Innocuousness of {XP, YP} as a root clause in Japanese and English

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1. {XP, YP} and the Labeling Algorithm

- Chomsky (2013) raises the question of why the interrogative counterpart of (1) involves the movement of V rather than N as in (2) though the two heads are equally close to the clause-initial position. More generally, case (3ii) is not problematic, but merger of two phrases results in labeling ambiguity, so that something like (3iiiA) or (3iiiB) must take place.

(1) [α [$_{NP}$ Young [$_{N}$ eagles]] [$_{TP}$ [$_{T}$ are] flying]] (Chomsky 2013)
(2) a. *[Eagles [young <eagles> are flying]]?
b. [Are [young eagles <are> flying]]?
(3) Labeling algorithm in Chomsky (2013:43)
(i) LA seeks (only) visible/active features.
(ii) SO={H, XP} → H is the label.
(iii) SO={XP, YP} → (A) "Modify SO so that there is only one visible head, or
(B) X and Y are identical in a relevant respect."

- As for the labeling ambiguity in (1), Chomsky does not resort to (3iiiA,B) but the so-called feature inheritance approach described in (4), where TP without a subject DP is merged with C. Given the absence of a subject DP, C can unambiguously find the finite verb *are* and attracts it. The problem with this approach is that the subsequent merger of a subject DP in (4c) violates the No-Tampering Condition (NTC) unless some special derivation is assumed (Epstein, Kitahara and Seely 2012, and Kato et el. 2013).

(4) **Downward** Feature Sharing (Chomsky 2008, 2013, Richards 2007): Besides a clause-type feature, C has ϕ− and tense features, and they are inherited by the T it selects.
a. [$_{CP}$ [$_{C}$ Q, ϕ, T][$_{TP}$ are flying]] →
b. [$_{CP}$ [$_{C}$ are][$_{TP}$ <are> flying]] →
c. [$_{CP}$ [$_{C}$ are][$_{TP}$ [$_{NP}$ young eagles][<are> flying]]

- This study pursues the possibility of **upward** feature sharing along the line of: Extended projection of Grimshaw 1997 and Broekhuis 2013, phase extension of den Dikken 2006 and phase-sliding Gallego & Uriagereka 2006.
- Specifically, it argues that a LI internally merges with the SO it heads (i.e., head movement) as long as the merger satisfies some of its features' criterial or selectional needs. The data to support this claim include the distribution of sentential subjects in English and the properties of relative clauses and S-final particles in Japanese.

2. Declarative and Interrogative Clauses in English

2.1 Assumptions (May's *wh*-criterion, Rizzi's criteria, etc.)

(5) i. [Q] is a clause-type feature for an interrogative clause. It can be bundled with a finite tense feature or inherently appears in a C like *if*.
ii. SO labeled by [Q] and other clause-type features must merge with a TP.

(6) i. [WH] is a feature to induce *wh*-movement (i.e., *wh*-questions and *wh*-relatives); It is an unintepretable feature and NOT a clause-type feature. It can be bundled with a tense (and probably C like *whether*).
ii. SO labeled by [WH] must merge with a *wh*-phrase. ← {XP, YP} in (iii-B) of (3)

(7) i. A tense feature can be bundled with a V (i.e., inflected verb) or inherently appears in English modals and infinitive *to*.
ii. SO labeled by a tense feature must merge with a 'full verbal projection' (VP with an external argument or *v*P).

- Statements (ii) of (5)-(7) are essentially the same as various criteria, and presumably need not be stated explicitly in the sense that they are interpretive requirements at the C-I interface.

2.2 Head Movement

- SAI as **internal merger of a head** should be analyzed on a par with internal merger of **a phrase**.

(8) a. [$_{CP}$ [$_{DP}$ Which book] did the man send [$_{DP}$ <which book>] to his friend]?
b. [$_{CP}$ [$_{AdvP}$ How soon] did the man finish the work [$_{AdvP}$ <how soon>]]?
c. *[$_{CP}$ [$_{PP}$ to his friend][did the man send which book [$_{PP}$ <to his friend>]]?
d. *[$_{CP}$ [$_{DP}$ the work][did the man finish [$_{DP}$ <the work>] how soon]?

- *Wh*-phrases of various categories can internally merge with {C, TP}. [Spec, CP] of a specific category does not exist before *wh*-movement. *Wh*-movement is sensitive to the presence of a ***wh*-feature** in its target rather than the category.

(9) a. [$_{CP}$ [$_{C}$] [α [young eagles] [are flying]]]
b. ☞ [α [young eagles] [are flying]]
c. [β are [α [young eagles] [<are> flying]]]

- If SAI is a case of internally merging a finite auxiliary with the TP it heads, no landing site should be assumed before its application as in (9b) rather than (9a). When *if* externally merges with a TP, it is not necessary to assume the node C to exist before its external merger.
- What might be problematic with (9b) is that there is no probe to search for the finite V *are*. In other words, how does the finite verb move to clause-initial position despite the absence of a higher head?

- Boskovic's (2007) theory of successive-cyclic phrasal movement based on the Activation Condition of Chomsky (2000): 'I am moving.'
- Boskovic assumes no uninterpretable feature in the intermediate C. Instead, the moving *wh*-phrase has an uninterpretable feature (uK), and it makes the phrase active or visible. This uK does nothing in the intermediate landing site and remains active for movement into the matrix Spec, CP. In the final landing site, uK deletes the unintepretable [WH] feature of the C. The first step of *wh*-movement in (10b) is a **solo play by the feature uK.**

(10) a. What$_i$ do you think [$_{CP}$ t$_i$ [$_C$ that] Mary bought t$_i$]?
b. you think [$_{CP}$ what$_i$ [$_C$ that] Mary bought t$_i$]
[$_{CP}$ wh-phrase [$_C$ ~~WH~~] you think [$_{CP}$ <wh-phrase> [$_C$ that] [$_{TP}$ … <wh-phrase> …]]
iF/~~uK~~ ↑ _____ iF/uK ↑ _____| iF/uK

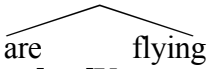
- This is exactly like my conception of head-movement in (9b), where the moving element and the landing site are the same. If *are* in (9b) has [Q], it's uninterpretable in the sense that it has not satisfied (5ii). Its subsequent merger with the TP it heads satisfies (5ii) on a par with the external merger of *if/that* with a TP does.
- Clause-type and tense features are active/not properly interpreted (or uninterpretable) until they satisfy their respective criterion in (5ii) and (7ii).

(11) [β are [α [young eagles] [<are> flying]]] ← (5ii) F = tense, V
iK iF/uK K = [Q]

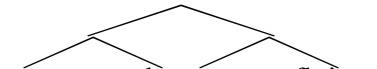
- On the other hand, no element in [NP young eagles] has a comparable feature; (2a) is an unnecessary case of internal merger just as phrasal internal merger in (8c,d) is unnecessary.

2.3 Feature-bundling Possibilities and Clausal Size

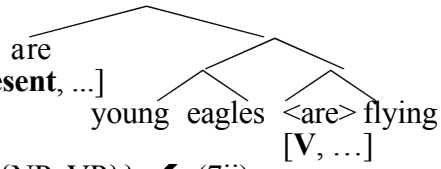
(12) *are* = [V, present, ϕ, EPP, (Q), ...] ← (7i) & (5i)

a.


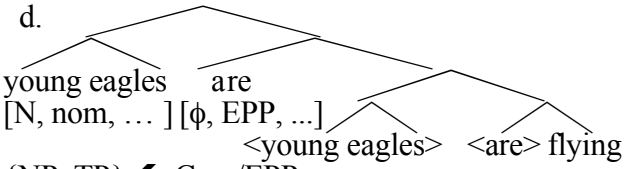
[**V**, …] [**V, present participle**, ...]
{V, VP} ← selection (c.f., *have flying)

b.


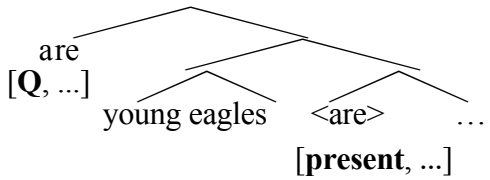
{NP, VP} ← θ-requirement

c.


[**present**, ...]
{T, {NP, VP}} ← (7ii)

d.


[N, nom, …] [ϕ, EPP, ...]
{NP, TP} ← Case/EPP

e.


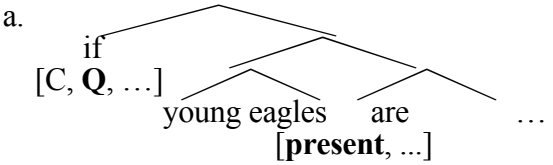
[**Q**, ...]
{C, {NP, TP}} ← (5ii)

- The feature composition of the finite verb *are* is given in (12), where the feature [Q] can but need not

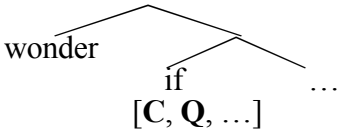
be bundled. If [Q] is not bundled, the derivation can stop at (12d); it is a root declarative clause with all the requirements of *are* satisfied. It does not matter how the whole structure is labeled; {NP, TP} is innocuous as it is.

- If *are* contains [Q], it must move in a position to have the TP as its sister as in (12e) to satisfy the criterion (5ii). The structures formed at (12a), (12c), and (12e) are all labeled by *are*; distinct features of *are* are **activated** at each stage; they can be called VP, TP, and CP, respectively.
- Movement of [N eagles] in (12c) would not make the derivation converge; tense and other features of the verb would be trapped inside VP.

(13) *if*=[C, Q, select_finite_T, …] & (12d): 'I wonder if young eagles are flying.'

a.


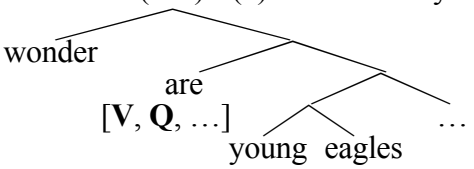
{C, {NP, TP}} ← (5ii)

b.


{V, CP} ← selection

- An interesting possibility is to merge the inverted structure (12e) with an interrogative predicate *wonder* as in (14). This is unacceptable in Standard English since (12e) is {V, TP}, with the inverted auxiliary remaining to be V and *wonder* does NOT select a verb.

(14) *wonder* & (12e): '(*)I wonder are young eagles flying.'



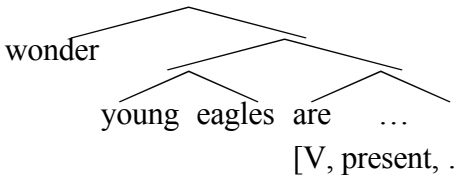
- There are various dialects in which (14) is acceptable. Speakers of such dialects allow *wonder* to s-select a complement with [Q] without imposing a categorical restriction.

(15) *a.* I remember who had been nominated/that Susan had been nominated. (McCloskey 2006)
b. I wonder who had been nominated/*that Susan had been nominated.

(16) a. *I remember was Henry a Communist.
b. I wonder was Henry a Communist.

- If (17) is unacceptable in any dialect of English, it is because the TP is not properly typed as an interrogative clause. ← (5ii)

(17) *wonder* & (12d): '*I wonder young eagles are flying.'

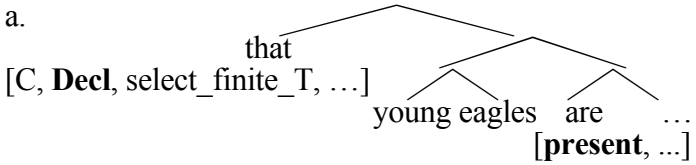


{V, TP}

- (12d) can merge with the declarative complementizer as in (18).

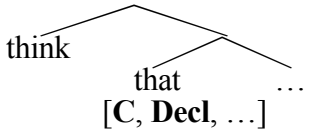
(18) that=[C, Decl(arative), select_finite_T, …] & (12d): 'I think that young eagles are flying.'

a.



{C, {NP, TP}} ← (5ii)

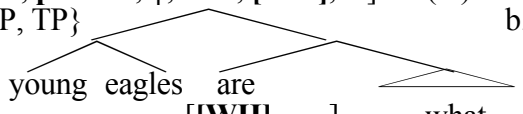
b.



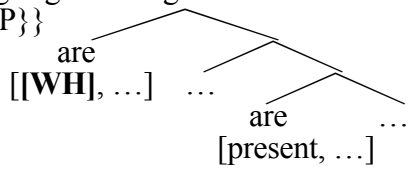
{V, CP} ← selection

(19) *are* = [V, **present**, ϕ, EPP, **[WH]**, ...] ← (6i): 'What are young eagles eating?'

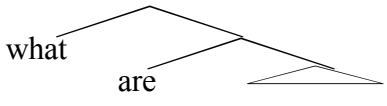
a. {NP, TP}



b. {C,{NP, TP}}



c.



{what, CP} ← (6ii)
[WH]

- The uninterpretable feature [WH] of *are* does not satisfy the *wh*-criterion (6ii) and has not been deleted in (19a). Given Boskovic's (2006) 'I'm active and thus moving', internal merger of *are* with (19a) should be allowed as in (19b) though the inverted finite auxiliary does no job like a *wh*-phrase in the intermediate position. The resultant SO can be taken as labeled by [WH]. Internal merger of *what* with (19b) as in (19c) deletes [WH] and satisfies (6ii).

(20) *are* = [V, **present**, ϕ, EPP, **[WH]**, ...]: 'Which eagles are flying?'

{{which, eagle}, TP}
[WH]

- (6ii) is satisfied without an extra application of internal merger; the Vacuous Movement Hypothesis (VMH) is adopted. If *are* in (20) had the clause-type feature [Q], it would remain in T under the VMH and (5ii) would be violated.

2.4 Distribution of Sentential Subjects in English

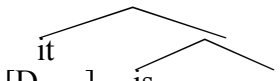
- In the present analysis, the matrix declarative clause is a TP rather than CP, which gives us a basis to distinguish a matrix clause from an embedded CP in terms of their clausal sizes.
- The complementizer *that* is deletable after *think*, for example, but needs to be retained in the sentential subject as in (21c).

(21) a. [α It] [β is important that you should go]
b. [α That you should go there] [β is important]
c. *[α you should go there] [β is important]

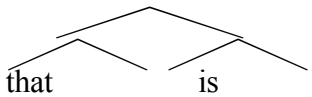
- β in (21a-c) is labeled by the finite verb *is*. It counts as a TP.

- In (21c), α and β are labeled by finite verbs *should* and *is*: {TP, TP}. It is illegitimate unless it turns into a coordinate structure (cf., (3iii-A)): 'You should go there and (it) is important.'

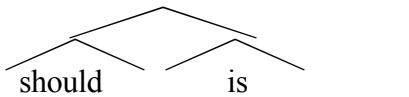
(21a)



(21b)

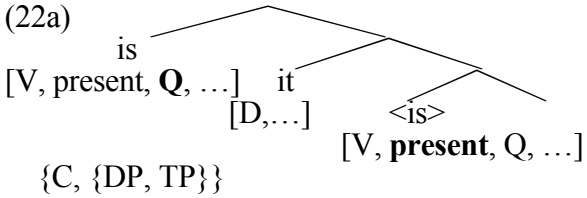


(21c)*

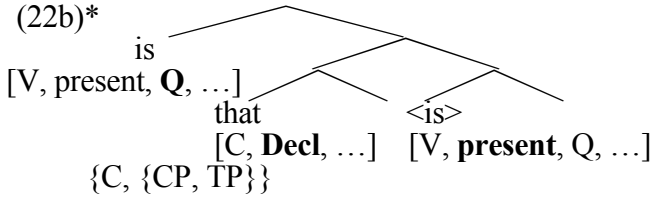


(22) a. [α Is] [it important that you should go] ← (21a)
b. *[α Is] [that you should go there important] ← (21b)

(22a)



(22b)*



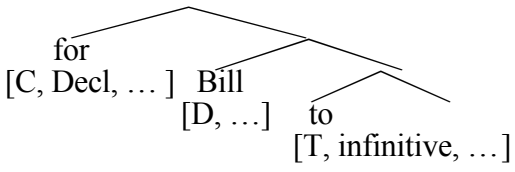
- The inverted finite verb has the feature [Q], it moves out of TP to type it as a question, satisfying the criterion (5ii); thus, the moved auxiliary (=α) counts as C. (22b) can be regarded as violating some kind of **anti-locality**; C is too close to another instance of C.
- Given {C, {CP, TP}} in (22b), the relation between C and TP should be innocuous just as in (22a). What is offending is the relation between C and CP (i.e., *is* and the sentential subject). Labeling ambiguity of {CP, TP} is instrumental in making the anti-locality work to block (22b).

- Ross/Kuno's internal S constraint, Emonds' root transformations, and Stowell's Case Resistance Principle (See also Davies & Dubinsky 2009)

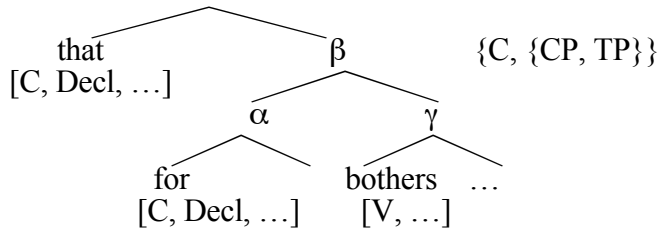
(23) a. [$_{CP}$ **that** Bill smokes cigarettes] bothers the teacher]
b. *[$_{CP}$ **That** [$_{CP}$ **that** Bill smokes cigarettes] bothers the teacher] is quite possible]
c. [$_{CP}$ **for** Bill to smoke cigarettes] bothers the teacher]
d. *[[$_{CP}$ **That** [$_{CP}$ **for** Bill to smoke cigarettes] bothers the teacher] is quite possible]
e. [[$_{CP}$ **That** it bothers the teacher [$_{CP}$ **for** Bill to smoke cigarettes]] is quite possible]
(Emonds 1970)

- (23c-e) all contain the structure α in (24a). To obtain (23d), α merges with the structure labeled by *bothers* (=γ) as in (24b). The relation between *that* and γ should be innocuous as (23e) shows. The relation between *that* and *for* violates the anti-locality mentioned in connection with (22b).

(24) a.



b. *



{C, {CP, TP}}

- The grammaticality of (23a) suggests that the matrix declarative clause is not headed by an abstract C. (23a) is {CP, TP} rather than {C, {CP, TP}}.

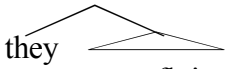
- A sentential subject is not allowed in V2 languages presumably because the matrix clause is uniformly CP (Koster 1978).

3. Absence of [WH] in Japanese

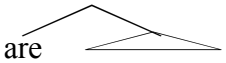
3.1 No Overt *Wh*-movement in Japanese

- Japanese has [Q], which is realized as the LI *ka*.
- *Wh*-phrases in Japanese don't move overtly. This suggests that Japanese lacks [WH] (Fukui 1986).
- Murasugi (1991) and others argue that relative clauses in Japanese are TPs. This is expected if Japanese lacks [WH]. (Hoshi 2004 and others for counterarguments.)

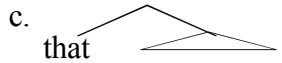
3.2 Interpretation of Clauses in English

(25) a. 

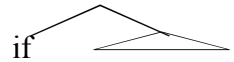
[V, present, …]

b. 

[Q, …]

c. 

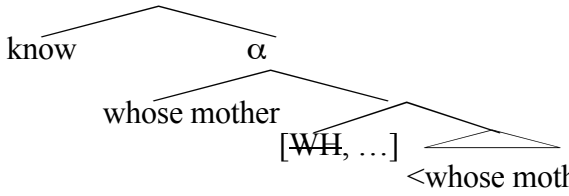
[Decl, …]

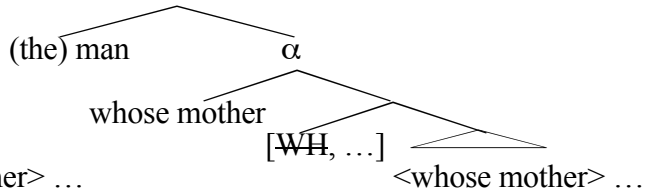
d. 

[Q, …]

- Matrix declarative clauses like (25a) are not explicitly typed as declarative, but interpreted so due to the absence of any feature to type otherwise.
- Matrix alternate questions like (25b) are typed by the inverted auxiliary with [Q].
- Embedded clauses like (25c,d) are explicitly typed by Cs with clause-type features.

(26) a. I don't know <u>whose mother died recently</u>. b. This is the man <u>whose mother died recently</u>.





- α in (26a,b) is a case of {XP, YP} in the LA (3iii-B): the *wh*-phrase and the SO labeled by the [WH] C are identical in a relevant respect. After the uninterpretable feature [WH] of the C head is deleted, α is typed as a '*wh*-clause' by the moved *wh*-phrase (Cheng 1991).

(27) A <u>*wh*-clause</u> is interpreted as relative if it merges with an N(P) as in (26b). Otherwise, it is interpreted as interrogative as in (26b) or a matrix question: 'Whose mother died recently?', Whose mother did you see?', etc.

- *Wh*-words must be present in questions as in (28) but can be absent in relative clauses as in (29).

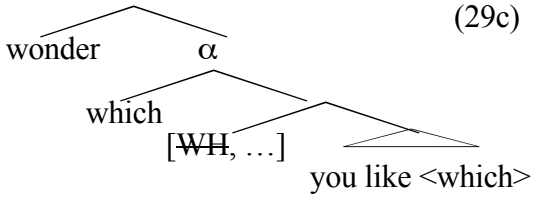
(28) a. I wonder <u>which</u> you like.
b. *I wonder you like.

(29) a. I know the book <u>which</u> you like.
b. I know the book that you like.
c. I know the book you like.

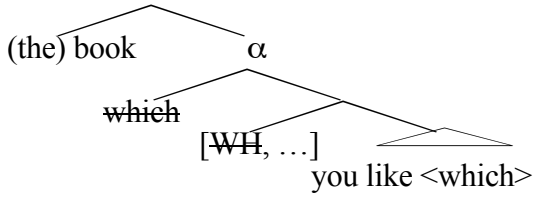
- α must be a *wh*-clause to be interpreted as interrogative, while it need not as relative.

(30) A <u>clause</u> is interpreted as relative if it merges with an N(P) ← the first part of (27)

(28a)



(29c)



3.3 Interpretation of Clauses in Japanese

- Japanese relatives are TPs. Some Japanese relatives can be analyzed as gapless. This fact falls under (30): A relative clause need not contain a gap corresponding to a *wh*-phrase, i.e., it need not be a *wh*-clause.

(31) a. [αTaro-ga kaw-ta] hon
Taro-NOM buy-PAST book 'the book Taro bought'

b. [α shuusyoku-ga taihen na buturigaku
employment-NOM difficult is physics
'physics, where finding a job is difficult' (Kuno 1973a:255)

c. [α zibun-ga kai-ta hon-ga syoten-ni deteiru] gakusha]
self-NOM write-PAST book-NOM bookstore-in is scholar
Lit. 'the scholar$_i$ who the book SELF$_i$ wrote is sold at bookstores' (Inoue 1976:224)

- *Ka* inherently has [Q]. *Ka* is obligatory in embedded questions as in (32). Clauses typed by *ka* are interpreted as interrogative.

(32) a. Watasi-wa Taro-ga koko-ni ki-ta ka siri-tai.
I-TOP Taro-NOM here-to come-PAST Q know-want
'I want to know if Taro came here.'

b. Watasi-wa Taro-ga nani-o kaw-ta ka siri-tai.
I-TOP Taro-NOM what-ACC buy-PAST Q know-want.
'I want to know what Taro bought.'

- The presence/absence of *ka* is not crucial in distinguishing declarative and interrogative clauses in the matrix context as in (33); intonation does the job.

(33) a. Taro-wa koko-ni ki-ta (no/yo/ne/sa) ↘
Taro-TOP here-to come-PAST (prt) 'Taro come here.'

b. Taro-wa koko-ni ki-ta (no/?ka) ↗
Taro-TOP here-to come-PAST (prt/Q) 'Did Taro come here?'

c. Taro-wa nani-o kaw-ta (no/?ka) ↗
Taro-TOP what-ACC buy-PAST (prt/Q) 'What did Toro buy?'

3.4 S-final Particles Other Than *Ka*

(34) a. [Taro-ga Hanako-ni kossori hon-o age-ta] (**no**) **ne/yo/sa**
Taro-NOM Hanako-DAT secretly book-ACC give-PAST
'Taro gave a book to Hanako secretly.'

b. *Taro-ga [Hanako-ni kossori age-ta] **ne/yo/sa** hon
Taro-NOM Hanako-DAT secretly give-PAST book
'the book Taro gave to Hanako'

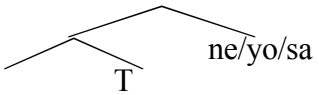
c. *[Taro-ga Hanako-ni kossori hon-o age-ta] **ne/yo/sa** kara, Yukiko-wa okotteiru.
TARO-NOM Hanako-DAT secretly book-ACC give-PAST because Yukiko-TOP angry
'Since Taro gave a book to Hanako secretly, Yukiko is angry'

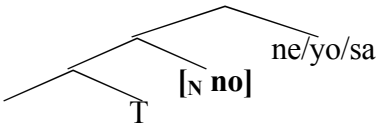
(35) Taro-ga **ne/yo/sa**, Hanako-ni **ne/yo/sa**, kossori **ne/yo/sa**, hon-o **ne/yo/sa**, ageta **ne/yo/sa**
(essentially the same meaning as (34a))

- The S-final particle *ne/yo/sa* can merge with categories other than T. They lack the defining property as Cs.

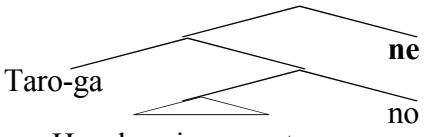
- *Ne/yo/sa* are optionally preceded by *no* in the matrix context. The matrix TP in (34a) is assumed to be nominalized by *no* just as in (36).

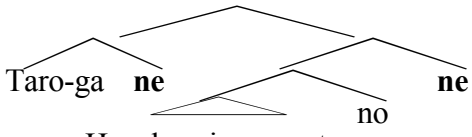
(36) Taro-wa [TP Hanako-ga ki-ta] ***(no)**-o sir-anakat-ta.
TARO-TOP Hanako-NOM come-PAST ACC know-NOT-PAST
'Taro didn't know Hanako came.'

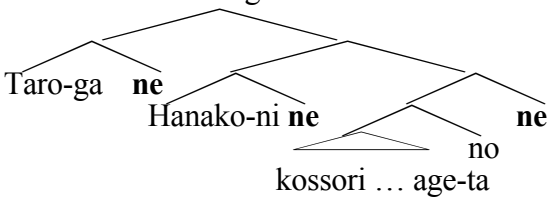
(37) a. *


b.


- A matrix clause is a typical case of {XP, YP}. (35) might suggest that *ne/yo/sa* are 'distributed' to XP and YP, recursively, presumably as the conjunction *and* is distributed in (39).

(38) a.


b.


c.


(39) John is tall (, **and**) dark, (**and),** handsome, **and** from a wealthy family.

4. Summary

- [WH] , clause-type and tense features can be bundled into relevant LIs in more than one way.
- A LI internally merges with the SO it heads as long as the merger satisfies some of its features' criterial needs; their features are shared by upper heads.
- Matrix declaratives and subject *wh* interrogatives in English as well as Japanese (relative) clauses are TPs, while non-subject *wh* interrogatives and embedded declaratives in English are CPs. The distinction makes it possible to capture the distribution of sentential subjects in English and the properties of Japanese relative clauses.
- S-final particles in Japanese, which are often assumed to be Cs, lack the defining properties as Cs. Japanese arguably lacks the category C.

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