

A Note on Quantifier Raising in Subjunctive Clauses

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<https://doi.org/10.15017/7363539>

出版情報：九大英文学．67，pp.35-54，2025-03-31．九州大学大学院英語学・英文学研究会
バージョン：
権利関係：



A Note on Quantifier Raising in Subjunctive Clauses*

Yuka Usui

1. Introduction

Quantifier Raising (QR) involves the (covert) movement of a quantifier to a position higher than another quantifier, resulting in an inverse scope interpretation. The example shown in (1) is ambiguous: one reading suggests that there is a specific person who loves every individual, while the other reading implies that for each person, there is someone who loves them. The latter interpretation arises when the universal quantifier *everyone* undergoes covert movement to a position higher than the existential quantifier *someone*, as illustrated in (2).

(1) Someone loves everyone. (some > every, every > some)

(2) [~~everyone~~ [someone [love everyone]]]



Notably, this type of movement is applicable only clause-internally. The examples in (3) show the clause-boundedness of QR: neither the embedded subject quantifier nor object quantifier can move across finite CP, whose head is the complementizer *that*, to take scope over the matrix subject *someone*.

(3) a.# Someone said that every man is married to Sue.

(#some > every, *every > some)

b.# Someone said that Sue is married to every man.

(#some > every, *every > some) (Fox (2000: 62))

Interestingly, however, not all *that*-clauses block QR across them. As the example in (4) illustrates, subjunctive clauses, which are selected by matrix verbs such as *demand*, *insist*, *request*, and *require*, permit cross-clausal QR of an item embedded in

them, resulting in an interpretation in which the embedded object quantifier takes wider scope over the matrix element.

- (4) She has requested that they read only *Aspects*.

(request > only, only > request) (Kayne (1998: 129))

This phenomenon appears to be an exception to the generalization that QR cannot be applied across finite clauses (cf. (3)). Notably, subjunctive clauses are introduced by the complementizer *that* in the same way as finite clauses. Furthermore, the nominative case assigned to the embedded subject suggests agreement between the subject and finite T. As long as the clause in question is analyzed as a kind of finite clause, this observation about QR requires an explanation.¹

This paper aims to resolve the puzzle of QR's applicability across subjunctive clauses. Building on Otsuka's (2017) reverse pair-Merge analysis, I propose that subjunctive clauses are derived via external pair-Merge of C to T, rendering T syntactically invisible.

The remainder of this paper is organized as follows. Section 2 reviews Kanno and Nomura (2012), a previous study on subjunctive clauses, and discusses its potential issues. Section 3 outlines the theoretical background, introducing Chomsky's (2013, 2015) labeling theory and Otsuka's (2017) reverse pair-Merge approach. In section 4, I present my proposal explaining the transparency of subjunctive clauses. The analysis of QR across subjunctive clauses is presented in section 5. Section 6 concludes the discussion.

2. Previous Research

In this section, I review Kanno and Nomura (2012), who offer an account of QR's applicability in subjunctive clauses. While I adopt their core premise, I argue that their analysis is not entirely satisfactory.

Kanno and Nomura (2012) first point out that subjunctive clauses share properties with nonfinite clauses with respect to the availability of QR across clause boundaries. As noted in the introduction and shown in (3), when the embedded clause is finite, the embedded subject quantifier cannot move to a position higher than another quantifier

in the matrix clause. In contrast, as illustrated in (5), this clause-boundedness effect disappears when the embedded clause is infinitival. The transparency observed in subjunctive clauses as in (4), repeated here as (6), is analogous to the behavior of infinitival clauses.

- (5) Someone wants to marry everyone. (some > every, every > some)
(Matsumoto (2009: 118))

- (6) She has requested that they read only *Aspects*.
(request > only, only > request) (= (4))

In account for this pattern, Kanno and Nomura (2012) argue that finite clauses constitute syntactic phases, while nonfinite clauses and subjunctive clauses do not. Phase theory, developed in Chomsky (2000) and subsequent studies, proposes that CP and v^*P constitute phases. Chomsky (2000, 2008) argues that syntactic structures are created phase by phase, and that when a phase is completed, the operation Transfer sends the complement of the phase head to the sensorimotor (SM) and Conceptual-Intentional (CI) interfaces. The transferred structures are inaccessible to further syntactic operations due to the Phase Impenetrability Condition (PIC).

Kanno and Nomura (2012) adopt the definition of a phasal C proposed in Kanno (2008), illustrated in (7).

- (7) The head C constitutes a phase if and only if it has both of an Agree and a Tense feature.
(Kanno and Nomura (2012: 77))

According to Kanno (2008), finite CP functions as a phase because it possesses both an Agree feature and a Tense feature. In contrast, control CPs and ECM/raising CPs do not, since the former lacks both features, while the latter has an Agree feature but not a Tense feature.² Kanno and Nomura argue that subjunctive clauses, like nonfinite CPs, do not constitute phases because they lack a Tense feature, even though they have an Agree feature. As for the presence of an Agree feature, Kanno and Nomura cite the example in (8), which shows that subjunctive clauses must have a nominative subject. They argue that since nominative case is standardly assumed to be assigned as a reflex of ϕ -feature agreement between the subject and T (Chomsky (2000)), this suggests the presence of an Agree feature on subjunctive C (which is subsequently

inherited by T).

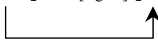
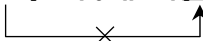
- (8) I demand that they/*them/*their leave for Hawaii tomorrow.

(Radford (1988: 292))

Crucially, Kanno and Nomura argue that subjunctive CPs lack a Tense feature, unlike finite CPs. They argue that while subjunctive complements appear to denote future tense, this is due to the lexical properties of the matrix verb, which imposes a future interpretation on the embedded event. Kanno and Nomura further note that the subjunctive example in (9) shows that the embedded clause cannot determine when the relevant event occurs. Instead, the event time expressed by the embedded subjunctive clause is dependent on that of the matrix clause (see Kanno (2015) for a detailed discussion of tense of subjunctive clauses). This argumentation leads Kanno and Nomura to conclude that subjunctive clauses do not have a Tense feature.

- (9) I request that she go alone. (Quirk et al. (1985: 1180))

Kanno and Nomura (2012) discuss the transparency of these clauses as follows. When an embedded CP does not constitute a phase, as illustrated in (10a), its complement, TP, does not undergo Transfer. This allows the higher phase head v^* to access elements within the embedded clauses. In contrast, as shown in (10b), embedded elements in finite clauses are inaccessible. This is because the C head has both an Agree and a Tense feature, making it phasal, which triggers Transfer (marked with shade) at the relevant phase level. As a result, elements within non-phases, such as nonfinite and subjunctive CPs, can undergo otherwise blocked movement across clause boundaries.

- (10) a. ... [v^*P v^* [CP $C_{[Agree]}$ [TP T [vP v ...]]]]

 b. ... [v^*P v^* [CP $C_{[Agree][Tense]}$ [TP T [vP v ...]]]]


In this paper, I adopt Kanno and Nomura's (2012) core premise that the transparency observed in subjunctive clauses can be explained by phase theory. Specifically, movement across subjunctive clauses is made possible by a property of the subjunctive C, which, unlike finite C, leaves embedded elements accessible.

However, it seems insufficient to simply assume that subjunctive C is not a phase head. In what follows, I propose that a different approach to subjunctive clauses is needed, suggesting the possibility that subjunctive C may actually function as a phase head.

The first challenge to Kanno and Nomura's (2012) assumption arises from the idea that the lack of a Tense feature does not necessarily mean that C is not a phase head. Recall that Kanno (2008) and Kanno and Nomura (2012) claim that control CPs and ECM/Raising CPs do not constitute phases because they lack a Tense feature. As the following paradigm in (11) suggests, however, there are cases which nonfinite CPs block movement across them.

- (11) a. * Max said [that he was going to return t_i to the library] yesterday, [each
of the books that he checked out last week]_i. (Sabbagh (2007: 350))
b. I have wanted [to know t_i] for many years [exactly what happened to
Rosa Luxemburg]_i. (Postal (1974: 92, fn. 8))
c. * I have wanted [Bob to know t_i] for many years [exactly what happened
to Rosa Luxemburg]_i. (Nakajima (1984: 141))

Heavy NP Shift, often analyzed as involving rightward movement of a phrase (Nishihara (2005), Overfelt (2024)), cannot be applied across finite clause boundaries, as shown in (11a). This effect is not observed in (11b), where the embedded clause is nonfinite and its subject has no phonetic form. Significantly, as illustrated in (11c), movement of a heavy NP is blocked when the embedded subject is overtly realized. As long as *want*-infinitives with a lexical subject lack a Tense feature in the same way as control CPs and ECM/Raising CPs, and do not constitute phases (as suggested by the absence of tense morphology; see note 2), it remains unclear what prohibits movement across clauses in examples such as (11c). It seems more plausible to consider such cases as (11c), as involving phases.

In addition, under Kanno and Nomura's (2012) proposal, it is unclear how and when agreement between the embedded subject and the subjunctive C occurs. They assume that subjunctive C has an Agree feature and enters an agreement relationship with the subject, assigning nominative case as a reflex of agreement. However, since Kanno and Nomura argue that subjunctive C does not function as a phase head,

agreement should not occur at the embedded CP stage. It might be possible that the agreement occurs at the next phase level, namely at the matrix v^*P phase stage. Nevertheless, it remains uncertain whether agreement is possible at some later phase level after the ϕ -bearing head is introduced, as long as agreement is generally considered a phase-level operation.

In this section, I reviewed Kanno and Nomura (2012), who argue that subjunctive clauses do not constitute phases due to the absence of a Tense feature. Although I agree with Kanno and Nomura's claim that a phase is an important factor that determines whether movement across clauses is possible, I aim to offer an alternative account to address the issues with Kanno and Nomura (2012).

3. Theoretical Background

Before presenting the main proposal, two theoretical assumptions must be clarified. This section discusses the labeling algorithm proposed by Chomsky (2013, 2015) and the pair-Merge theory of heads developed by Otsuka (2017).

3.1. Labeling Theory

In generative literature, it has long been assumed that a label is assigned to the structure created by Merge. Chomsky (2013, 2015) notes that since the operation Merge is applied symmetrically, labels must be determined through some algorithm. Chomsky proposes the following system, known as the Labeling Algorithm (LA) (here, H is a head and XP/YP is a phrase).

(12) Labeling Algorithm

- (i) If a set $\{H, XP\}$ is formed, H is the label.
- (ii) If a set $\{XP, YP\}$ is formed, the LA cannot determine a label unless
 - a. either XP or YP undergoes movement, or
 - b. they share a prominent feature.

Chomsky argues that when a head H and a phrase XP are merged, the label is unambiguously determined as H . However, when two phrases are merged, the label

cannot be determined immediately because, in this case, two heads X and Y are equidistantly embedded. There are two ways to resolve this issue. One solution is to move one of the phrases higher so that the head of the remaining phrase serves as a label. The other solution is to label the structure with the prominent feature shared by the phrases.

More recently, Chomsky (2020), building on labeling theory, claims that phase-level operations proceed as follows. At the v^*P phase stage, the internal argument (IA) is internally merged into Spec-R(oot), as shown in (13a). Agreement occurs between the phase head v^* with unvalued features (represented as $[u\phi]$) and IA, after which v^* transmits the valued features (represented as $[v\phi]$) to R, and labeling is applied in (13b). Chomsky (2015) assumes that T in languages such as English and R cannot serve as labels unless they are strengthened by agreement. Thanks to β being labeled as $\langle\phi, \phi\rangle$ by agreement, R can provide a label for α . R then undergoes pair-Merge with v^* , the categorizer, in (13c). As a result of v^* being invisible, the phasehood is activated on the copy of R and its complement is transferred.

- (13) a. $\{\delta \text{ EA } \{\gamma \text{ } v^*_{[u\phi]} \{\beta \text{ IA}_{[\phi]} \{\alpha \text{ R } \text{IA}\}\}\}\}$
 b. $\{\delta \text{ EA } \{\gamma \text{ } v^* \{\beta \text{ IA}_{[\phi]} \{\alpha \text{ R}_{[v\phi]} \text{IA}\}\}\}\}$ ($\alpha=R, \beta=\langle\phi, \phi\rangle$)
 c. $\{\delta \text{ EA } \{\gamma \text{ } \langle R_{[v\phi]}, v^* \rangle \{\beta \text{ IA}_{[\phi]} \{\alpha \text{ R } \text{IA}\}\}\}\}$

Turning to the CP phase, the external argument (EA) is internally merged to Spec-T, after which the phase head C is introduced and enters into an agreement relation with EA, as shown in (14a). T inherits the valued features from C and labeling occurs in (14b). The agreement between EA and T makes T strong enough to serve as a label provider, with the labels for γ and δ are determined as T and $\langle\phi, \phi\rangle$, respectively. The Transfer domain is the complement of C, as shown in (14c).

- (14) a. $\{\epsilon \text{ C}_{[u\phi]} \{\delta \text{ EA}_{[\phi]} \{\gamma \text{ T } \{\beta \text{ EA } \{\alpha \text{ } \langle R, v^* \rangle \dots \}\}\}\}\}$
 b. $\{\epsilon \text{ C } \{\delta \text{ EA}_{[\phi]} \{\gamma \text{ T}_{[v\phi]} \{\beta \text{ EA } \{\alpha \text{ } \langle R, v^* \rangle \dots \}\}\}\}\}$
 ($\alpha=\beta=R-v^*, \gamma=T, \delta=\langle\phi, \phi\rangle, \epsilon=C$)
 c. $\{\epsilon \text{ C } \{\delta \text{ EA}_{[\phi]} \{\gamma \text{ T}_{[v\phi]} \{\beta \text{ EA } \{\alpha \text{ } \langle R, v^* \rangle \dots \}\}\}\}\}$

3.2. External Pair-Merge

Under the Free Merge hypothesis, which posits that Merge comes for free (Chomsky (2013, 2015)), previous literature has explored various possibilities for how Merge is applied. One of the most influential studies on this issue is Epstein et al. (2016), who propose the external pair-Merge of R to v^* . They argue that bridge verbs, which take CP complements, are derived via external pair-Merge of R to v^* occurring before derivation, as shown in (15). Thanks to pair-Merge, unvalued features on v^* are invisible in syntax from the outset. Epstein et al. (2016) claim that this successfully accounts for the fact that there is no agreement between the matrix verb and its CP complement, which does not bear ϕ -features. Assuming with Chomsky (2015) that the amalgam formed with pair-Merge can serve as a label, they suggest that there is no labeling problem.

- (15) a. I think that John is smart.
 b. $\langle R, v^*_{[\text{u}\phi]} \rangle$
 c. $\{\gamma \text{ EA } \{\beta \langle R, v^*_{[\text{u}\phi]} \rangle \{ \alpha C \dots \} \} \}$

Building on Epstein et al. (2016), Otsuka (2017) explores the possibility of applying pair-Merge in the opposite direction: v^* undergoing pair-Merge to R, as shown in (16). (Otsuka also discusses external pair-Merge of C to T.)

- (16) $\langle v^*_{[\text{u}\phi]}, R \rangle$

Otsuka (2017) argues that in this “reverse” version of pair-Merge, phasehood is partially cancelled, since in this case, unlike pair-Merge of R to v^* , what becomes invisible is R, not v^* . Agreement and labeling are thus possible. As for the Transfer domain, Otsuka (2017: 141, fn. 4) suggests that, in this case, the complement of the phase head v^* should be R, which is first merged with v^* . I follow this assumption about Transfer.

Otsuka assumes that Case valuation does not occur in reverse pair-Merge, following assumption made in Epstein et al. (2012) that Case checking requires both inherited unvalued ϕ -features and either T’s tense property or R’s transitivity property. Since the amalgamated head $\langle v^*, R \rangle$ is created before being introduced to the clausal spine, Feature Inheritance from v^* to R does not occur, making it impossible for a

nominal to be assigned accusative case based on the transitivity property of R. However, departing from Otsuka’s original assumption, I posit that Case valuation is possible as long as the agreement occurs between a nominal and the head with unvalued φ -features.³ This is in line with Chomsky’s (2020) idea that an external argument first agrees with C before T inherits the valued feature (see section 3.1).

4. A Proposal

Building on the theoretical background outlined in the previous section, I propose that subjunctive clauses are derived through the external pair-Merge of C to T. As reviewed in section 3.2, Otsuka (2017) discusses the external pair-Merge of a phase head (C/ ν^*) to a non-phase head (T/R). In this paper, I argue that properties of subjunctive CPs are derived through this type of pair-Merge.

Let us now consider how the proposed approach to subjunctive clauses works. The configurations in (17b–d) illustrate the embedded CP stage. The amalgam $\langle C, T \rangle$, formed by the external pair-Merge of C to T, is introduced. The key point here is that, since this is an instance of “reverse” pair-Merge, C, which bears unvalued features, remains visible and is able to enter into an agreement relation. In (17b), agreement occurs between EA and C, and nominative case is assigned to EA as a result of this φ -feature agreement. EA is merged into the specifier position of the $\langle C, T \rangle$ amalgam to avoid an XP-YP situation for the node β , as shown in (17c). As a result, the label for δ is determined as $\langle \varphi, \varphi \rangle$. Regarding the Transfer domain, I assume with Otsuka (2017) that only T, the complement of C, is transferred. As illustrated in (17d), the $\langle C, T \rangle$ amalgam undergoes internal Merge to the top node so as to satisfy the selectional requirement (see Gallego (2014: 53) for discussion on the necessity of internal Merge of C). This amalgam is externalized as *that*.

- (17) a. She has requested that they read only *Aspects*.

(request > only, only > request) (= (4))

- b. $\{\gamma \langle C_{[\text{u}\varphi]}, T \rangle \{\beta \text{ EA } \{\alpha \langle R, \nu^* \rangle \dots \}\}\}$
c. $\{\delta \text{ EA}_{[\varphi]} \{\gamma \langle C_{[\text{v}\varphi]}, T \rangle \{\beta \text{ EA } \{\alpha \langle R, \nu^* \rangle \dots \}\}\}\}$

($\alpha = \beta = R - \nu^*$, $\gamma = C - T$, $\delta = \langle \varphi, \varphi \rangle$)

$$d. \{_{\varepsilon} \langle C_{[v\varphi]}, T \rangle \{_{\delta} EA_{[\varphi]} \{_{\gamma} \langle C, T \rangle \{_{\beta} EA \{_{\alpha} \langle R, v^* \rangle \dots \} \} \} \} \} \quad (\varepsilon = C-T)$$

In section 2, I identified two problems with Kanno and Nomura’s (2012) approach to subjunctive CPs. The first issue is that the absence of either an Agree or a Tense feature does not necessarily mean that the relevant CP is a non-phase. In the present proposal, the transparency of a clause depends on how a “phasal” C head is introduced into the derivation. When a finite C and T enter the derivation separately, the complement of the C head undergoes Transfer, and further syntactic operations are prohibited (indicative clauses). In contrast, the transparency effect arises when the two heads are introduced via external pair-Merge (subjunctive clauses). Intriguingly, Sugimoto (2021) claims that nonfinite CPs are derived through the external pair-Merge of T to C. In this case, the C head becomes invisible and this phase cancellation induces the transparency of nonfinite CPs (cf. (5)). The present approach offers another strategy utilizing external pair-Merge to account for the lack of the clause-boundedness effect.

The second issue I raised in section 2 is the lack of clarity when agreement, as a phase-level operation, occurs between subjunctive C and the embedded subject, assuming that subjunctive CPs do not constitute a phase. This issue does not occur under the current approach, however, since the amalgamated head $\langle C, T \rangle$, which I posit as responsible for introducing subjunctive clauses, initiates phase-level operations in the same way as the phasal head C. The transparency observed in subjunctive CPs does not stem from the lack of phasehood, but from the Transfer domain of the “phase head” C.

5. Analysis

Having proposed the structure of subjunctive CPs, let us turn to the derivation of QR in subjunctive clauses. I assume with Otsuka (2023b) that QR is an instance of phrasal internal pair-Merge, where the lower copy is pronounced. Otsuka argues that in English, when a phrase undergoes internal pair-Merge, the lower copy is pronounced, and that the effect of QR arises when the higher copy receives its interpretation. Importantly, he claims that phrasal internal pair-Merge must be applied

within a single Transfer domain. According to Chomsky (2004), when an element undergoes pair-Merge, it is merged in a “separate plane” and returns to the primary plane (where standard set-Merge occurs) at the time of Transfer through an operation called SIMPL(ification). For SIMPL to apply properly, copies created by pair-Merge need to be transferred at the same time.⁴

The possibility for the embedded object *only Aspects* in (4), presented here again in (18a), to undergo QR across clause boundaries is accounted for as follows. At the embedded CP level in (18b), the C head is introduced through externally pair-Merge to T. The head $\langle C, T \rangle$ with an unvalued φ -feature, enters into an agreement relationship with the external argument, which is then merged to the specifier position of $\langle C, T \rangle$. The labels for δ and ε are determined as C-T and $\langle \varphi, \varphi \rangle$, respectively. As shown in (18c), what is transferred is the complement of the phase head C, namely, T. This allows the embedded object to undergo pair-Merge to a position higher than the matrix verb *request*, resulting in an inverse scope interpretation.⁵

- (18) a. She has requested that they read *only Aspects*.

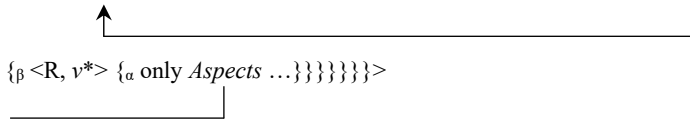
(request > only, only > request) (= (4))

- b. $\{_{\varepsilon} EA_{[\varphi]} \{_{\delta} \langle C_{[v\varphi]}, T \rangle \{_{\gamma} \overline{EA} \{_{\beta} \langle R, v^* \rangle \{_{\alpha} \text{only Aspects ...} \} \} \} \} \}$

($\alpha = \langle \varphi, \varphi \rangle$, $\beta = \gamma = R - v^*$, $\delta = C - T$, $\varepsilon = \langle \varphi, \varphi \rangle$)

- c. $\{_{\varepsilon} EA_{[\varphi]} \{_{\delta} \langle C_{[v\varphi]}, \overline{T} \rangle \{_{\gamma} \overline{EA} \{_{\beta} \langle R, v^* \rangle \{_{\alpha} \text{only Aspects ...} \} \} \} \} \}$

- d. $\langle_{\theta} \text{only Aspects ...} \{_{\eta} \text{request ...} \{_{\zeta} \langle C_{[v\varphi]}, \overline{T} \rangle \{_{\varepsilon} EA_{[\varphi]} \{_{\delta} \langle \overline{C}, \overline{T} \rangle \{_{\gamma} \overline{EA}$



Postulating the derivation in (18) allows us to capture several properties observed in subjunctive clauses. Firstly, it provides a natural explanation for the apparent absence of T elements in subjunctive clauses. As shown in (19), verbs in subjunctive clauses do not exhibit inflection.⁶ Likewise, as the example in (20) suggests, *do*-support, which occurs as a last resort when the affix fails to lower to the verb, is not operative in subjunctive clauses.

- (19) a. She requested that he have a second chance.

- b. They demanded that he produce his identity card. (Radford (2009: 107))

- (20) The doctor insisted that he (*do) not be moved. (Radford (2009: 108))

These facts follow once we hypothesize that in subjunctive complements, T is made invisible by pair-Merge. In this regard, Hayashi (2020) argues that *do*-support cannot be applied when ϕ -features remain on C, since the dummy verb *do*, which is an auxiliary, must merge with T. Alternatively, Maeda (2021) suggests that when T is rendered invisible by pair-Merge at the syntactic level, vocabulary insertion to T, which occurs post-syntactically, fails (Halle and Marantz (1993)). Both of these ideas are compatible with the current approach, where the invisibility of the T head accounts for the lack of inflection or *do*-support on T. In contrast, under Kanno and Nomura's (2012) analysis, T is independently merged and inherits ϕ -features from C. Therefore, it cannot be said that *do*-support is blocked because the T head lacks ϕ -features, nor that T is syntactically invisible. This raises the question of why the T head fails to serve as a host for the valued feature.⁷

Moreover, the present proposal accounts for the defectiveness of the left periphery in subjunctive clauses. As illustrated in (21), subjunctive clauses allow neither topic preposing nor locative inversion.

- (21) a. * The senator proposed that the troops, they be withdrawn immediately.
 b. * It's important that the book he study carefully.
 c. * This scene requires that up the street trot the dog.
 d. * It's mandatory that in the halls stand the guards.

(Hooper and Thompson (1973: 485))

For this point, it is instructive to note that Otsuka (2017) suggests that in a reverse pair-Merge configuration, "...there remains only one layer that can be utilized for the label determination (Otsuka (2017: 144))." Specifically, as illustrated in (22b), if there is a topic phrase above the embedded subject, it must land above the subject merged to δ . The label for the node ε fails to be determined, resulting in ungrammaticality.

- (22) a. * The senator proposed that the troops, they be withdrawn immediately.
 (= (21a))

- b. $\{\varepsilon \text{ Topic}_{[u\text{Top}]} \{\delta \text{ EA}_{[\phi]} \{\gamma < C_{[v\phi]}, T > \{\beta \text{ EA}_{[\alpha]} \{\alpha < R, v^* > \dots \} \} \} \} \}$

$$(\alpha=\beta=R-v^*, \gamma=C-T, \delta=<\varphi, \varphi>, \varepsilon=??)$$

The defectiveness of the left periphery in subjunctive clauses is hard to explain if we rely solely on the absence of a Tense feature, as argued by Kanno and Nomura (2012). It seems clear that the presence of a Tense feature is related to the structure of CP periphery, since the left periphery in nonfinite CP are also defective, as illustrated in (23). Argument fronting or locative inversion are not allowed in any of the examples.

- (23) a.* It bothers me that big cigar, for the mayor to smoke it.
b.* That book for me to read would be impossible.
c.* I believed hiding behind the curtain to be Polonius.
d.* The director wanted up the street to trot the dog.

(Hooper and Thompson (1973: 484–485))

It seems, however, still necessary to make an additional assumption to explain the defectiveness of the CP periphery shown in (21) and (23) based solely on the absence of a Tense feature. Note that Sugimoto's (2021) external pair-Merge analysis of infinitival clauses, which I mentioned in section 4, correctly captures the impoverished left periphery observed in (23). Under Sugimoto's approach, external pair-Merge of T to C renders the latter invisible, preventing a topical element from merging at its specifier position.⁸

One might wonder whether it is possible to distinguish the derivation of subjunctive clauses presented here from that of indicative clauses. In other words, why can only subjunctive clauses, but not indicative clauses, allow pair-Merge of C to T? I propose that the difference lies in the fact that the subjunctive *that* is a distinct lexical element from the indicative *that*. In this regard, Hiroe (1999) points out, as shown in (24), that the subjunctive *that* is unique in that it must be overt, unlike in indicative clauses.

- (24) a. Bill knew (that) the teacher was lying.
b. Jack demanded *(that) the charge should go fifty-fifty.

(Hiroe (1999: 59))

In addition, Hiroe cites Russian data presented in (25), which show that there is a language which lexically distinguishes the subjunctive complementizer *čtoby* 'that'

from the indicative one *čto* ‘that.’

- (25) a. Ivan znaet [čto Maša ljubit Petra]
 Ivan know-3.sg that Masha love Petr
 ‘Ivan knows that Masha loves Petr.’
 b. Ivan xočet, [čtoby Maša ljubila Petra]
 Ivan want-3.sg that-subj Masha love Petr
 ‘Ivan wants Masha to love Petr.’

(Khomitsevich (2007: 8–9) from Hiroe (1999: 59))

Based on this argument, I assume that despite the apparent isomorphism, the subjunctive *that* (=C, T>) should be treated as a distinct lexical item from indicative *that* (=C). Notably, if the present approach is correct, there is no need to postulate different kinds of C to distinguish subjunctive clauses from indicative clauses. The difference between them is simply derived from the way Merge is applied.

6. Concluding Remarks

This paper presented a novel analysis of QR in subjunctive clauses. I proposed that subjunctive CP is derived through external pair-Merge of C to T, which accounts for the availability of phrasal internal pair-Merge of the embedded element across clause boundaries.

Notes

* Parts of this paper were presented at the 96th General Meeting of The English Literary Society of Japan held at Tohoku University (May 2024). I would like to express my sincere gratitude to Nobuaki Nishioka for his invaluable suggestions and comments. I am also grateful to Masako Maeda for her insightful comments and suggestions. My thanks also go to Carrie Ankerstein for her stylistic improvements. Needless to say, all remaining inadequacies are my own.

¹ It has also been pointed out that subjunctive CPs do not constitute *wh*-islands. As the following examples in (i) show, infinitival and subjunctive clauses, but not indicative clauses, allow a *wh*-phrase to move across a CP whose specifier is occupied by another *wh*-phrase (see Kanno and Nomura (2012) for discussion).

- (i) a. * What_i do you wonder [where_j he bought t_i t_j]?
 b. What_i do you wonder [how_j to cook t_i t_j]?
 c. What_i do you wonder [how_j you should cook t_i t_j]? (Matsumoto (2009: 117))

My contention is that the analysis developed in this paper can also be applied to this observation. However, I focus solely on QR, leaving a detailed explanation of transparency in *wh*-islands as in (i) for future research.

² Kanno (2008) argues that control CP and ECM/Raising CP lack a Tense feature because they do not have temporal morphology such as *-ed* or *-en*. He claims that control CP does not have an Agree feature based on the fact that, as illustrated in (i), the quantifier *all* cannot be stranded in Spec-T, to which an Agree feature should trigger movement of the embedded subject PRO.

- (i) a. * They tried all to leave. (Baltin (1995: 200))
 b. They tried to all like John. (Baltin (2001: 235))

According to Kanno, ECM/Raising CP has an Agree feature. Unlike control complements, ECM/Raising complements allow *all* to strand in Spec-T, as shown in (ii).

- (ii) Mary believes the students_i [_{TP} [all t_i] to [_{VP} t_i know French]] (Bošković (2001: 68))

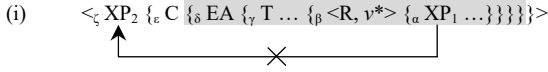
³ Under his analysis, Otsuka (2017) argues that external pair-Merge of v^* to R can explain the observation that in some Scandinavian languages, inflection on past participles appears when a DP undergoes movement, as shown in the Swedish examples in (i).

- (i) a. Det har blivit skrivet/*skrivna tre böcker om detta.
 Expl have been written.sg/written.pl three books about this
 ‘There have been three books written about this.’
 b. Det har blivit tre böcker *skrivet/skrivna om detta.
 Expl have been three books written.sg/written.pl about this
 ‘There have been three books written about this.’ (Holmberg (2002: 86))

Otsuka (2023a), extending his analysis, suggests that v^* undergoes external pair-Merge to R in (ib), where unvalued ϕ -feature on v^* is inherited by the particle. Although ϕ -feature agreement occurs, Case valuation does not occur because R is not visible due to pair-Merge. I leave the possibility of Feature Inheritance from the amalgamated head to the lower one and the detailed mechanism of Case valuation for future research.

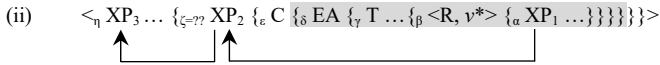
⁴ When an element undergoes internal pair-Merge outside the Transfer domain of the relevant

phase, as sketched in (i), the derivation is doomed to crash.



This is because when only the lower copy (XP_1) undergoes Transfer and the higher copy (XP_2) returns to the primary plane at the next phase level, it fails to maintain the proper relationship with the lower copy.

Note further that it is also impossible for a moved element to be set-Merged to the phase edge before undergoing pair-Merge at the matrix phase level. Otsuka (2023b) argues that this gives rise to a labeling failure because labeling takes place before SIMPL. As illustrated in (ii), even after the application of internal pair-Merge to create XP_3 , the middle copy XP_2 is visible when labeling is applied, resulting in an XP-YP configuration for ζ .



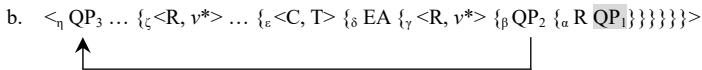
⁵ Although this paper solely discusses QR of an object quantifier, it is interesting to note that a subject quantifier in subjunctive clauses cannot undergo QR, as shown in (i).

- (i) She has requested that only John read it. (request > only, *only > request)

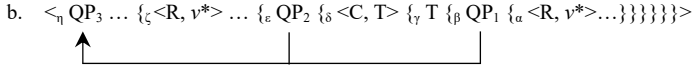
(Kayne (1998: 145))

Neither the present analysis nor Kanno and Nomura's (2012) analysis can provide a straightforward account for this subject-object asymmetry unless we make an additional assumption. One promising approach is to adopt Goto and Ishii's (2024) Minimal Search-free Merge Hypothesis. They argue that Merge obeys Binarity and the PIC (see Goto and Ishii (2024) for detailed discussion). What is relevant for the current discussion is that object QR involves binary Merge as shown in (iib), while subject QR would require ternary Merge as we can see in (iiib). I contend that this illicit ternary Merge is the reason for its inapplicability (note that the lowest QP_1 in (iib) does not count as a copy to which the relevant Merge applies, since it has already undergone Transfer at the previous phase stage).

- (ii) a. She has requested that he read only *Aspects*. (request > only, only > request)(=4)



- (iii) a. She has requested that only John read it. (request > only, *only > request) (=i)



⁶ It is widely argued that subjunctive clauses do not actually lack T but have a null T. As the example in (i) illustrates, the auxiliary *should* can appear in subjunctive CPs.

- (i) They demand that the park should remain open.

(Huddleston and Pullum (2002: 995))

I assume that the subjunctive CP has a Mod(al)P projection above the verbal domain as shown in (ii), where the subjunctive $\langle \text{C}, \text{T} \rangle$ head selects the Mod head, which hosts the auxiliary *should*.

- (ii) $[\langle \text{C}, \text{T} \rangle \langle \text{C}, \text{T} \rangle [\text{ModP Mod } [_{v^* \text{P}} \text{EA } v^* \dots]]]$

⁷ What the present analysis needs to make clear is how the valued ϕ -features on C are realized. For this point, I suggest that the valued ϕ -feature on C affixes onto the Mod head projected above the verbal domain, which is optionally realized as *should* (see note 6).

⁸ It is possible for an infinitival clause and subjunctive clause to have a *wh*-phrase merged at the edge of the clause (see note 1). The issue of why only a topical element is prohibited from merging at the specifier position of such clauses will be addressed in future research.

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