

Locality on Selection and Labeling

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1. Introduction

Merge, which subsumes traditional phrase structure rules and transformations, is the fundamental structure-building operation in human language. In Chomsky's (1995) formulation (1), Merge is an asymmetric operation; it combines two elements into a set and projects one of the merged elements, providing the set with a label:

(1) Asymmetric Merge

$\text{Merge } (\alpha, \beta) =_{\text{def}} \{\gamma, \{\alpha, \beta\}\}$, where $\gamma \in \{\alpha, \beta\}$

(adapted from Chomsky 1995: 243)

In the asymmetric formulation (1), labeling is part of Merge, but this is a residue of phrase structure grammar. It is therefore better to separate the labeling part from Merge. Under this view, Chomsky (2004, 2008, 2013) formulates Merge as a symmetric operation as shown in (2). In (2), Merge combines two elements into a set, but labels are not created by Merge. Labels are rather determined by the two labeling algorithms in (3):

(2) Symmetric Merge

$\text{Merge } (\alpha, \beta) =_{\text{def}} \{\alpha, \beta\}$

(adapted from Chomsky 2004: 117)

(3) Labeling Algorithms (Chomsky 2008: 145)

a. In $\{H, \alpha\}$, H an LI, H is the label.

b. If α is internally merged to β , forming $\{\alpha, \beta\}$, then the label of β is the label of $\{\alpha, \beta\}$.

(3a) states that it is always a head that projects. (3b) states that in Internal Merge, it is always the target that projects. The

symmetric formulation of Merge is also proposed by Boeckx (2008), Hornstein (2009), and Fukui (2011).

Under the symmetric Merge together with the labeling algorithms approach, Merge and labeling are independent operations so that we should expect that labeling may apply without Merge. This paper deals with complementizer stacking in Japanese and Korean exemplified by (4, 5), arguing that labeling without Merge applies during a derivation of complementizer stacking:

- (4) John-wa Bill-ni [dare-ga kita ka to] tazuneta
John-Top Bill-Dat who-Nom came Q that asked
Lit. 'John asked Bill that who came.'
- (5) John-nun Mary-eykey [pro kumwuncey-lul phwul-ess
John-Top Mary-Dat that problem-Acc solved
nya ko] mulessta
Q that asked
Lit. 'John asked Mary that whether she solved that
problem.'

In (4) and (5), two complementizers are stacked at the right edge of the complement clause. In the Japanese example (4), the interrogative complementizer *ka* 'Q' and the declarative complementizer *to* 'that' are stacked. Similarly, *nya* 'Q' and *ko* 'that' are stacked in the Korean example (5). I argue that there are dual selections involved in (4) and (5), *i.e.* semantic selection between the matrix predicate *tazuneta/mulessta* 'ask' and the interrogative complementizer *ka/nya* 'Q', and syntactic selection between the matrix predicate and the declarative complementizer *to/ko* 'that'. Given sisterhood condition on selection, which states that an element can only select its sister, no previous

analysis can account for why the matrix predicate *tazuneta/mulessta* 'ask' can semantically select the interrogative complementizer *ka/nya* 'Q' skipping over *to/ko* 'that' in (4) and (5). I propose that when a labeling conflict arises, relabeling may apply as part of LF-Transfer, which accounts for the syntactic and semantic selections in a straightforward way.

The organization of this paper is as follows. Section 2 investigates complementizer stacking in Japanese and Korean, showing that complementizer stacking involves dual selections. Section 3 presents evidence against a direct quotation analysis of complementizer stacking. Section 4 first explicates labeling conflicts and cartographic structure building, and then proposes a relabeling analysis of complementizer stacking. Section 5 makes concluding remarks.

2. Complementizer Stacking in Japanese and Korean

2.1 Complementizer Stacking in Japanese

2.1.1 Semantic Selection

Predicates like *tazuneru* 'ask' semantically select an interrogative clause. They can take a clause headed by the interrogative complementizer *ka* 'Q' but not a clause headed by the declarative complementizer *to* 'that' as shown by the contrast between (6a) and (6b):

- (6) a. * John-wa Bill-ni [Mary-ga kita to] tazuneta
 John-Top Bill-Dat Mary-Nom came that asked
 Lit. 'John asked Bill that Mary came.'

- b. John-wa Bill-ni [dare-ga kita ka] tazuneta
 John-Top Bill-Dat who-Nom came Q asked
 'John asked Bill who came.'

2.1.2 Complementizer Stacking

As pointed out by Fukui (1986), Saito (2010), Hoshi (2011), and Miyagawa (2011), these two complementizers *ka* 'Q' and *to* 'that' can be stacked in the complement clause selected by *tazuneru* 'ask' as shown in (4) (repeated here as (7)):

- (7) John-wa Bill-ni [dare-ga kita ka to] tazuneta
 John-Top Bill-Dat who-Nom came Q that asked
 Lit. 'John asked Bill that who came.'

Given that selection is local in that an element can only select its sister, a question arises how the matrix predicate *tazuneru* 'ask' can semantically select the interrogative complementizer *ka* 'Q' skipping over the declarative complementizer *to* 'that' in (7).

2.1.3 Syntactic Selection

We cannot simply assume that the declarative complementizer *to* 'that' is transparent for selection in (7). As pointed out by Saito (2010), not all matrix predicates allow complementizer stacking. Although predicates like *siritagaru* 'want-to-know', *tyoosasuru* 'investigate', and *hakkensuru* 'discover' semantically select an interrogative clause as shown in (8), they cannot take complementizer stacking clauses as shown in (9) (Saito 2010: 5):

- (8) John-wa [dare-ga kita ka] siritagatteiru
 John-Top who-Nom came Q want-to-know
 Lit. 'John wants to know who came.'

(9) * John-wa [dare-ga kita ka to] siritagatteiru

John-Top who-Nom came Q that want-to-know

Lit. 'John wants to know that who came.'

The contrast between (8) and (9) shows the difference in syntactic selection between *tazuneru* 'ask' and *siritagaru* 'want-to-know'; predicates like *tazuneru* 'ask' can syntactically select a clause headed by *to* 'that' whereas predicates like *siritagaru* 'want-to-know' cannot.

2.1.4 Dual Selections

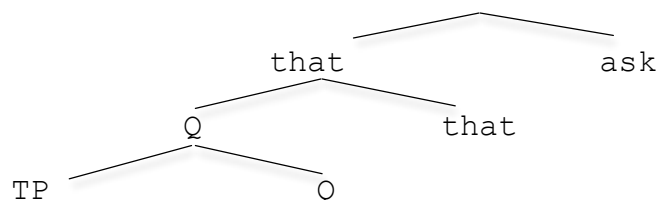
I argue that dual selections are involved in the complementizer stacking clause (7):

(10) Dual Selections

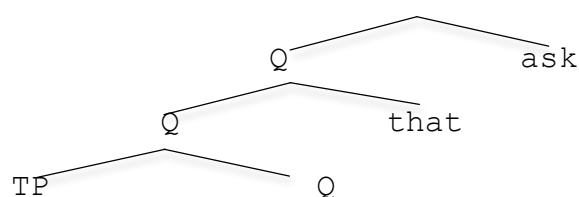
- a. Semantic selection between *tazuneru* 'ask' and the interrogative complementizer *ka* 'Q' at LF
- b. Syntactic selection between *tazuneru* 'ask' and the declarative complementizer *to* 'that' in overt syntax as a driving force of Merge

In the traditional analysis, there are two possible structures of the complementizer stacking clause (7), *i.e.* the head-complement structure (11a) and the adjunction structure (11b):

(11) a. The Head-Complement Structure



b. The Adjunction Structure



Given the sisterhood condition on selection, the dual selections cannot be captured by either the head-complement structure or the adjunction structure. The head-complement structure (11a) satisfies syntactic selection, but not semantic selection. The adjunction structure (11b), on the other hand, satisfies semantic selection, but not syntactic selection. What we need is a dual structure, where one syntactic object may have more than one structure, *i.e.* both the head-complement structure and the adjunction structure. One might argue that if we assume the head-complement structure (11a) and allow the Q-feature of the interrogative complementizer *ka* 'Q' to percolate up the *that*-phrase, then the matrix predicate *tazuneru* 'ask' can satisfy the dual selections. The *that*-clause, however, would end up having both an interrogative and non-interrogative feature, which is contradictory; this would result in an anomalous interpretation at LF. It should also be noted that under the bare phrase structure theory this paper is assuming, such partial percolation is not allowed. Hence, this paper does not adopt a partial percolation analysis.

2.2 Complementizer Stacking in Korean

2.2.1 Semantic Selection

In Korean complementizer stacking, a matrix verb semantically selects a mood marker within its complement clause as shown in (12-15):

- (12) John-nun [Mary-ka ku mwuncey-lul phwul-ess
 John-Top Mary-Nom that problem-Acc solved
 ta/*nya/*la/*ca ko/*nun] cwucangha-ess-ta
 Decl/Q/Imp/Exh that claimed
 'John claimed that Mary solved that problem.'
- (13) John-nun Mary-eykey [pro kumwuncey-lul phwul-ess
 John-Top Mary-Dat that problem-Acc solved
 *ta/nya/*la/*ca ko/*nun] mul-ess-ta
 Decl/Q/Imp/Exh that asked
 'John asked Mary whether she solved that problem.'
- (14) John-nun Mary-eykey [pro ku mwuncey-lul phwul
 John-Top Mary-Dat that problem-Acc solve
 *ta/*nya/la/*ca ko/*nun] myengryengha-ess-ta
 Decl/Q/Imp/Exh that ordered
 'John ordered Mary to solve that problem.'
- (15) John-nun Mary-eykey [pro ku mwuncey-lul phwul
 John-Top Mary-Dat that problem-Acc solve
 *ta/*nya/*la/ca ko/*nun] ceyanha-ess-ta
 Decl/Q/Imp/Exh that suggested
 'John suggested to Mary to solve that problem.'

Verbs like *cwucangha* 'claim' semantically select the declarative mood marker *ta* as shown in (12). Verbs like *mul* 'ask' semantically select the interrogative mood marker *nya* as shown in (13). Verbs like *myengryengha* 'order' semantically select the imperative mood marker *la* as shown in (14). Verbs like *ceyanha* 'suggest' semantically select the exhortative mood marker *ca* as shown in (15). Similarly, a matrix noun semantically selects a mood marker in its complement clause as shown in (16-19):

- (16) [John-i ku mwuncey-lul phwul-ess ta/*nya/*la/*ca
 John-Nom that problem-Acc solved Decl/Q/Imp/Exh
 *ko/nun] cwucang
 that claim
 'the claim that John solved that problem'
- (17) [John-i ku mwuncey-lul phwul-ess *ta/nya/*la/*ca
 John-Nom that problem-Acc solved Decl/Q/Imp/Exh
 *ko/nun] cilmwu
 that question
 'the question whether John solved that problem'
- (18) [*pro* ku mwuncey-lul phwul *ta/*nya/la/*ca *ko/nun]
 that problem-Acc solve Decl/Q/Imp/Exh that
 myenglyeng
 order
 'the order to solve that problem'
- (19) [*pro* ku mwuncey-lul phwul *ta/*nya/*la/ca
 that problem-Acc solve Decl/Q/Imp/Exh
 *ko/nun]ceyan
 that suggestion
 'the suggestion to solve that problem'

2.2.2 Syntactic Selection

A question again arises how the matrix predicate can semantically select a mood marker skipping over *ko/nun* 'that' in (12-19). We cannot claim that *ko* and *nun* are transparent for selection. Matrix verbs take *ko* but not *nun* as shown in (12-15). Matrix nouns, on the other hand, take *nun* but not *ko* as shown in (16-19). This shows that matrix verbs syntactically select *ko*

'that' whereas matrix nouns syntactically select *nun* 'that'. Hence, dual selections are also involved in Korean complementizer stacking; semantic selection between a matrix predicate and a mood marker at LF and syntactic selection between a matrix verb/noun and *ka/nun* 'that' in overt syntax as a driving force of Merge.

3. Evidence against a Direct Quotation Analysis

This section presents evidence to show that complementizer stacking clauses in Japanese and Korean are not direct quotations but complement clauses.

3.1. Polite Forms

First, Miyagawa (1987) observes that direct *wh*-questions with *ka* 'Q' in Japanese are deviant if the verb is in the plain form without the polite suffix *-masu*, as shown by the contrast between (20a) and (20b):

- (20) a. *Dare-ga kita ka (plain form)
 who-Nom came Q
 'Who came?'
- b. Dare-ga kimasita ka (polite form)
 who-Nom came Q
 'Who came?'

In the complementizer stacking clause (7) (repeated here as (21)), *ka* 'Q' is used with the plain verb form *kita* 'came'. This shows that the complementizer stacking clause (21) does not involve a quoted direct *wh*-question but a complement clauses:

(21) John-wa Bill-ni [dare-ga kita ka to] tazuneta
 John-Top Bill-Dat who-Nom came Q that asked
 Lit. John asked Bill that who came.' (plain form)

3.2. Extraction

Second, direct quotations are opaque to extraction as shown below:

(22)* What did Mary say, "I am going to buy *t*?"

(23) Japanese

?*Sono situmon-ni Mary-ga, "Dare-ga *t* tadasiku
 that question-Dat Mary-nom who-Nom correctly
 kotaeta no kasira" to tazuneta rasii
 answered Q Part(icle) that asked seem
 Lit. 'That question, it seems that Mary asked, "Who
 answered *t* correctly?"'

(24) Korean

??Ku mwuncey-lul Meyli-ka "Nwu-ka *t* cenghwakhi
 that problem-Acc Mary-Nom "who-Nom correctly
 phwulessulkka?" hako mwul-un kes kathta.
 solved that ask fact seems
 Lit. 'That question, it seems that Mary asked, "Who
 solved *t* correctly?"'

Extraction out of a complementizer stacking clause, on the other hand, is possible in both Japanese (25) and Korean (26). This also shows that complementizer stacking clauses are not direct quotations but complement clauses:

- (25) Sono situmon-ni Mary-ga [dare-ga *t* tadasiku
 that question-Dat Mary-Nom who-Nom correctly
 kotaeta ka to] tazuneta rasii
 answered Q that asked seem
 Lit. 'That question, it seems that Mary asked that who
 answered *t* correctly.'
- (26) Ku kyengchal-eykey Con-i [Meyli-ka *t* pemin-ul
 that policeman-Dat John-Nom Mary-Nom criminal-Acc
 sinkohayss nya ko] Pil-eykey mwulessta
 reported Q that Bill-Dat asked
 Lit. 'That policeman, John asked Bill that whether Mary
 reported the criminal *t*.'

3.3. Pronominal Binding

Third, direct quotations are opaque to pronominal binding as shown in (27-29):

- (27) Mary₁ asked John, "Who cheated her_{*1/2}?"
- (28) Japanese
 Mary₁-ga John-ni, "Dare-ga kanozyo_{*1/2}-o damasita
 Mary-Nom John-Dat who-Nom she-Acc cheated
 no kasira," to tazuneta rasii
 Q Part that asked seem
 'It seems that Mary asked John, "Who cheated her?"'

(29) Korean

Meyli₁-ka pil-eykey "Con-i kunye_{*1/2}-lul sokyess nya? "

Mary-Nom Bill-Dat John-Nom she-Acc cheated Q

hako mwulessta

that asked

'Mary asked Bill, "Did John cheat her?"'

In (27-29), the pronoun within the direct quotation cannot be coreferential with the matrix subject *Mary*. In (30, 31), on the other hand, the pronoun *kanozyo* 'she' within the complementizer stacking clause can be coreferential with *Mary*; complementizer stacking clauses are not opaque to pronominal binding:

(30) Mary₁-ga John-ni [dare-ga kanozyo_{1/2}-o damasita

Mary-Nom John-Dat who-Nom she-Acc cheated

ka to] tazuneta rasii

Q that asked seem

Lit. 'It seems that Mary asked John that who cheated her.'

(31) Meyli₁-ka pil-eykey [con-i kunye_{1/2}-lul sokyess nya ko]

Mary-Nom Bill-Dat John-Nom she-Acc cheated Q that

mwulessta

asked

Lit. 'Mary asked Bill that whether John cheated her.'

3.4. *De re* Readings

Fourth, descriptions in direct quotations may not be interpreted as *de re* as shown below:

(32) a. Oedipus said, "My mother is pretty." (Unambiguous)

De dicto: Oedipus knows she is his mother.

*De re: Oedipus doesn't know she is his mother.

b. Oedipus said his mother is pretty. (ambiguous)

In (32a), *my mother* in the direct quotation can only be interpreted as *de dicto* but not as *de re*. This is in contrast with (32b), where *his mother* in the complement clause can be interpreted as either *de dicto* or *de re*. Similarly, in the Japanese example (33), *sensei* 'teacher' in the direct quotation cannot be interpreted as *de re*; (33) is deviant in the given context. In the Korean example (34), *Meyli* 'Mary' in the direct quotation cannot be interpreted as *de re*, either; (34) is also deviant in the given context

(33) Context: Mary saw Jack talking with the man who was a stranger to her. She asked me who Jack was talking with. She doesn't know Jack is a teacher. In the classroom, I say to someone else:

Mary-ga, "Sensei-wa dare-to hanasiteita no
Mary-Nom teacher-Nom who-with was-talking Q
kasira," to boku-ni tazuneteita yo
Part that I-Dat asked Part
'Mary asked me, "Who was the teacher talking with? "'

(34) Context: A teacher pointed a girl and asked her to solve the problem. However, the teacher does not know the girl is Mary.

Sensayngnim-kkeyse Meyli-eykey "Meyli-ka
teacher-Dat Mary-Dat Mary-Nom
ku mwuncey-lul phwuless nya? " hako mwulessta.
that problem-Acc solved Q that asked
'A teacher asked Mary, "Did Mary solve the problem? "'

Turning to complementizer stacking clauses, (35) and (36) are acceptable in the same contexts as (33) and (34) respectively. This

indicates that *sensei* 'teacher' and *Meyli* 'Mary' in the complementizer stacking clauses can be interpreted as *de re*. Hence, complementizer stacking clauses are not direct quotations but complement clauses:

(35) In the same context as (33):

Mary-ga [sensei-ga dare-to hanasiteita kato]
 Mary-Nom teacher-Nom who-with was-talking Q that
 boku-ni tazuneteita yo
 I-Dat asked Part
 'Mary asked me that who the teacher was talking with.'

(36) In the same context as (34):

Sensayngnim-kkeyse Meyli-eykey [Meyli-ka
 teacher-Dat Mary-Dat Mary-Nom
 ku mwuncey-lul phwuless nya ko] mwulessta
 that problem-Acc solved Q that asked
 Lit. 'A teacher asked that whether Mary solved that
 problem.'

3.5. Temporal Modifiers

Fifth, temporal modifiers in direct quotations are evaluated relative to subjects whereas those in complement clauses are evaluated relative to utterers:

- (37) a. Mary said, "I will come to the party tomorrow."
 b. Mary said she would come to the party tomorrow.

In (37a), the temporal modifier *tomorrow* in the direct quotation is evaluated relative to the subject *Mary*; *tomorrow* is interpreted as the day after Mary's saying or asking. In (37b), on the other hand, *tomorrow* in the complement clause is evaluated relative to

the utter; *tomorrow* is interpreted as the day after speech act. In a similar vein, *asita* 'tomorrow' in the Japanese example (38) and *nayil* 'tomorrow' in the Korean example (39) in the direct quotations are evaluated relative to the subject *Mary*:

(38) Mary-ga John-ni, "Dare-ga asita paatii-ni kuru
 Mary-Nom John-Dat who-Nom tomorrow party-to come
 no kasira," to tazuneteita yo

Q Part that asked Part

'Mary asked John, "Who comes to the party tomorrow?"'

(39) Meyli-ka Con-eykey, "Ney-ka nayil phathi-ey ka la,"
 Mary-Nom John-Dat you-Nom tomorrow party-to go Imp
 hako myenglyenghayssta
 that ordered

'Mary ordered John, "You should go to the party tomorrow."'

Turning to complementizer stacking clauses, *asita* 'tomorrow' in the Japanese example (40) and *nayil* 'tomorrow' in the Korean example (41) are interpreted as the day after speech act. This shows that complementizer stacking clauses are not direct quotations but complement clauses:

(40) Mary-ga [dare-ga asita paatii-nikuru ka to]
 Mary-Nom who-Nom tomorrow party-to come Q that
 John-ni tazuneteita yo

John-Dat asked Part

'Mary asked John that who would come to the party the next day.'

(41) Meyli-ka Con-eykey [pro nayil phathi-ey ka la ko]
 Mary-Nom John-Dat tomorrow party-to go Imp that
 myenglyenghayssta.
 ordered
 'Mary ordered John to go to the party the next day.'

3.6. Evaluative Predicates

Sixth, evaluative predicates in direct quotations are evaluated relative to subjects whereas those in complement clauses are evaluated relative to utterers:

- (42) a. Mary said, "I love that idiot."
 b. Mary said she loves that idiot.

In (42a), where *that idiot* is within the direct quotation, it is evaluated relative to the subject *Mary*; it is Mary who thinks that he is an idiot. In (42b), on the other hand, *that idiot* is in the complement clause so that it is evaluated relative to the utterer; it is the utterer who thinks that he is an idiot. Similarly, *ano orokamono* 'that idiot' in (43) and *ku papo.casik* 'that idiot' in (44), which are within the direct quotations, are evaluated relative to the subject Mary:

- (43) Mary-wa John-ni, "Dare-ga ano orokamono-ni
 Mary-Top John-Dat who-Nom that idiot-Dat
 taikin-o watasita no kasira," to tazuneta
 a lot of money-Acc gave Q Part that asked
 'Mary asked John, "Who gave a lot of money to that idiot?"'

(44) Meyli-ka Con-eykey "ku papo.casik-eykey kekum-ul
 Mary-Nom John-Dat that idiot-Dat money-Acc
 cwuess nya" hako mwulessta
 gave Q that asked

'Mary asked John, "Did you give money to that idiot?"'

When *that idiot* is in a complementizer stacking clause, it is evaluated relative to the utter as shown in (45, 46). This shows that complementizer stacking clauses are complement clauses:

(45) Mary-wa John-ni [dare-ga ano orokamono-ni
 Mary-Top John-Dat who-Nom that idiot-Dat
 taikin-o watasitaka to] tazuneta
 a lot of money-Acc gave Q that asked
 Lit. 'Mary asked John that who gave a lot of money to that
 idiot.'

(46) Meyli-ka Con-eykey ku papo.casik-eykey kekum-ul
 Mary-Nom John-Dat that idiot-Dat money-Acc
 cwuess nya ko mwulessta
 gave Q that asked
 Lit. 'Mary asked John that whether he gave money to that
 idiot.'

3.7. Deictic Terms

Finally, deictic terms within direct quotations are evaluated relative to subjects whereas those in complement clauses are evaluated relative to utterers:

- (47) a. Mary said, "I want this picture."
- b. Mary said that she wanted this picture.

In (47a), where the deictic term *this* appears within the direct

quotation, it is evaluated relative to the subject *Mary*; *this picture* is near *Mary*. In (47b), on the other hand, *this* appears within the complement clause so that it is evaluated relative to the utter; *this picture* is near the utter. In a similar vein, when a deictic term appears in a direct quotation in Japanese and Korean, it is evaluated relative to the subject, as shown in (48, 49):

(48) Mary-wa John-ni, "Dare-ga kono e-o kaita
 Mary-Top John-Dat who-Nom this picture-Acc drew
 no kasira," to tazuneta

Q Part that asked

'Mary asked John, "Who draw this picture?"'

(49) Meyli-ka Con-eykey "i kulim-ul Saym-eykey
 Mary-Nom John-Dat this picture-Acc Sam-Dat
 cwuess nya" hako mwulessta

gave Q that asked

'Mary asked John, "Did you give this picture to Sam?"'

When the deictic term *kono e* 'this picture' or *i kulim* 'this picture' appears in a complementizer stacking clause, it is evaluated relative to the utter as shown in (50, 51). Hence, complementizer stacking clauses are complement clauses:

(50) Mary-wa John-ni [dare-ga kono e-o kaita
 Mary-Top John-Dat who-Nom this picture-Acc draw
 ka to] tazuneta

Q that asked

Lit. 'Mary asked John that who draw this picture.'

(51) Meyli-ka Con-eykey i kulim-ul Saym-eykey
 Mary-Nom John-Dat this picture-Acc Sam-Dat
 cwuess nya ko mwulessta
 gave Q that asked
 Lit. 'Mary asked John that whether he gave this picture
 to Sam.'

4. A Proposal

4.1. Labeling Conflicts and Cartographic Structure Building

Before turning to an analysis of the dual selections in complementizer stacking, I will explicate labeling conflicts and cartographic structure building. The notion of labeling conflict was proposed by Donati (2006), Chomsky (2008), and Cecchetto and Donati (2010; 2011). They argue that a labeling conflict arises in cases like (52). In (52), α is a lexical item, *i.e.* a head, and β is not a head, and α undergoes Internal Merge with β :

(52) [α [β α]]

The labeling algorithms (3) (repeated here as (53)) make conflicting predictions:

(53) Labeling Algorithms (Chomsky 2008: 145)

- a. In $\{H, \alpha\}$, H an LI, H is the label.
- b. If α is internally merged to β , forming $\{\alpha, \beta\}$, then the label of β is the label of $\{\alpha, \beta\}$.

According to (53a), α , which is a head, should become the label. According to (53b), however, β , which is the target of Internal Merge, should become the label. They claim that a labeling conflict makes the two different labels available, which creates an ambiguous structure.

Based on their labeling conflict idea, I argue that a labeling conflict creates not only an ambiguous structure but also a dual structure in the sense that one syntactic object has different structures in overt syntax and LF. Such a dual structure is created by relabeling as part of LF-Transfer. It is reasonable to assume that LF-Transfer can trigger relabeling, where the asymmetric relation between merged elements changes. It should be noted that PF-Transfer alters the (a)symmetric relation between merged elements, converting an unordered set $\{X, Y\}$ into an ordered pair $\langle X, Y \rangle$ or $\langle Y, X \rangle$. Hence, I claim that Transfer can alter the (a)symmetric relation between merged elements due to linearization in PF-Transfer and relabeling in LF-Transfer.

This paper claims with Shlonsky (2006) that cartographic structure in the sense of Rizzi (1997) is created by self-attachment of C as stated in (54):

- (54) a. C is associated with an ordered set of lexical items (or bundles of features if C is null) $\langle C_1, \dots C_n \rangle$. These precompiled lexical items (or bundles of features) correspond to Rizzi's (1997) Fin, Foc, Top, etc.
- b. The computational system activates these lexical items (or bundles of features) one by one respecting the order of compilation; (i) Initial merger of C activates the leftmost lexical item (or bundle of features) in the set, (ii) Each time C is internally merged to itself, *i.e.*, self-attachment of C takes place, the leftmost inactive lexical item (or bundle of features) in the set is activated.

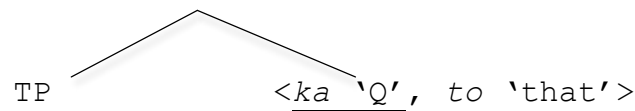
- c. Once C_m , $m > 1$, is activated, C_{m-1} is no longer visible to the computational system.

4.2 A Relabeling Analysis of Complementizer Stacking

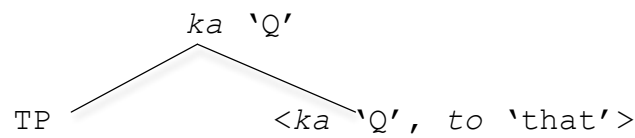
Let us look at how relabeling derives the dual structure property of complementizer stacking, thereby accounting for its dual selections. Let us consider the Japanese example (7) (repeated here as (55)) as an example. The derivation of (55) proceeds as represented in (56):

- (55) John-wa Bill-ni [dare-ga kita ka to] tazuneta
 John-Top Bill-Dat who-Nom came Q that asked
 Lit. 'John asked Bill that who came.'

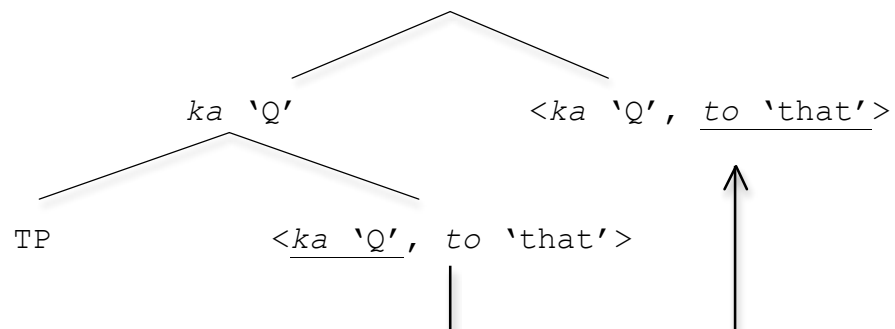
(56) a.



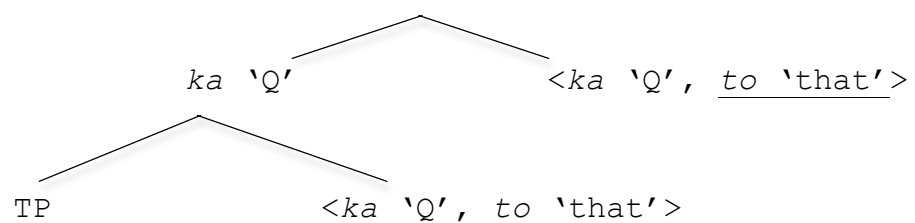
b.



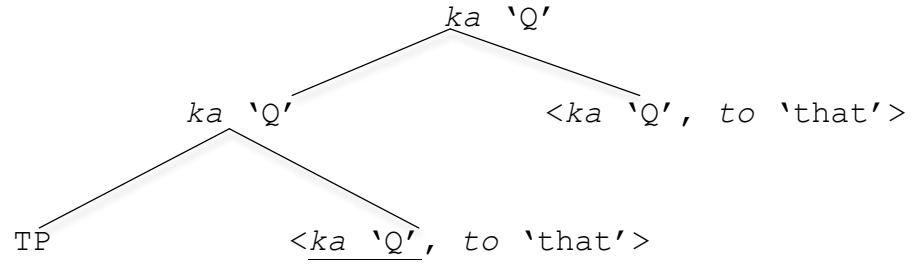
c. Self-Attachment of C



d. Labeling in Overt Syntax
 to 'that'



e. Relabeling as Part of LF-Transfer



C consists of the ordered set $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$. External Merge applies to TP and C $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$. By this initial merger of C $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$, the leftmost lexical item in the set, *i.e.* the interrogative complementizer $ka \text{ 'Q'}$, becomes activated. This merger yields $\{TP, \langle ka \text{ 'Q'}, to \text{ 'that'} \rangle\}$ as represented in (56a). In (56a) and relevant representations to follow, the activated lexical item (or bundle of features) is underlined. The labeling algorithms in (53) require that $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$, which is a lexical item, should become the label of $\{TP, \langle ka \text{ 'Q'}, to \text{ 'that'} \rangle\}$ in accordance with the labeling algorithm (53a); (56b) is labeled $ka \text{ 'Q'}$ ($= \langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$). Next, we apply self-attachment of C, *i.e.* attachment (movement) of $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$ to itself. In other words, $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$ is internally merged to the label $ka \text{ 'Q'}$ ($= \langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$). When $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$ is internally merged to itself, the leftmost inactive lexical item in the set $to \text{ 'that'}$ becomes activated and $ka \text{ 'Q'}$, which was activated in the previous Merge, becomes no longer visible to the computational system; this results in $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$. Hence, self-attachment of C yields $\{ka \text{ 'Q'}$ ($= \langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$), $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle\}$, as represented in (56c). A labeling conflict arises in (56c); the labeling algorithm (53a) requires that $\langle ka \text{ 'Q'}, to \text{ 'that'} \rangle$, which

is a lexical item, should become the label, whereas the labeling algorithm (53b) requires that the label *ka 'Q'* (= <*ka 'Q'*, *to 'that'*>), which is the target of Internal Merge, should become the label. I argue that this labeling conflict creates a dual structure. We have two labeling options; either *to 'that'* (= <*ka 'Q'*, *to 'that'*>) or *ka 'Q'* (= <*ka 'Q'*, *to 'that'*>) becomes the label. We take the former option here; *to 'that'* becomes the label in accordance with (53a) in overt syntax, as represented in (56d). This labeling drives Merge with the matrix predicate *tazuneru 'ask'*, satisfying the syntactic selection of *tazuneru 'ask'*. When we come to the stage where LF-Transfer applies, relabeling applies as part of LF-Transfer; *ka 'Q'* (= <*ka 'Q'*, *to 'that'*>) becomes the label in accordance with (53b) as represented in (56e). This label satisfies the semantic selection of the matrix predicate *tazuneru 'ask'* at LF. Hence, relabeling due to the labeling conflict creates a dual structure where the complementizer stacking clause (55) is labeled *to 'that'* in overt syntax but *ka 'Q'* at LF; this accounts for the puzzling dual selections. The dual selections in Korean complementizer stacking can be accounted for in the same way.

Before closing this section, let us consider predicates like *omou 'think'*, *yuu 'say'*, and *sakebu 'scream'*. These predicates syntactically and semantically select a complement clause headed by the declarative complementizer *to 'that'* as shown in (57):

- (57) a. John-wa [Mary-ga kita to] omotta/itta/sakenda
 John-Top Mary-Nom came that thought/said/screamed
 'John thought/said/screamed that Mary came.'

- b. *John-wa [dare-ga kita ka] omotta/itta/sakenda
 John-Top who-Nom came Q thought/said/screamed
 Lit. 'John thought/said/screamed who came.'

As pointed out by Saito (2010), these predicates can also take a complementizer stacking clause as shown in (58):

- (58) John-wa [dare-ga kita ka to] omotta/itta/sakenda
 John-Top who-Nom came Q that thought/said/screamed
 Lit. 'John thought/said/screamed that who came.'

Under our analysis, the derivation of (58) proceeds almost in the same way as derivation (55). The only difference between these two derivations is that relabeling due to a labeling conflict, which is optional, does not apply in the derivation of (58). The declarative complementizer to 'that', which is the label in overt syntax, remains as the label at LF; this satisfies the syntactic and semantic selections of these predicates.

5. Conclusion

This paper has investigated complementizer stacking in Japanese and Korean. It was shown that complementizer stacking involves dual selections, which cannot be accounted for by either the traditional head-complement or adjunction structure. I have then proposed relabeling as part of LF-Transfer due to a labeling conflict, showing that it accounts for the dual selections. The proposed analysis presents further evidence for the symmetric Merge together with labeling algorithms approach.

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