they're reduced both just to search."

(Chomsky 2015b: 81)

(21) Chomsky (2015b) further states:

"I don't think we should take Probe-Goal too literally. In the case of tense and subject, you can think of the tense as searching for the subject, but that's kind of anthropomorphic. It's just that a relation exists, and it should be a minimal computational relation, and that minimal relation values unvalued features – actually, in both ways, like the tense will get valuation of ϕ -features and the subject will get Case." (ibid.)

(22) I will assume that Agree is reduced just to minimal search (finding the first head(s)) and that minimal relation values unvalued features (cf. Fukui and Narita 2012, Abe 2016, Fukui 2017, Kitahara 2017).

(23) I do not adopt the mechanism of feature inheritance (FI).³

➤ **Reasons:**

(i) FI is an operation quite different from the core operations of syntax such as Merge and Agree/Search. It is a *feature-depriving* mechanism, which cannot be reduced to anything.⁴

(ii) As Kitahara (2017) states, unless compelled by empirical facts, simpler (iib) should be selected over more complex (iia).

a. C/ ν^* bears uPhi inherently, and T/R inherits uPhi from C/ ν^* derivationally.

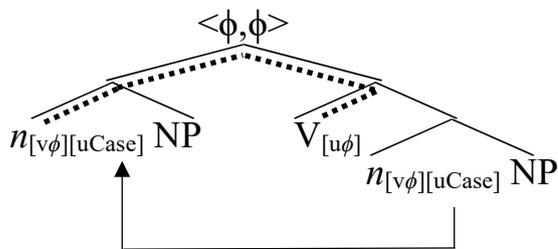
b. T/R bears uPhi inherently. (Kitahara 2017: 245)

(24) I thus assume instead that (finite) T and V inherently bear unvalued ϕ -features (cf. Fukui and Narita 2012).

(25) When an object nP undergoes "raising" into "SpecVP," Agree, which is now reduced to minimal search (applying from top-down and finding the first head(s)), holds between $[u\phi]$ of V and $[v\phi]$ of the object nP (more precisely, $[v\phi]$ of n), as shown below (cf. Fukui and Narita 2012, Chomsky 2013, 2015a, Kitahara 2017).

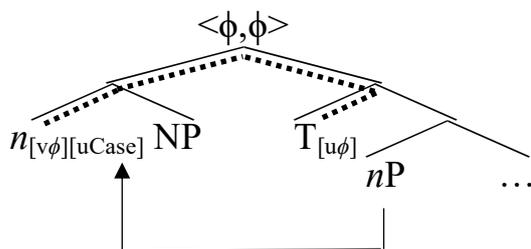
³ Fukui and Narita (2012), Kato et al. (2014), Gallego (2014), and Kitahara (2017) develop systems which do not adopt the mechanism of FI.

⁴ But note that Ouali (2008) proposes that C may keep a copy of the ϕ -features inherited by T.



(26) Minimal search (i.e., Agree) can find a pair of matched ϕ -features and the minimal relation values unvalued features. Such an XP-YP configuration is the only one where minimal search can find the two heads X and Y simultaneously (cf. Kitahara 2017; see also Fukui and Narita 2012). As a result, $[u\phi]$ of V gets valued and $[uCase]$ of n also gets valued (i.e., accusative).

(27) Let us now turn to subject-raising, where the subject nP moves up into “SpecTP,” as illustrated below.



(28) Minimal search, applying from top-down and finding the first head(s), locates both $[u\phi]$ of T and $[v\phi]$ of n simultaneously. As a result, $[u\phi]$ of T gets valued and $[uCase]$ of n also gets valued (i.e., nominative).

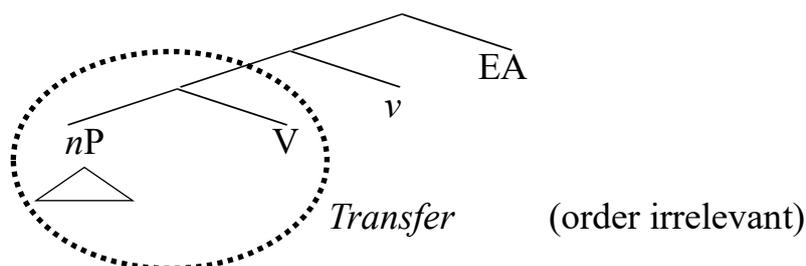
(29) Let us now turn to the mechanism of Case valuation in Japanese. Japanese is a language which does not exhibit ϕ -feature agreement. I follow Fukui (1986, 1988) in assuming that Japanese lacks ϕ -features in its lexicon (see also Kuroda 1988).

(30) Zushi (2014, 2016) proposes, drawing on some “classical” works such as Kuroda (1965, 1978, 1983, 1987, 1988), Saito (1982), and Fukui (1986, 1988), that Case valuation in Japanese occurs through (External) Merge, a proposal that I adopt.

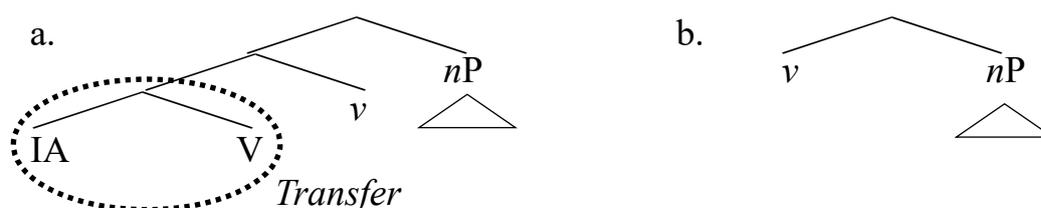
(31) Zushi (2014, 2016) argues that in Japanese, the unvalued Case feature of a nominal phrase is valued by the following rules.

- 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 phase 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)

(32) For example, suppose the nominal phrase *hon* ‘book’ is merged with the lexical head *kak-* ‘write’ to form the set $\{hon, kak-\}$. Upon completion of the vP phase, the complement (i.e., $\{hon, kak-\}$) undergoes Transfer. I assume that the unvalued Case feature of *hon* ‘book’ is valued as accusative as part of Transfer.⁵



(33) Let us then examine how nominative Case valuation takes place.



(34) In (33a), the nP is not merged with the *head* v . However, as Narita (2011, 2014), Goto (2013), Takita et al. (2016) and Kobayashi (2017) argue, upon completion of the vP phase, Transfer strips off the complement of the phase head v , making it possible for the nP to become a sister of v , as shown in (33b).

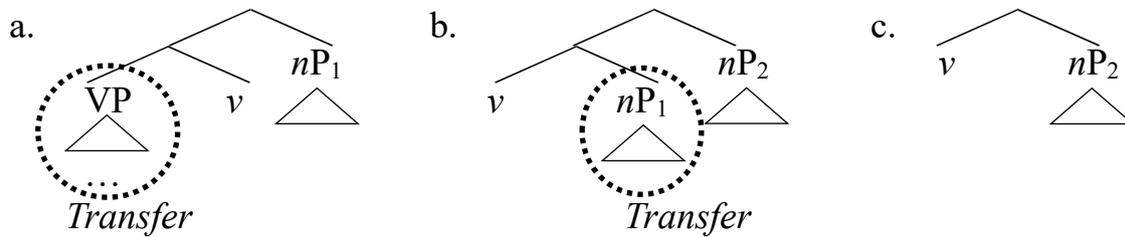
(35) Transfer reduces the set $\{nP, \{v, VP\}\}$ into the set $\{nP, \{v\}\}$. Given the assumption that a singleton set is equivalent to its member (cf. Chomsky 2012), the set $\{nP, \{v\}\}$ will be regarded as the set $\{nP, v\}$.

(36) Following Fukui (1986, 1988), I assume that Japanese lacks C in its lexicon. If so, the remaining constituents in (33b) will undergo Transfer at the point of TP (i.e., at the end of the overall derivation). Thus, when (33b) undergoes Transfer, LA detects v as the label of the SO $\{nP, v\}$ and nP is valued as nominative.

(37) This approach can be extended to multiple nominative sentences (cf. Kobayashi 2017). The derivation of multiple nominative sentences looks like the following.⁶

⁵ I would like to thank Naoki Fukui and Takaomi Kato for helpful discussion on this point.

⁶ Fukui (2011) and Zushi (2014, 2016) assume that Japanese allows unbounded Merge to be applied to the edge of a phase head, provided that the elements merged at the edge of a phase satisfy such a licensing condition as predication to receive an appropriate interpretation.



$$d. \{nP_1, \{v, VP\}\} \Rightarrow \{nP_1, \{v\}\} \Rightarrow \{nP_1, v\} \Rightarrow \{nP_2, \{nP_1, v\}\} \Rightarrow \{nP_2, \{v\}\} \\ \Rightarrow \{nP_2, v\}$$

(38) In the multiple nominative construction, more than one nominative phrase is merged at the edge positions of v (cf. Fukui 2011, Zushi 2014, 2016). In contrast, in the phenomena that I call multiple Case valuation, *a single nominal phrase* receives more than one Case.

1.5 Multiple Case Valuation via Agree/Merge

1.5.1 Multiple Case Valuation via Agree

(39) It is widely assumed that once Agree takes place between a “Probe” and a “Goal,” the latter is soon *inactivated* for further ϕ -agreement and Case valuation. Chomsky (2000, 2001, 2008) states this as the Inactivity Condition.

Inactivity Condition:

An A-chain becomes invisible to further computation when its uninterpretable features are valued. (Chomsky 2008: 150)

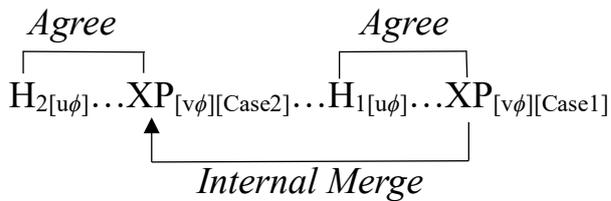
(40) However, given the empirical evidence for multiple Case valuation (cf. McCreight 1988, Bejar and Massam 1990, Yoon 1996, Svenonius 2005, Merchant 2006, Narita 2007, Richards 2012, Pesetsky 2013, Levin 2017, Chen 2018), I will depart from the Inactivity Condition and argue that even if the Case feature of a nominal phrase has been valued via Agree, it can enter into further ϕ -agreement and Case valuation as long as it is in narrow syntax.

(41) More specifically, I argue, following Bruening (2001) and Narita (2007), that Agree only values the unvalued Case feature and that Transfer renders the nominal phrase inactive for further ϕ -agreement and Case valuation.

(42) This implies that as long as the Case feature of a nominal phrase escapes Transfer (by moving to the edge of a phase) and is still in narrow syntax, it remains active and retains its ability to receive another Case value via further Agree.

(43) That the Case-valued nominal phrase can undergo IM into the edge of a phase can be illustrated by the derivation of the *wh*-question.

illustrated below.



- (49) (i) H_1 agrees with XP and the unvalued Case feature of XP gets valued.
(ii) XP undergoes IM into the edge of the phase head H_1 at Transfer. (*Agree only values* the unvalued Case feature of XP and the inactivation is suspended till the point when it undergoes Transfer.)
(iii) XP remains active and retains its ability to receive another Case value via further Agree.
(iv) H_2 agrees with XP and the Case feature of XP gets *revalued*.
- (50) Here I would like to provide further evidence for multiple Case valuation.

(i) Niuean

ergative Case \Rightarrow middle Case

a. Manako a Sione ke kai **he tau tama** e tau apala.
want ABS Sione SUBJUNCT eat **ERG PL child** ABS PL apple
‘Sione wants for the children to eat the apples.’

b. Manako a Sione [**he tau tama**]_i ke kai **t_i** e tau apala.
want ABS Sione **MID PL child** SUBJUNCT eat ABS PL apple
‘Sione wants the children to eat the apples.’ (Bejar and Massam 1990: 72)

(ii) Greek

nominative Case \Rightarrow accusative Case

g. I Maria ekane **ton Jani_i** na **t_i** klapsi orgismenos.
the Mary made **the John-ACC** SUBJUNCT cries-3SG angry-NOM
‘Mary made John cry angry.’ (Alexiadou et al. 2010: 110; boldface mine)

(iii) Korean

dative Case + nominative Case

h. Cheli-**hanthey-ka** ton-i isse.
Cheli-DAT-NOM money-NOM have
‘Cheli has money.’

dative Case + accusative Case

i. Swunhi-ka Yenghi-**hanthey-lul** chayk-ul cwuesse.
Swunhi-NOM Yenghi-DAT-ACC book-ACC gave

‘Swunhi gave Yenghi the book.’

(Levin 2017: 448)

(51) The stacked Case values are realized differently from language to language (cf. Yoon 1996). There are (at least) three possibilities to consider.

- (i) **Case₂+Case₁**: The *last* Case value received is realized morphologically.
- (ii) **Case₂+Case₁**: The *first* Case value received is realized morphologically.
- (iii) **Case₂+Case₁**: *All* the Case values received are realized morphologically.

1.5.2 Multiple Case Valuation via Merge

(52) Zushi (2014, 2016) proposes that in non-agreeing languages like Japanese, Case valuation occurs through (External) Merge.⁹

- 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 phase 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)

(53) The insights of Bruening (2001) and Narita (2007) can be easily and naturally preserved under the Merge-based Case valuation system as well.

➤ Bruening (2001) and Narita (2007)

Agree *only values* the unvalued Case feature of a nominal phrase and that the inactivation of it is suspended till the point when it undergoes Transfer.

(54) That is, we can assume that Merge as well as Agree does not render the nominal phrase inactive and that the inactivation of it is done by Transfer at each phase in a cyclic manner.

➤ a natural consequence of the simplest conception of Merge

(55) For example, when the nominal phrase *hon* ‘book’ is merged with the verb *yom-* ‘read’, the nominal phrase is not rendered inactive by Merge. The Case feature of *hon* “book” gets valued when it undergoes Transfer.

{*hon*_[uCase], *yom-*}

(56) I thus assume that the nominal phrase *hon* ‘book’ remains active and can receive another Case value *as long as it is in narrow syntax* (by moving to the edge of a phase).

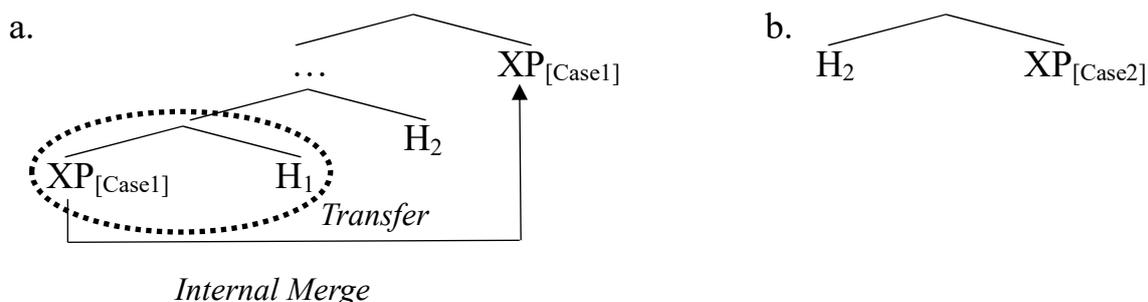
⁹ See also Saito (2012) for a similar proposal.

(57) I also assume that if EM and IM are instantiations of the *single* operation Merge (cf. Chomsky 2013, 2015a and Epstein, Kitahara, and Seely 2014), then Case valuation in terms of IM should also be possible in Japanese (contra Zushi 2014, 2016).

Assumption:

Case valuation in Japanese occurs through both EM and IM.

(58) If a nominal phrase merged with an appropriate head undergoes IM at Transfer and becomes a sister of another appropriate head, the two copies receive two different Case values. I will refer to this as *multiple Case valuation via Merge*.



(59) (i) XP is merged with H₁ (a lexical head) and it undergoes IM into the edge of H₂ (a phase head) at Transfer.^{10,11} (When the complement of H₂ undergoes Transfer, the lower XP receives a Case value.)

(ii) The higher XP becomes a sister of H₂ (a phase head) when its “complement(s)” undergo(es) Transfer. (Since the higher XP is still in narrow syntax, it remains active and retains the ability to receive another Case value.)

(iii) The higher XP receives another Case value (when it undergoes Transfer).

(60) The idea of multiple Case valuation in Japanese is, in fact, a very old one, dating

¹⁰ Under the proposed system, nothing would prevent the moved XP at the edge of H₂ from undergoing further IM into the edge of the same head, as illustrated below.

(i) [_{H2P} XP_i [_{H2P} t_i [_{H1P} ... t_i ...]]]].

If H₂ corresponds to *v*, this would yield *ga-ga* (i.e., nominative-nominative) stacking, which is absent in Japanese. But the derivation shown in (i) can be excluded if we assume that the relevant movement is “too close” in the sense of Fukui (1993). Fukui (1993) argues that edge-to-edge movement like (i) is prohibited. I would like to thank Toru Ishii for helpful discussion.

¹¹ If XP undergoes movement into the edge of T, a problematic XP-YP configuration will be created. This problem would be resolved however, if we follow Fukui (1988) in claiming that Japanese also lacks T in its lexicon and that the head of clauses in Japanese is V.

(i) The head of S in Japanese is V, rather than T. (Fukui 1988: 260)

Translated into the current phase theory, (i) means that the head of S in Japanese is *v*. If (i) is correct, then it follows that clauses in Japanese project up to *v*P. If so, upon completion of a *v*P phase, the complement of the phase head undergoes Transfer. Consequently, the label will be determined to *v*. Alternatively, Takaomi Kato suggests the possibility that since Japanese lacks C in its lexicon, TP constitutes a phase if we follow Bošković’s (2014) “highest-phase-is-a-phase” approach. If this is correct, upon completion of a TP phase, the complement of the phase head (i.e., *v*P) undergoes Transfer. Consequently, the label will be determined to T.

back to Kuroda (1965). Under Kuroda’s (1965) system, certain nominal phrases are introduced into the base structure without Case particles. These “bare” nominal phrases (i.e., unmarked NPs in Kuroda’s terminology) are ready to get structural Cases *ga* (i.e., nominative) and *o* (i.e., accusative) based on the linear order of the “bare” nominal phrases.

(61) Kuroda’s cyclic Case marking system allows a nominal phrase to receive more than one structural Case in the course of a derivation.

- a. John-ni doicugo-ga deki-ru.
 John-DAT German-NOM can-PRES
 ‘John can speak German.’ (Kuroda 1965: 190)
- b. (((John)_{NP} ((doicugo)_{NP} hanas)_{VP-u})_{Comp-koto})_{NP} (deki)_{VP-ru}.
 c. (((John)_{NP-ga} ((doicugo)_{NP-o} hanas)_{VP-ru})_{Comp-koto})_{NP} (deki)_{VP-ru}.
 d. (John)_{NP-ni} (((doicugo)_{NP-o} hanas)_{VP-ru})_{Comp-koto})_{NP} (deki)_{VP-ru}.
 e. (John)_{NP-ni} (doicugo)_{NP-o} (deki)_{VP-ru}.
 f. (John)_{NP-ni} (doicugo)_{NP-o-ga} (deki)_{VP-ru}.
 g. John-ni doicugo-ga deki-ru. (Kuroda 1965: 193-194; boldface mine)

(62) At the intermediate stage of the derivation (61f), nominative Case (*-ga*) is assigned to the nominal phrase *doicugo* ‘German’ to which accusative Case (*-o*) has already been assigned in the first cycle (cf. Kuroda 1978, 1983, 1986).

(63) Kuroda (1965) states that this produces a string of the form NP-*o-ga* (i.e., NP-accusative-nominative), from which the accusative particle *o* will have to be deleted.

(64) Doubling of structural Cases is a natural consequence of the system of *cyclic* Case assignment since the structural Cases *ga* and *o* are assigned cyclically and *o* will be seen as “unmarked” at the next cycle. In relation to this, Kuroda (1983) states the following.

“I assume, as in my earlier work, that nominative case marking can override (i.e., can be superimposed on) any case-marker that originates in an embedded sentence. The possibility of **double case marking**, then, is another parametric difference.”
 (Kuroda 1983: 246; boldface mine)

(65) The theory of multiple Case valuation via Merge that I am proposing can thus be seen as a modern revival of Kuroda’s insights which have largely been discounted in the literature. But it is designed to predict more of what is possible in the grammar of Japanese.

Case Realization under Kuroda's theory

- a. ✓ Case₂+Case₁ b. *Case₂+Case₁ c. *Case₂+Case₁

Case Realization under Our Theory

- a. ✓ Case₂+Case₁ b. ✓ Case₂+Case₁ c. ✓ Case₂+Case₁

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