

TOWRAD A THEORY OF SYNTACTIC VARIATION

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How can a Merge-based efficiency-compliant mechanism deal with a “head-initial vs. head-final” variation?
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1. INTRODUCTION

In the GB framework, language variation was captured by parameterization of the principles (Chomsky 1981). For example, the head-parameter – “head-initial vs. head-final” – was implemented to distinguish two types of languages, e.g. English and Japanese. In this paper, adopting a minimalist perspective (Chomsky 2007, 2008, 2013), I would like to discuss recent developments, under which the observed typological variation between English and Japanese (in particular, word order) is shown to follow without parameterizing the Merge-based efficiency-compliant mechanism itself.

2. RECENT DEVELOPMENTS

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

Saito, Mamoru. 2012. Case Checking/Valuation in Japanese: Move, Agree, or Merge? *Nanzan Linguistics* 8, 109-127. [<http://www.ic.nanzan-u.ac.jp/LINGUISTICS/publication/pdf/NL8-6-saito.pdf>]

3. SAITO 2012

basic facts #1

- (1) a. Kiyomi-wa migime-dake-o tumur-e-ru (can > only)
Kiyomi-TOP right.eye-only-ACC close-can-Pres
'Kiyomi can wink with her right eye.'
NP-TOP NP-only-ACC V-can-Pres
- b. Kiyomi-wa migime-dake-ga tumur-e-ru (only > can)
Kiyomi-TOP right.eye-only-NOM close-can-Pres
'It is only her right eye that Kiyomi can close.'
NP-TOP NP-only-NOM V-can-Pres
- c. Kiyomi-ga migime-dake-ga tumur-e-na-i (koto) (only > not > can)
Kiyomi-NOM right.eye-only-NOM close-can-Neg-Pres fact
'(the fact that) it is only her right eye that Kiyomi cannot close.'
NP-TOP NP-only-NOM V-can-Neg-Pres
- i. The accusative object in (1a) scopes under the predicate e 'can'. (Tada 1992)
ii. The nominative object in (1b) scopes over the predicate e 'can'. (Tada 1992)
iii. The nominative object in (1c) scopes over the negation. (Koizumi 1998)
- (2) Nominative Case is licensed by T, whether it is on the subject or on the object, and it takes a higher scope.
- i. The nominative object in (1b,c) moves to Spec-T and gets licensed by T. (Tada 1992, Koizumi 1998)
ii. The nominative object in (1b,c) stays in situ and gets licensed by T through phi-agreement. (Ura 1999)

against a movement approach

- (3) a. Hanako-ga [_{VP} Taroo-ni [_{VP} zibun_{i,j}-no wani-o tabe]]-sase-ta (koto)
 Hanako-NOM Taroo-DAT self-GEN alligator-ACC eat-make-Past fact
 '(the fact that) Hanako made Taroo eat her/his (pet) alligator.'
 NP-NOM [_{VP} NP-DAT [_{VP} self-GEN NP-ACC V]]-make-Past
- b.*wani-ga Hanako-niyotte [_{VP} Taroo-ni [_{VP} t tabe]]-sase-rare-ta (koto)
 alligator-NOM Hanako-by Taroo-DAT eat-make-Passive-Past fact
 'Lit. (the fact that) the alligator was made by Hanako to be eaten by Taroo.'
 NP-NOM NP-by [_{VP} NP-DAT [_{VP} t V]]-make-Passive-Past
- c. Hanako-ga [_{VP} Taroo-ni [_{VP} wani-o/-ga tabe]]-sase-rare-ru (koto)
 Hanako-Nom Taroo-DAT alligator-ACC/-NOM eat-make-can-Past fact
 '(the fact that) Hanako can make Taroo eat alligator meat.'
 NP-NOM [_{VP} NP-DAT [_{VP} NP-ACC/-NOM V]]-make-Passive-Past
- i. The causee Taroo in (3a) can be the antecedent of the subject-oriented reflexive *zibun*.
 => Taroo is the subject of the embedded clause.
- ii. In (3b), the object cannot be passivized out of the causative complement.
 => The movement of the object crosses the embedded subject Taroo, inducing a violation of minimality.
- iii. In (3c), the object in the causative construction can be in nominative when the potential suffix (*rar*)e 'can' is attached to the causative verb.
 => If the object moves to Spec-T to have its Case licensed by T, the movement should violate minimality.
- (4) (3a-c) show that the object does not move to Spec-T; T can license its Case without invoking movement.

against an agreement approach

- (5) a. Hanako-ni/-ga Taroo-ga zibun_{i,j}-no ie-de sikar-e-ru (koto)
 Hanako-DAT/-NOM Taroo-NOM self-GEN house-at scold-can-Pres fact
 '(the fact that) Hanako can scold Taroo at her/*his house.'
 NP-DAT/-NOM NP-Nom self-GEN N-at V-can-Pres
- b. Kiyomi-ga migime-dake-ga tumur-e-na-i (koto) (only > not >can)
 Kiyomi-NOM right.eye-only-NOM close-can-Neg-Pres fact
 '(the fact that) it is only her right eye that Kiyomi cannot close.'
 NP-TOP NP-only-NOM V-can-Neg-Pres
- c. Fewer than five knights [_{VP} appeared t at the gate] every day. (fewer than 5>every, every>fewer than 5)
- d. There [_{VP} appeared fewer than five knights at the gate] every day. (every>fewer than 5)
- i. The nominative object in (5a) does not qualify as the antecedent for the subject-oriented *zibun* 'self'.
 => If subject is defined as a phrase in Spec-T, the nominative object in (5a) remains in situ. (Ura 1999)
 => T checks the Case feature of nominative objects through phi-agreement. (Ura 1999)
- ii. The nominative object in (5b) scopes over the negation.
 => It is phi-agreement that gives the nominative object the wide scope interpretation. (Ura 1999)
- iii. (5c,d) show that *fewer than five knights* necessarily takes a narrow scope when it stays in situ.
 => Phi-agreement alone cannot give the nominative object the wide scope interpretation. (L&S1991)
- (6) (5a-d) show that phi-agreement does not suffice to account for the wide scope property of Japanese nominative objects.

(7) The nominative object in situ has its Case licensed by T, and it takes a higher scope, but how?

- i. How can the nominative object have its Case license by T?
- ii. How can the nominative object take a higher scope?

basic facts #2

(8) Koko-kara-ga huzi-san-ni nobori-yasu-i
 here-from-NOM Mt. Fuji-DAT climb-easy-Pres
 'It is easy to climb Mt. Fuji from here.'
 PP-NOM NP-DAT V-easy-Pres

- i. PPs, as opposed to DPs, lack phi-features, but they are Case marked extensively in Japanese.
- ii. Case in Japanese is independent of phi-agreement.

(9) English has unvalued phi-features (uPhi), whereas Japanese lacks uPhi. (Kuroda 1988, Saito 2007, 2012)

How can the nominative object have its Case license by T?

- (10) English Case is a reflex of phi-agreement.
 - a. Case is valued as nominative by phi-agreement with T that inherits uPhi from C.
 - b. Case is valued as accusative by phi-agreement with (transitive) V that inherits uPhi from v*.
- (11) Japanese Case is a reflex of merger.
 - a. Case is valued as nominative by merger with a syntactic object that contains {T, C} as its term.
 - b. Case is valued as accusative by merger with a syntactic object that contains {V, v*} as its term.

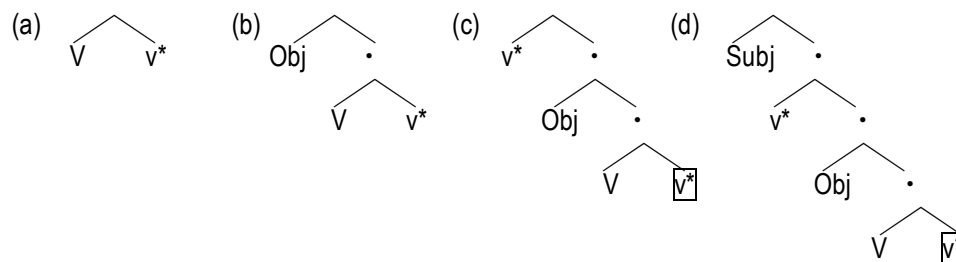
How can the nominative object take a higher scope?

(12) A nominative object, merged with a syntactic object SO that contains {T, C} as its term, is structurally higher than whatever this SO contains as its term.

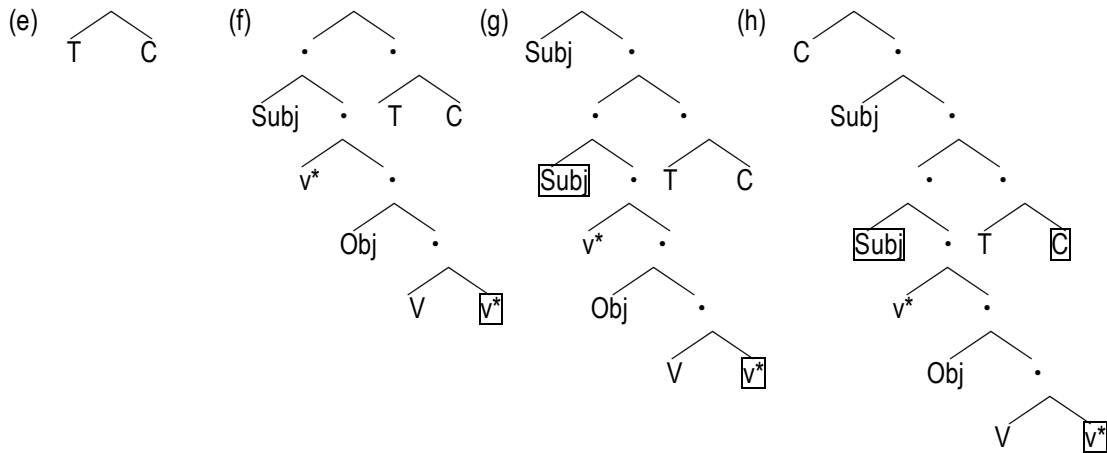
alternative derivations for Japanese (adapted from Saito 2012)

(13) Hanako-ga Taroo-o sikat-ta
 Hanako-NOM Taroo-ACC scold-Past
 'Hanako scolded Taroo.'
 NP-NOM NP-ACC V-Past

- (14)a. {V, v*} (accusative)
- b. {Obj-ACC, {V, v*}}
- c. {v*, {Obj-ACC, {V, v*}}}
- d. {Subj-Case, {v*, {Obj-ACC, {V, v*}}}}

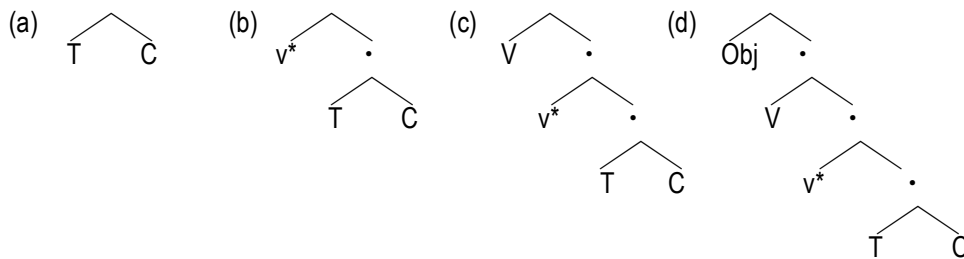


- (14)e. {T, C} (nominative)
 f. {{Subj-Case, {v*, {Obj-ACC, {V, v*}}}}, {T, C}}
 g. {Subj-NOM, {{Subj-NOM, {v*, {Obj-ACC, {V, v*}}}}, {T, C}}}
 h. {C, {Subj-NOM, {{Subj-NOM, {v*, {Obj-ACC, {V, v*}}}}, {T, C}}}}

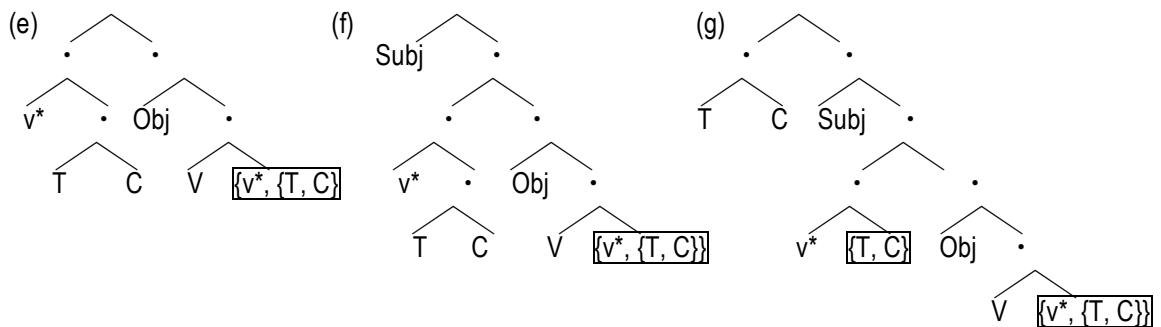


- (15) Hanako-ga rosiago-ga wakar-u (koto)
 Hanako-NOM Russian-NOM understand-Pres fact
 '(the fact that) Hanako understands Russian.'
 NP-NOM NP-ACC V-Past

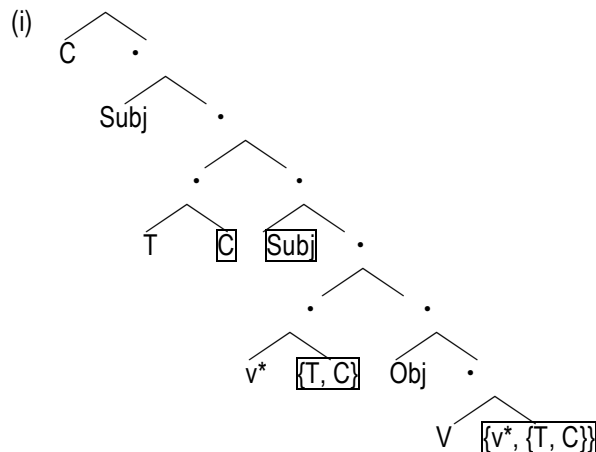
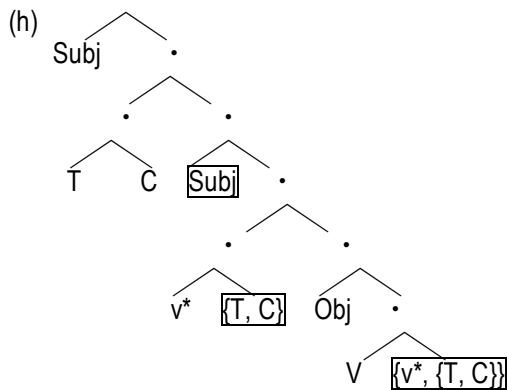
- (16)a. {T, C} (nominative)
 b. {v*, {T, C}}
 c. {V, {v*, {T, C}}}
 d. {Obj-NOM, {V, {v*, {T, C}}}}



- (16)e. {{v*, {T, C}}, {Obj-NOM, {V, {v*, {T, C}}}}}
 f. {Subj-NOM, {{v*, {T, C}}, {Obj-NOM, {V, {v*, {T, C}}}}}}
 g. {{T, C}, {Subj-NOM, {{v*, {T, C}}, {Obj-NOM, {V, {v*, {T, C}}}}}}}



- (16)h. {Subj-NOM, {{T, C}, {Subj-NOM, {{v*, {T, C}}, {Obj-NOM, {V, {v*, {T, C}}}}}}}}}}
 i. {C, {Subj-NOM, {{T, C}, {Subj-NOM, {{v*, {T, C}}, {Obj-NOM, {V, {v*, {T, C}}}}}}}}}}}



- (17) Saito's (2012) Merge-based analysis of Case allows nominative objects to have their Cases valued by T-C (at its syntactic birth), and scope over the verbal complex, without invoking any movement of nominative objects.

- i. What distinguishes I-languages attained (e.g. Japanese, English)?
- ii. How does the narrow syntax generate derivations (for e.g. Japanese, English)?
- iii. How can cross-linguistic variation (e.g. head-initial vs. head-final) be captured?

4. LOCUS OF PARAMETRIC VARIATION

- (18) English has uPhi, whereas Japanese lacks uPhi.
- (19) Koko-kara-ga huzi-san-ni nobori-yasu-i
 here-from-NOM Mt. Fuji-DAT climb-easy-Pres
 'It is easy to climb Mt. Fuji from here.'
- i. PPs, as opposed to DPs, lack phi-features, but they are Case marked extensively in Japanese.
 - ii. Case in Japanese is independent of phi-agreement.
- (20) phi-agreement is no longer a prerequisite for movement; movement is just an instance of merger (Chomsky 2007, 2008, 2013)
- (21) phi-agreement no longer triggers cyclic Transfer; it is Case that determines the size of phases (Takahashi 2010, Saito 2012, see also EKS 2012)
- (22) English Case is a reflex of phi-agreement, whereas Japanese Case is a reflex of merger.
- (23) I-languages attained may differ in those features (phi, Case) related to externalization at the SM interface.

5. MERGE-BASED GENERATIVE PROCEDURES

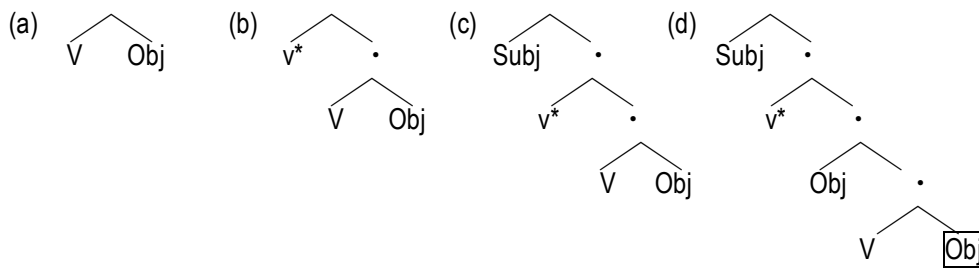
- (24) One recent development in minimalist theory (Chomsky 2007, 2008, 2013) is that Merge, formulated in the simplest form (Merge(α , β)= $\{\alpha$, $\beta\}$), applies freely as long as it conforms to third factor principles such as the no-tampering condition and the condition of inclusiveness.

- (25) Merge is no longer driven by the valuation of phi or Case features.
- (26) The output of Merge does not overtly encode a label; it is just $\{\alpha, \beta\}$. For an SO to be interpreted, however, it is necessary to know what kind of object it is.
- (27) Chomsky (2013) takes labeling to be the process of finding the relevant (object identification) information of $\{\alpha, \beta\}$ generated by Merge, and he proposes that such labeling is “just minimal search, presumably appropriating a third factor principle, as in Agree and other operations.”
- (28) Suppose that Merge is defined in the simplest form and its applications follow from the third factor principles. Then, there may be no room to set parameters in either the definition of Merge or in its applications. If so, how can I-languages attained yield cross-linguistic variation (e.g. word order)?

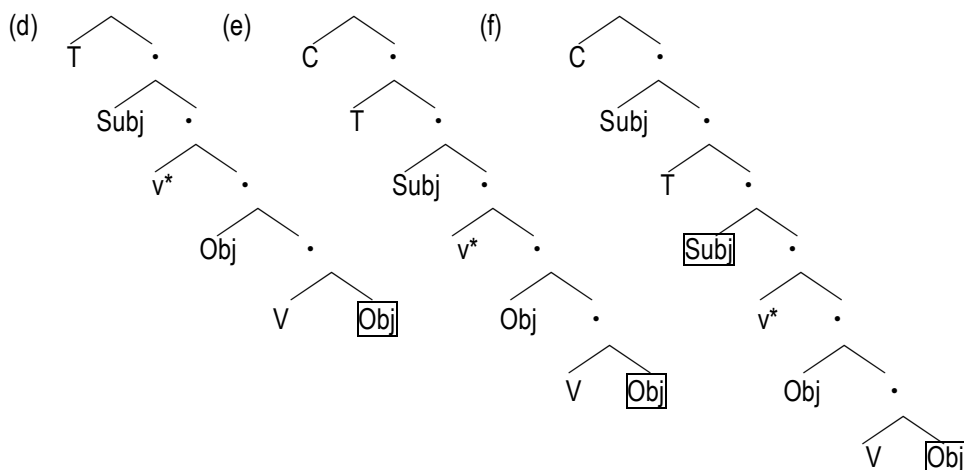
6. ALTERNATIVE DERIVATIONS THAT ARE CONSISTENT WITH THIRD FACTOR PRINCIPLES

(29) (Tom said) that John criticized Mary

- (30)a. EM (V, Obj) \Rightarrow {V, Obj}
- b. EM (v*, {V, Obj}) \Rightarrow {v*, {V, Obj}}
- c. EM (Subj, {v*, {V, Obj}}) \Rightarrow {Subj, {v*, {V, Obj}}}
- d. IM (Obj, {V, Obj}) \Rightarrow {Subj, {v*, {Obj, {V, Obj}}}}

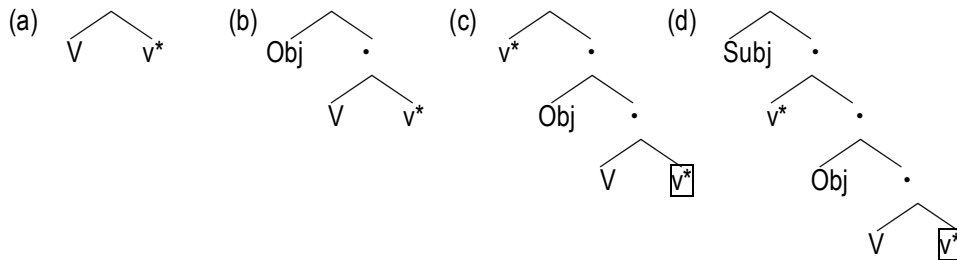


- (30)d. EM (T, {Subj, {v*, {V, Obj}}}) \Rightarrow {T, {Subj, {v*, {V, Obj}}}}
- e. EM (C, {T, {Subj, {v*, {V, Obj}}}}) \Rightarrow {C, {T, {Subj, {v*, {V, Obj}}}}}
- f. IM (Subj, {T, {Subj, {v*, {V, Obj}}}}) \Rightarrow {C, {Subj, {T, {Subj, {v*, {V, Obj}}}}}}

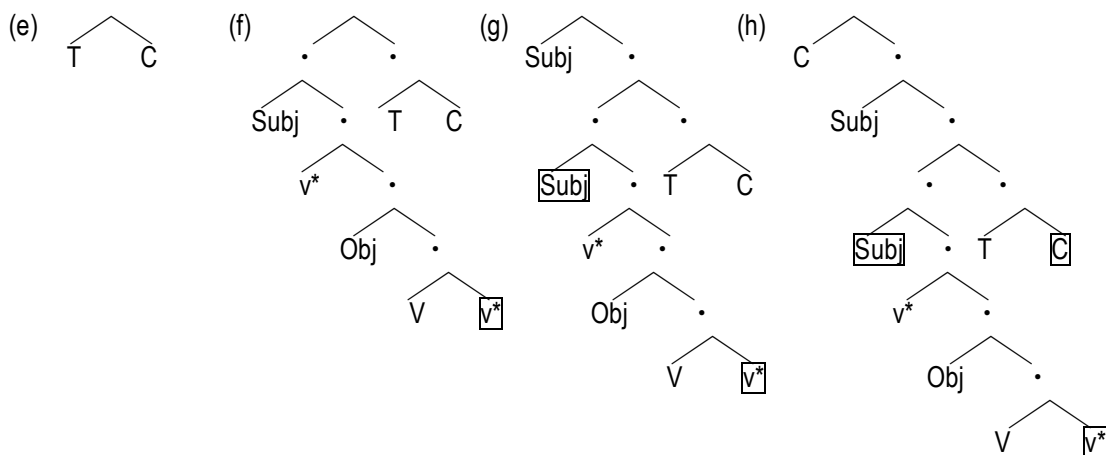


- (31) Taroo-ga Hanako-o hihansi-ta-to (Ken-ga itta)
 Taroo-NOM Hanako-ACC criticize-Past-Comp (Ken-NOMsaid)
 '(Ken said) that Taroo criticized Hanako'

- (32)a. EM (V, v*) => {V, v*}
 b. EM (Obj, {V, v*}) => {Obj, {V, v*}}
 c. IM (v*, {Obj, {V, v*}}) => {v*, {Obj, {V, v*}}}
 d. EM (Subj, {v*, {Obj, {V, v*}}}) => {Subj, {v*, {Obj, {V, v*}}}}



- (32)e. EM (T, C) => {T, C}
 f. EM ({Subj, {v*, {Obj, {V, v*}}}}, {T, C}) => {{Subj, {v*, {Obj, {V, v*}}}}, {T, C}}
 g. IM (Subj, {{Subj, {v*, {Obj, {V, v*}}}}, {T, C})) => {Subj, {{Subj, {v*, {Obj, {V, v*}}}}, {T, C}}}
 h. IM (C, {Subj, {{Subj, {v*, {Obj, {V, v*}}}}, {T, C}}}) => {C, {Subj, {{Subj, {v*, {Obj, {V, v*}}}}, {T, C}}}}



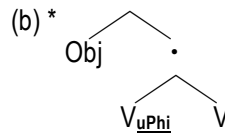
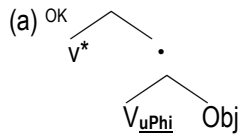
(33) Unlike the English derivation (30), the Japanese derivation (32) first externally merges two heads, a phase-head and a non-phase-head, and then internally merges the phase-head to some higher position.

(34) The alternative derivations (for English and Japanese) are consistent with third factor principles of efficient computation; hence, they are (in principle) available options to the narrow syntax.

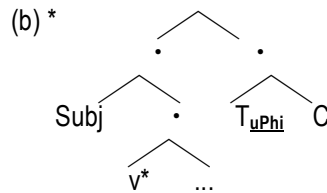
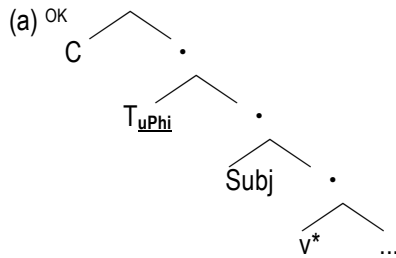
7. MERGE IS FREE, BUT IF THE WRONG CHOICE IS MADE, THE DERIVATION WILL FAIL

- (35) English has uPhi, whereas Japanese lacks uPhi.
- (36) English Case is a reflex of phi-agreement:
 a. Case is valued as nominative by phi-agreement with T that inherits uPhi from C.
 b. Case is valued as accusative by phi-agreement with (transitive) V that inherits uPhi from v*.
- (37) Japanese Case is a reflex of merger:
 a. Case is valued as nominative by merger with a syntactic object that contains {T, C} as its term.
 b. Case is valued as accusative by merger with a syntactic object that contains {V, v*} as its term.

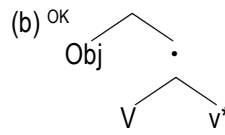
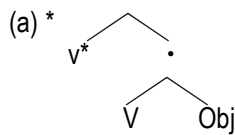
(38) English: Obj must be merged in the search domain of V that inherits uPhi from the phase-head v*;
otherwise, uPhi (and uCase) won't get valued.



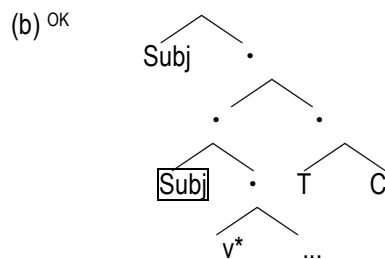
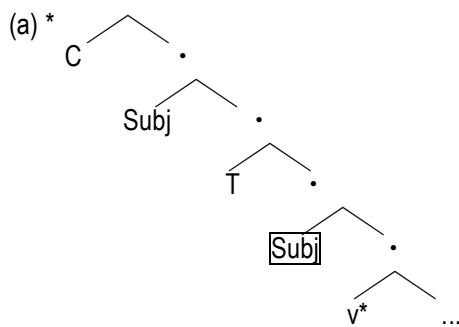
(39) English: Subj must be merged in the search domain of T that inherits uPhi from the phase-head C;
otherwise, uPhi (and uCase) won't get valued.



(40) Japanese: Obj must be merged with a syntactic object that contains {V, v*} as its term;
otherwise, uCase won't get valued.



(41) Japanese: Subj must be merged with a syntactic object that contains {T, C} as its term;
otherwise, uCase won't get valued.



(42) The narrow syntax itself need not be parameterized; it can generate two distinct derivations, but if the wrong choice is made, the derivation will fail.

(43) Q: What motivates the so-called excorporation of lexical materials such as v*, C in Japanese?

A: Such IM-application is a pre-requisite for labeling by minimal search (presumably at the point of Transfer-application); without it, the resulting syntactic objects would appear at CI with no label.

8. ALTERHANTIVE DERIVATIONS AND THEIR OUTPUT REPRESENTATIONS

(44) Despite their different (but third factor compliant) executions of Merge, the derivations of (29) and (31), given in (30) and (32), yield syntactic objects, arguably identical in the eyes of the conceptual-intentional (CI) systems, if a lower copy of the moved element is invisible to minimal search.

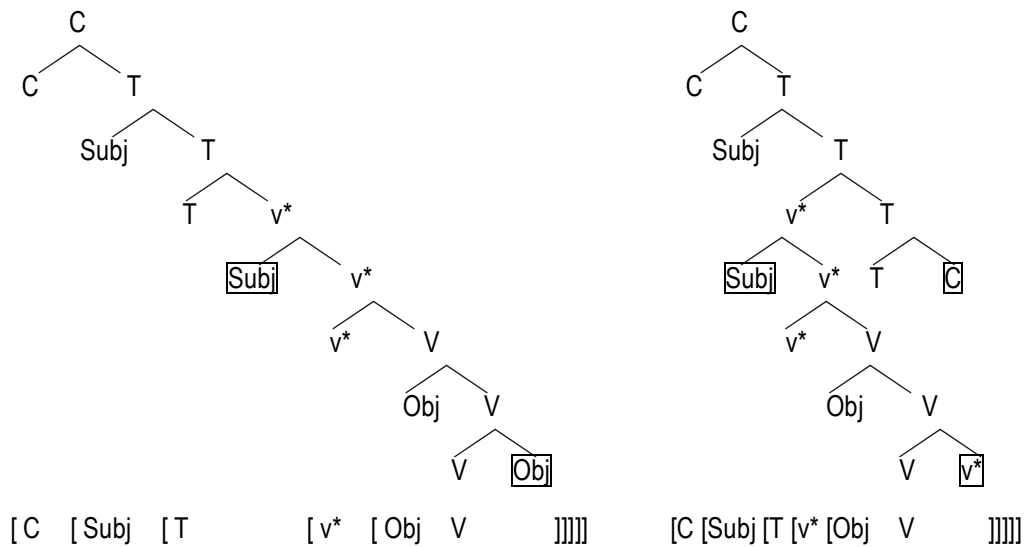
(45) The invisibility of lower copies for minimal search is supported by cases such as English wh-movement and Icelandic dative subject. In each case, a lower copy of the moved element, occupying Spec- v^* , does not interfere with the minimal search of T:

a. what do they like
 [WH [C [T [WH] [SUBJ [v^* VP]]]]] (see Chomsky 2007, 2008)

b. Jóni líkuðu þessir sokkar
 Jon-Dat like(plural) these socks-Nom
 'Jon likes these socks'
 [C [NP-Dat [T [NP-Dat] [v^* [V NP-Nom]]]]] (see Jónsson 1996, also cited in Bobaljik 2008)

(46) α (goal) is invisible to the minimal search of β (probe) if some occurrence of α is outside β 's search domain. (EKS 2012, Chomsky 2013)

(47) a. English CI representation with visible labels b. Japanese CI representation with visible labels

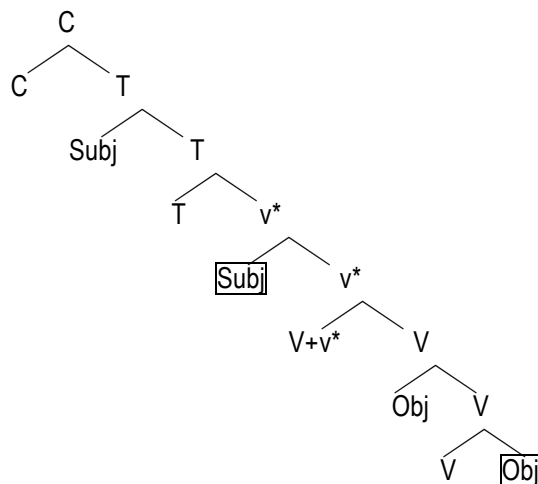


(48) If those boxed materials (= lower occurrences of moved elements) are invisible to minimal search, then the two CI representations (47a,b) show identical structural relations (taking $\{\alpha\}$ to be α , meaning: a singleton set is indistinguishable from its member).

(49) As for SM representations, unlike English, Japanese is an agglutinative language where many predicate elements count as bound morphemes, and they are formed into “morphologically tight units” under adjacency after the narrow syntax. (cf. Saito 2012, Kishimoto 2013).

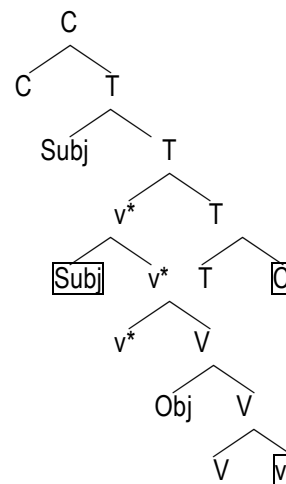
(50) There is some general algorithm that converts structural relations into linear relations in accordance with LCA (α precedes β iff α or γ that contains α asymmetrically c-commands β , Kayne 1994) and the Mirror Principle (i.e., morphological derivations reflect syntactic derivations, and vice versa, Baker 1985).

(51) a. English SM representation



C > Subj >> T >>>>>>>> v* + V >> Obj

b. Japanese SM representation



Subj >>> Obj > V + v* + T + C

(52) Suppose that phonological materials are placed in linear order through the interaction of their hierarchical relations (established in the course of a derivation) and their morpho-featural properties (specified in the lexicon). Then, arguably, the observed “head-initial vs. head-final” variation follows as a consequence of the interaction of these two independently motivated factors (where “>” means precedence).

12. SUMMARY

(53) The narrow syntax itself need not be parameterized; it can generate two distinct derivations, which yield (essentially) the same CI representations but (still) allow the SM representations to differ in a way exhibiting a “head-initial vs. head-final” variation.

(54) “Order and other arrangements are a peripheral part of language, related solely to externalization at the SM interface, where of course they are necessary.” (Chomsky 2013)

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