ON PHASEHOOD OF FUNCTIONAL CATEGORIES IN THE LEFT PERIPHERY

A DISSERTATION PRESENTED

by

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B.A. in English Linguistics, Tohoku University
(2008)
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Abstract

This thesis addresses new issues regarding two ongoing research programs: *Minimalism* and *Cartography*. In Minimalism, Chomsky (2000 et seq.) proposes the phase theory that restricts application of elementary syntactic operations. On the other hand, in Cartography, Rizzi (1997, 2004) pursues the Split CP hypothesis to investigate the fine details of syntactic structures of a wide variety of languages. Each approach has great achievements, but the approach unifying the two theories has not fully been addressed in the past. In this thesis, I will investigate how we can unify Minimalism and Cartography. To tackle this issue, I begin with the more specific question of which head of the left-peripheral functional categories purported under the Cartographic approach is a phase head in the sense of Minimalism. As an answer for this question, I

propose that the heads Force and Top are phase heads while the heads Foc and Fin are not. I will demonstrate that my proposal gives a unified account for a large variety of syntactic phenomena in each chapter.

In chapter 2, I will focus on the asymmetry of the heads Top and Foc. Showing that the former is a phase head while the latter is not, my proposal provides a unified account of three asymmetries between Topicalization and Focalization in English. First, Topicalization induces a syntactic island from which extraction of elements is banned, while Focalization does not form a syntactic island. Second, Focalization can cause Subject-Aux Inversion (SAI) in embedded clauses, whereas Topicalization cannot. Third, Topicalization shows a comma pause, while Focalization does not.

In chapter 3, I will explore the property of the phase head Force in root CP clauses. The phase heads Transfers their complements into the two interfaces: the *Conceptual-Intentional system* (C-I or LF) and the *Sensorimotor system* (SM or PF), with *syntax* as the mediation between them. However, in root CP, the highest projection ForceP remains untransferred. In particular, I will focus on the cases in which the head Force and the specifier of Force in root CP are not Transferred at the point of convergence of derivations. The untransferred head and edge are not sent into the two interfaces and, specifically, not sent into the PF interface and therefore are not pronounced. I will show that these cases do exist as a number of syntactic phenomena: Aux-drop, gapping, particle-stranding ellipsis in Japanese, German Topic-drop, and Subject-drop in English.

In chapter 4, I will investigate the difference between finite CP and infinitival CP clauses. Specifically, the two types of CP clauses differ from each other in that finite CP clauses have layered functional structures while infinitival CP clauses have

defective functional structures. Moreover, I propose that the head Force in finite CP clauses behaves as a phase head while the head Force in infinitival CP clauses does not. In implementing my proposal, I utilize *Distinctness* introduced by Richards (2010). This condition bans two identically labeled constituents from being linearized in the same syntactic domain. Although it can uniformly explain a variety of syntactic phenomena, this condition has some problems and I will demonstrate that my proposal solves these problems.

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List of Abbreviations

BOLD	bold indicates focalized elements
CAPS	capitals indicate stress
Italic	italic indicates topicalized elements
~~strikethrough~~	strikethrough indicates deletion/non-pronounciation
1, 2, 3	fast, second, third person
ACC	accusative
CAUS	causative
CL	clitic
COMP	complementizer
COP	copula
DAT	dative
EXCL	exclamation
F	feminine
Gen	genitive
GER	gerundive
Ind	indicative mood
LOC	locative
NOM	nominative
Op	operator
PART	particle
PAST	past tense
POL	politeness marker
PRES	present

Q	question
SG	singular
TAG	tag
TIT	title
TOP	topic

Chapter 1

Introduction

1.1. The Aim

The aim of this thesis addresses new issues concerning two ongoing research programs: *Minimalism* and *Cartography*. Advancing the research program called Minimalism, Chomsky (2000, 2001, 2004, 2007, 2008, 2013) proposes the phase theory that restricts application of elementary syntactic operations. On the other hand, initiating the research program called Cartography, Rizzi (1997, 2004) puts forth the Split CP hypothesis to provide a detailed description of a wide of variety of languages. Each study has produced a lot of achievements, but the study of linking the two theories has not fully been pursued in the past. I will study far-reaching consequences that follow from combining the phase theory with the Split CP hypothesis. This thesis tackles the unification of Minimalism and Cartography.

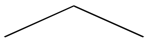
1.2. Minimalism and Cartography

In this section, I will overview the phase theory and the Split CP hypothesis. The two programs have been developed since the mid-1990s. The former has been advocated in Chomsky (1995, 2000, 2001, 2004, 2007, 2008, 2013), and the latter, in Rizzi (1999, 2004) and Cinque (1999).[1] The former focuses on the study of elementary syntactic computations while the latter focuses on the study of drawing maps of syntactic configurations as precise and detailed as possible.

1.2.1. Minimalism

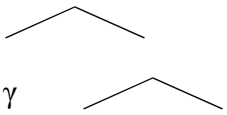
In the study of human language, a lot of scholars focus on the design of *the faculty of language* (FL). FL has the two interfaces: the *Conceptual-Intentional system* (C-I or LF) and the *Sensorimotor system* (SM or PF), with *syntax* as the mediation between them. Minimalism assumes that FL is optimally designed in order to satisfy interface conditions. From this view, syntactic operations are minimized in such a way that syntactic objects (SOs) are built from bottom to top, by iterative application of the operation *Merge*, which combines two SOs and forms s set of them.

(1) Merge (α, β) ⇒ a. {α, β}

b. 

α β

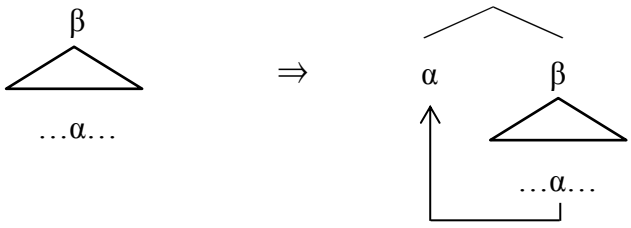
c. Merge (γ, (α, β)) ⇒ {γ, {α, β}}

d. 

γ α β

Merge has two cases: *External Merge (EM)* and *Internal Merge (IM)*. The former is illustrated in (1). EM can combine two SOs and produce a set of them, and this set can be further merged externally with another SO, and such an operation can be further repeated. On the other hand, IM is shown in (2).

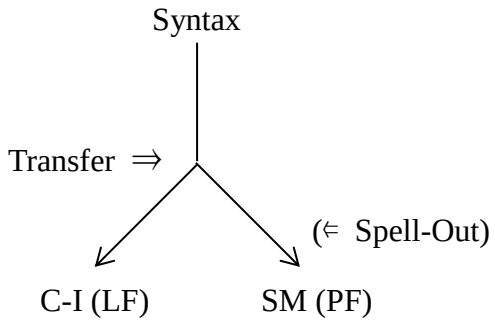
(2) $[_{\beta}\ldots\alpha\ldots] \Rightarrow [\alpha\ [_{\beta}\ldots\alpha\ldots]]$



EM is the operation by way of which α is taken from within β and merged with β, which was formerly called *movement*. I will use the term *movement* for expository purposes in this thesis.

SOs built by Merge are mapped onto the semantic interface of the C-I interface or LF and the phonological interface of the SM interface or PF. The operation which maps SOs onto these two interfaces is called *Transfer* (in particular, mapping SOs onto the phonological side is called *Spell-Out*) as shown in (3).

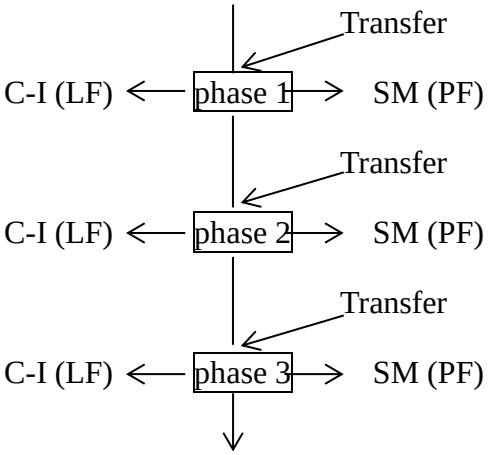
(3) Y-model



Chomsky (2004, 2007, 2008) assumes that Transfer applies in syntactic derivational chunks which are called *phases*. In this phase theory, syntactic computations are derivationally determined by application of iterating Merge and Transfer phase by phase

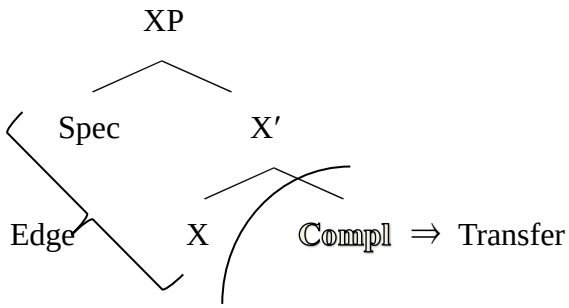
as shown in (4).

(4) Phase by Phase Derivation



As shown in (5), phases are assumed to be CP and *v*P, whose head triggers Transfer.

(5)



[Phase Head ＝C, *v*]

The phase theory has the origin in Strict Cycle Condition of Chomsky (1973):

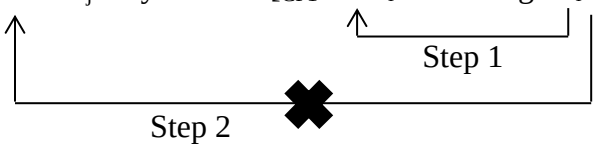
(6) Strict Cycle Condition

No rule can apply to a domain dominated by a cyclic node A in such a way as to affect solely a proper subdomain of A dominated by a node B which is also a cyclic node

(Chomsky (1973: 243))

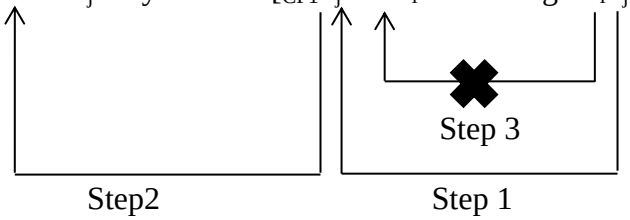
This condition states that when a derivation extends a cycle A to another cycle B, some rules cannot apply to the cycle A. For example, let us consider (7).

(7) *[$_{CP2}$ For whom$_j$ do you think [$_{CP1}$ what$_i$ John bought t_i t_j]]?



(7) violates the *wh*-island condition because, first, *what* moves into the specifier of CP1 (Step 1) and then *for whom* crosses *what* in CP1 (Step 2). However, there is another potential derivation in (8).

(8) [$_{CP2}$ For whom$_j$ do you think [$_{CP1}$ t_j what$_i$ John bought t_i t_j]]?



First, *for whom* moves into the specifier of CP1 (Step 1) and further moves into the specifier of CP2 (Step2). Finally, *what* moves into the specifier of CP1 (Step 3). This derivation does not violate the *wh*-island condition. Step 3, however, violates

Strict Cycle Condition because when the derivation advances to the cycle of CP2, no rules can apply to CP1. The essence of Strict Cycle Condition is inherited by Phase Impenetrability Condition (PIC).

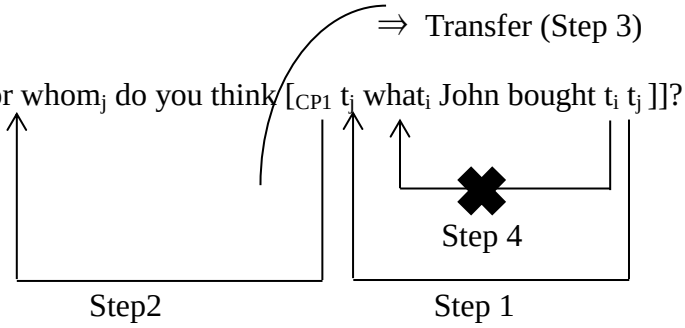
(9) Phase Impenetrability Condition

In phase P with head H, the domain of H is not accessible to operations outside P and only H and its edge are accessible to such operations.

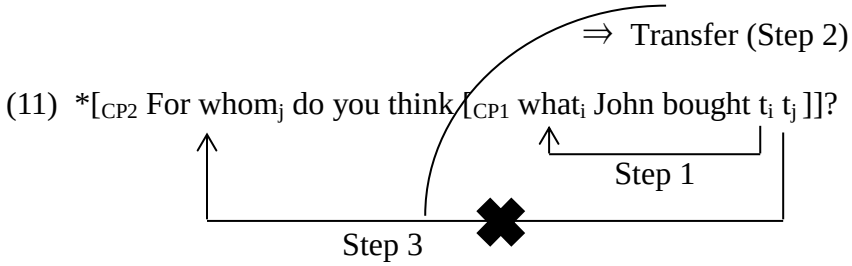
(Chomsky (2000: 108))

As in the case of Strict Cycle Condition, PIC can account for (8) as shown in (10) below.

(10) $[_{CP2}$ For whom$_j$ do you think $[_{CP1}$ t_i what$_i$ John bought t_i t_j]]?



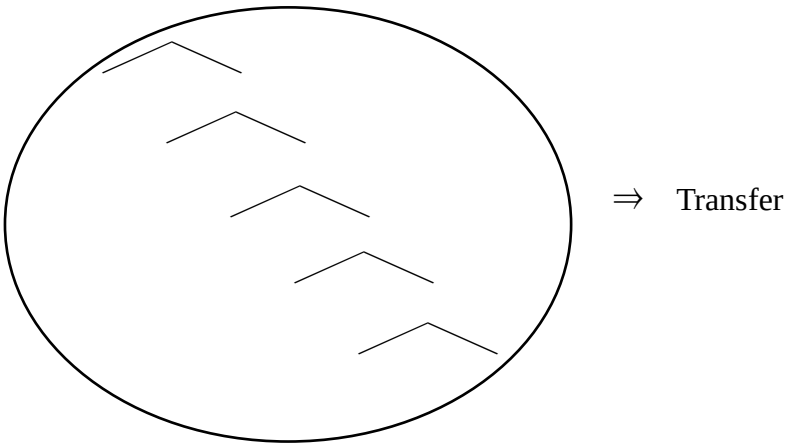
In (10), Step 1 and Step 2 cause no problem. After these operations, CP1 is Transferred. By PIC, no syntactic operations can apply to *what* within CP1, and, therefore, this derivation is ungrammatical. Moreover, PIC can explain (7) as shown in (11) below.



In (11), after Step 1, CP1 is Transferred and by PIC, no syntactic operations can apply to *for whom* within CP1. Thus Step 3 is the violation of PIC. As a result, the phase theory imposes a stronger cyclicity on derivation.

Furthermore, Chomsky (2000 2001) argues that the syntactic computation has to reduce the memory load and increase the computational efficiency. It is considered that Transferring of the derivation as a whole at once as in Y-model in (3) above is global and is not economical because the two interfaces have to read the derivation from bottom to top and calculate this at once. This significantly imposes a heavy burden on the syntactic computation.

(12) *Transferring the Derivation as a Whole at Once*

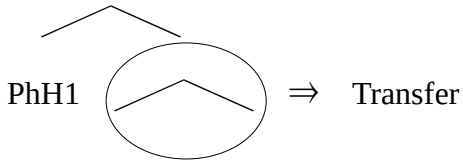


On the other hand, the phase theory assumes that the syntactic computation

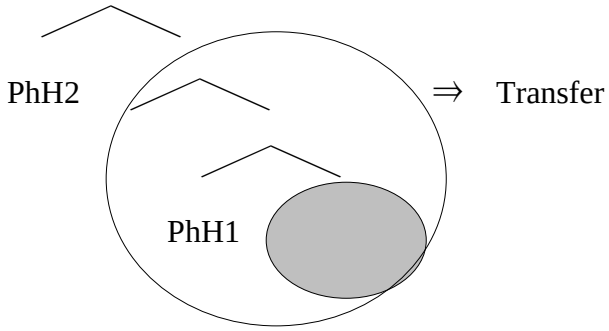
must be local and derivational units must be minimized ones, which are phases. (In (13), PhH means phase head.)

(13) *Phase-by-Phase Syntactic Computation*

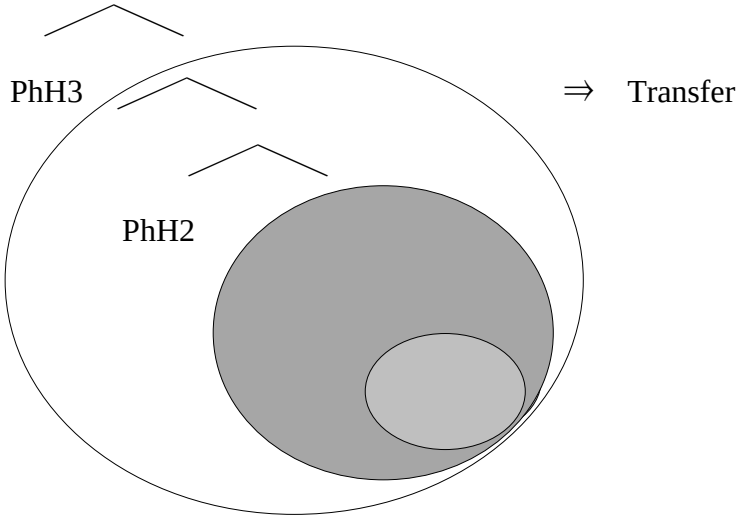
a. *Phase1*



b. *Phase2*



c. *Phase3*



Complements of phases are calculated at every time of Transfer, where they are sent to

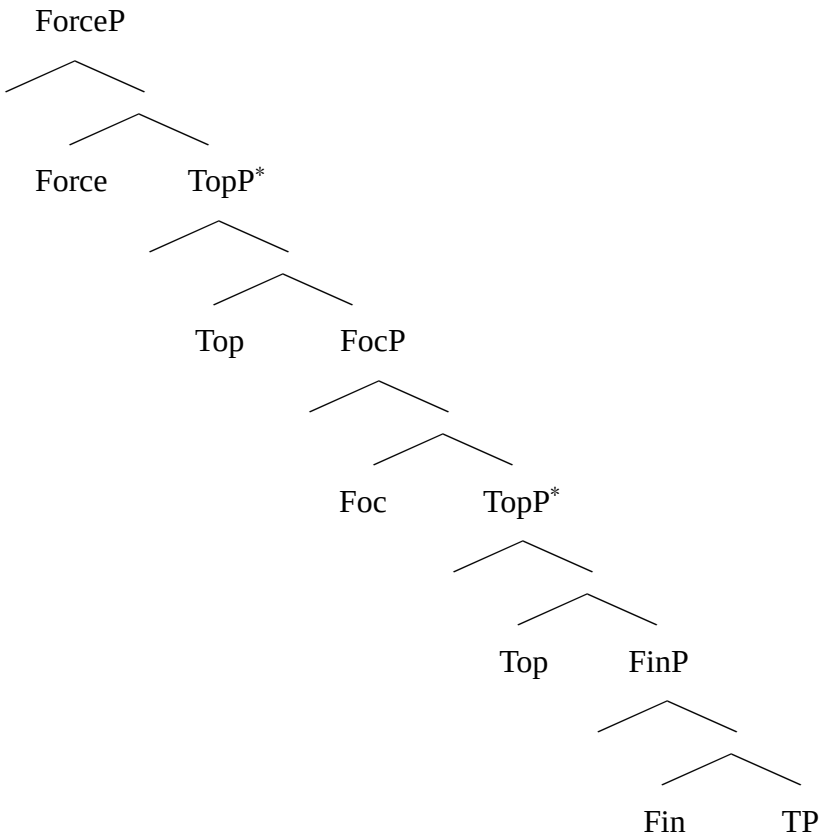
LF and PF and are inaccessible from higher phases. The phase-by-phase derivation is more economical than the computation at once because the two interfaces interpret minimized structures.

In this section, I overviewed Minimalism (Chomsky (1995) et seq.). In particular, I summarized the syntactic operation Merge and the phase theory (Chomsky (2000) et seq.) In the next section, I will overview the Cartography approach.

1.2.2. Cartography

While Minimalism focuses on elementary syntactic operations, the Cartographic approach (Rizzi (1997, 2004) and Cinque (1999)) focuses on the fine details of syntactic structures. It is an attempt to draw maps as precisely as possible by relating syntactic configurations with information structure, tense, mood, aspect, and voice.[2] Using Italian data, Rizzi (1997, 2004) claims that CP is split into a number of different functional projections, and this structure is shown in (14).[3]

(14)



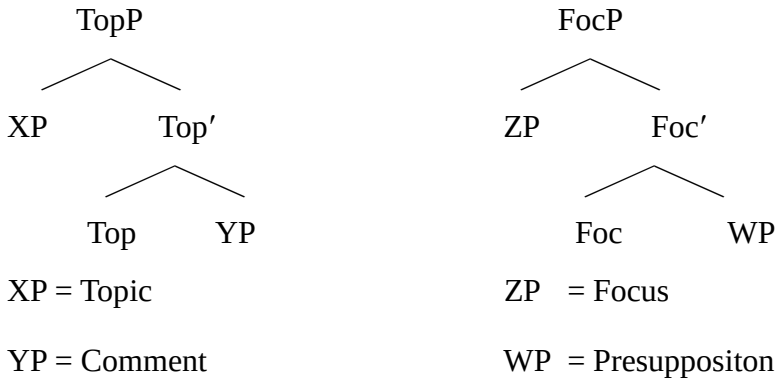
(Rizzi (1997: 297))

Rizzi (1997) supposes that the left periphery in a clause is a kind of interface with TP and the clausal domain higher than CP, or discourse. ForceP gives discourse the information of clausal type, for example, a question, a declarative, an exclamative, a relative, a comparative, an adverbial of a certain kind, etc. On the other hand, Fin(iteness)P gives TP the information of the verbal system of the clause. For example, if a complementizer is *that*, an embedded TP clause must be a finite clause in English, or if a complementizer is *for*, an embedded TP clause must be a non-finite clause in English. CP should be divided into ForceP and FinP.

The heads Top and Foc also have one and only one head in each projection because multiple specifiers cannot be linearized under the *Linear Correspondence Axiom* (of Kayne (1994), LCA). A topicalized or focalized element moves to a

specifier position of each phrase to satisfy the Topic or Focus feature.[4] Thus, the specifier of TopP is occupied by one topicalized element. On the other hand, the specifier of FocP is occupied by one focalized element, one *wh*-element, or one element of Neg-Preposing. Each complement plays a distinctive role in the information structure. The complement of TopP is comment, which is new information in the discourse, while the topicalized phrase is old information in the discourse. In contrast, the complement of FocP is presupposed in the discourse, while the focalized phrase is new information in the discourse, as shown in (15).

(15)



Rizzi derives the structure (14) from the cooccurence restriction phenomena in Italian involving, in particular, the finite complementizer *che* 'that', the infinitival complementizer *di* 'of', Topicalization, and Focalization. First, when clauses are finite CPs, the complementizer *che* 'that' appears, while in the case of infinitival CPs, the complementizer *di 'of'* appears.

(16) a. Credo *che* loro apprezzerebbero molto il tuo libro
"I believe *that* they would appreciate your book very much"

b. Credo *di* apprezzare molto il tuo libro
"I believe '*of*' to appreciate your book very much"

(Rizzi (1997: 288))

Second, in finite CPs, *che* 'that' must precede a topicalized element as shown in (17).

(17) a. Credo che *il tuo libro*, loro lo apprezzerebbero molto
"I believe that *your book*, they would appreciate it a lot"
b. *Credo, *il tuo libro*, che loro lo apprezzerebbero molto
"I believe, *your book*, that they would appreciate it a lot"

(Rizzi (1997: 288))

Third, in infinitival CPs, *di* 'of' must follow a topicalized element as shown in (18).

(18) a. *Credo di *il tuo libro*, apprezzarlo molto
"I believe 'of' *your book* to appreciate it a lot"
b. Credo, *il tuo libro*, di apprezzarlo molto
"I believe, *your book*, 'of' to appreciate it a lot"

(Rizzi (1997: 288))

Fourth, in *wh*-questions, *a chi* 'to whom' must follow a topicalized element as shown in (19).

(19) a. ***A chi***, *il premio Nobel*, lo daranno?

"**To whom**, *the Nobel Prize*, will they it?

b. *Il premio Nobel*, **a chi** lo adranno?

"*The Nobel prize*, **to whom** will they give it?"

(Rizzi (1997: 289))

From (16)-(19), the word order in the Italian left periphery is described in (20).

(20) ... Force ... (Topic) ... (Focus) ... Fin TP

Moreover, there are differences between Topic and Focus in Italian. First, Topicalization can repeatedly occur in the same clause, while Focalization cannot.

(21) *Il libro*, *a Gianni*, *domani*, gliero darò senz'altro

"*The book, to John, tomorrow*, I'll give it to him for sure"

(22) ***A GIANNI IL LIBRO*** darò (non a Piero, l'articolo)

"**TO JOHN THE BOOK** I'll give, not to Piero ,the article"

(Rizzi (1997: 290))

Topicalization and Focalization can also cooccur in the same clause.

(23) *A Gianni*, **QUESTO**, *domani*, gli dovrete dire

"*To Gianni*, **THIS**, *tomorrow*, you should tell him"

(Rizzi (1997: 291))

In (23), the focalized element **QUESTO (THIS)** occurs between topicalized elements.

Second, a topicalized element and a *wh*-element can cooccur in the same clause although the word order is restricted to <Top, *wh*>, not <*wh*, Top>, whereas a focalized element and a *wh*-element cannot.

(24) a. *A Gianni*, **che cosa** gli hai detto?
"To Gianni, **what** did you tell him?"
b. *__Che cosa__*, *a Gianni*, gli hai detto?
"**What**, *to Gianni*, did you tell him?"

(25) a. *__A GIANNI__ **che cosa** hai detto (, non a Piero)?
"**TO GIANNI what** did you tell (, non to Piero)?"
b. *__Che cosa__ **A GIANNI** hai detto (,non a Piero)?
"**What TO GIANNI** did you tell (, not to Piero)?"

(Rizzi (1997: 291))

As we saw in (23) above, Topicalization and Focalization can cooccur in the same clause, and other possible patterns of ordering are shown in (26).

(26) a. Credo che *a Gianni*, **QUESTO**, *domani*, gli dovremmo dire

C Top Foc Top TP

"I believe that to Gianni, THIS, tomorrow we should say"

b. Credo che, *domani*, **QUESTO**, *a Gianni*, gli dovremmo dire

C Top Foc Top TP

c. Credo che *domani*, *a Gianni*, **QUESTO**, gli dovremmo dire

C Top Top Foc TP

d. Credo che *a Gianni*, *domani*, **QUESTO**, gli dovremmo dire

C Top Top Foc TP

e. Credo che **QUESTO**, *a Gianni*, *domani*, gli dovremmo dire

C Foc Top Top TP

f. Credo che **QUESTO**, *domani*, *a Gianni*, gli dovremmo dire

C Foc Top Top TP

(Rizzi (1997: 295-6))

The sentences in (21)-(26) can be accounted for by the ordering generalization in (27).

(27) C (Top*) (Foc) (Top*) TP

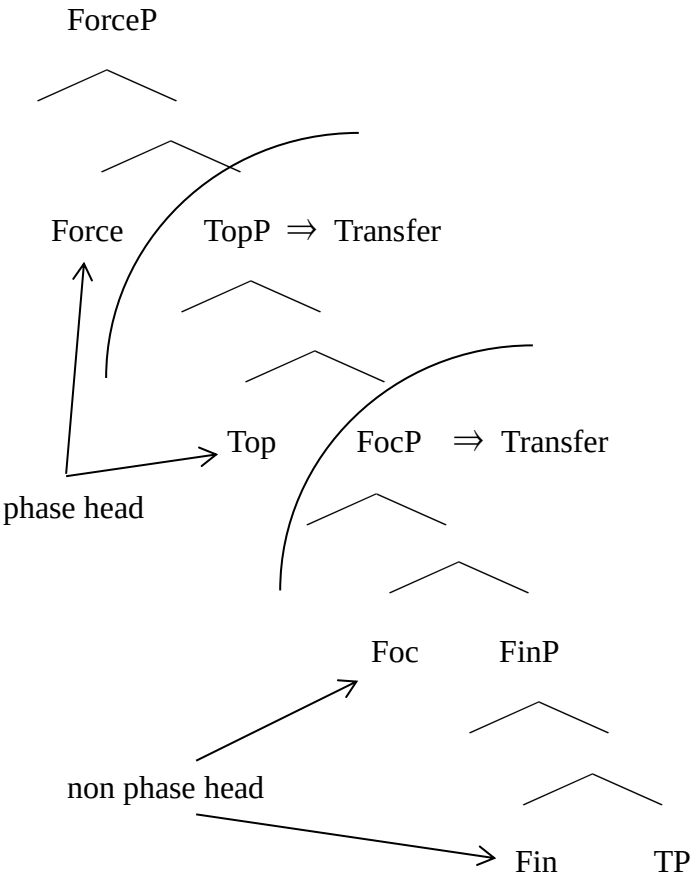
From (20) and (27), Rizzi proposes the syntactic hierarchy (15), repeated as (28) below.

(28) CP = [ForceP [TopP* [FocP [TopP* [FinP [TP …

1.3. When Cartography Meets Minimalism

On the basis of Minimalism and Cartography, I will consider an important question that follows from adopting the phase theory and the Split CP hypothesis: if CP has a number of functional projections, which head is a phase head and triggers Transfer? For this question, I propose that the heads Force and Top are phase heads while Foc and Fin are not.

(29)



In what follows, I will argue that my proposal gives a unified account of different syntactic phenomena.

The organization of the thesis is as follows. First, chapter 2 focuses on the asymmetry of the heads Top and Foc. Showing that the former is a phase head while

the latter is not, my proposal gives a unified account of three asymmetries between Topicalization and Focalization in English. First, Topicalization induces a syntactic island from which extraction of elements is banned, while Focalization does not form a syntactic island. Second, Focalization can cause Subject-Aux Inversion (SAI) in embedded clauses, whereas Topicalization cannot. Third, Topicalization shows a comma pause, while Focalization does not.

Next, in chapter 3, I will explore the property of the phase head Force in root CP clauses. The phase heads trigger Transfer and send their complements into the two interfaces. However, in root CP, the highest projection ForceP remains untransferred. In particular, I will focus on the cases in which the head Force and the specifier of Force in root CP are not Transferred at the point of convergence of derivations. The untransferred head and edge are not sent into the two interfaces or, specifically, not sent into the PF interface and therefore are not pronounced. I will show that these cases do exist as a number of syntactic phenomena: Aux-drop, gapping, particle-stranding ellipsis in Japanese, German Topic-drop, and Subject-drop in English.

Finally, in chapter 4, I will investigate the difference between finite CP and infinitival CP clauses. In particular, the two types of CP clauses differ from each other in that finite CP clauses have layered functional structures while infinitival CP clauses have defective functional structures. Moreover, I propose that the head Force in finite CP clauses behaves as a phase head while the head Force in infinitival CP clauses does not. In implementing my proposal, I utilize *Distinctness* introduced by Richards (2010). This condition bans two identically labeled constituents from being linearized in the same syntactic domain. Although it can uniformly explain a variety of syntactic phenomena, this condition has some problems and I will demonstrate that my proposal solves these problems.

Notes to Chapter 1

* Parts of this chapter originally appeared in Totsuka (2013) in *English Linguistics* (*EL*) 30.

1. For recent Cartographic studies, see Beninca and Munaro (2011), Cinque and Rizzi (2010b), Cardinaletti, Cinque, and Endo (2014). For an overview of Cartography, see also Cinque and Rizzi (2010a), Rizzi (2013a, b), Shlonsky (2010).

2. For example, in the TP domain, Cinque (1999) is a major development of this approach and analyzes the adverbial hierarchy as shown in (i).

(i) [*frankly* $\text{Mood}_{\text{speech act}}$ [*fortunately* $\text{Mood}_{\text{evaluative}}$ [*allegedly* $\text{Mood}_{\text{evidential}}$ [*probably* $\text{Mod}_{\text{epistemic}}$ [*once* T(Past) [*then* T(Future) [*perhaps* $\text{Mood}_{\text{irrealis}}$ [*necessarily* $\text{Mod}_{\text{necessity}}$ [*possibly* $\text{Mod}_{\text{possibility}}$ [*usually* $\text{Asp}_{\text{habitual}}$ [*again* $\text{Asp}_{\text{repetitive(I)}}$ [*often* $\text{Asp}_{\text{frequentative(I)}}$ [*intentionally* $\text{Mod}_{\text{volitional}}$ [*quickly* $\text{Asp}_{\text{celerative(I)}}$ [*already* T(Anterior) [*no longer* $\text{Asp}_{\text{terminative}}$ [*still* $\text{Asp}_{\text{continuative}}$ [*always* $\text{Asp}_{\text{perfect(?)}}$ [*just* $\text{Asp}_{\text{retrospective}}$ [*soon* $\text{Asp}_{\text{proximative}}$ [*briefly* $\text{Asp}_{\text{durative}}$ [*characteristically(?)* $\text{Asp}_{\text{generic/progressive}}$ [*almost* $\text{Asp}_{\text{prospective}}$ [*completely* $\text{Asp}_{\text{SgCompletive(I)}}$ [*tutto* $\text{Asp}_{\text{PlCompletive}}$ [*well* Voice [*fast/early* $\text{Asp}_{\text{celerative(II)}}$ [*again* $\text{Asp}_{\text{repetative(II)}}$ [*often* $\text{Asp}_{\text{frequentative(II)}}$ [*completely* $\text{Asp}_{\text{SgCompletive(II)}}$

(Cinque (1999: 106))

Cinque shows that TP is not a single projection, all adverbs are in the specifier positions

and the positions are hosted by silence heads in the TP domain.

3. In this structure, * means that the projection can be recursive.

4. An anonymous *EL* reviewer points out that a topic element is base-generated in the sentence-initial position.

(i) Nihon-wa dansei-ga tanmei desu
Japan-Top male-Nom short-lived polite
'In Japan, the male is short-lived.'

(Endo (2007: 106))

Endo (2007) argues that this type of topic element functions as scene-setting and the element *Nihon* 'Japan' has no grammatical relation with the predicate *tanmei* 'short-lived' in (i). Not all topicalized elements are associated with movement operations. Therefore, there are some parametric differences that affect properties of topic elements across languages.

Chapter 2

On the Asymmetry between Topic and Focus

2.1. Introduction

In this chapter, within the framework of the Cartographic approach put froth by Rizzi (1997, 2004), I propose that the head Top and the head Force are phase heads whereas the head Foc and the head Fin are not. My proposal gives a unified account of three asymmetries between Topicalization and Focalization in English. First, Topicalization induces a syntactic island from which extraction of elements is banned, while Focalization does not form a syntactic island. Second, Focalization can cause Subject-Aux Inversion (SAI) in embedded clauses, whereas Topicalization cannot. Third, Topicalization shows a comma pause, while Negative Inversion as Focalization does not.

This chapter is organized as follows. In section 2, based on Rizzi's (1997) Cartographic approach, I propose that the heads Top and Force are phase heads. Section 3 shows that my proposal gives a unified account of the three asymmetries. Section 4 is a summary.

2.2. Proposal

Following the Cartographic approach (Rizzi (1997)), I adopt the Split CP hypothesis, where CP is not a single projection, but consists of layered projections. In particular, I assume that CP has the following structure.[1]

(1) CP = [ForceP [TopP [FocP [FinP [TP ...

Following Rizzi (1997), I will explore the structure of the left periphery in English. As we saw in chapter 1, Italian has rich layered functional projections, but English does not as I will show below.

First, let us consider TopP, FocP, and ForceP in English. English has Topicalization and Focalization.

(2) a. *Your book*$_i$, you should give t_i to Paul, (not to Bill).

b. **YOUR BOOK$_i$** you should give t_i to Paul, (not mine).

Topicaliztion and Focalization can cooccur in the same clause in English although the word order is restricted.

(3) a. ***What** *to Leonard* should we say on his birthday?

b, *To Leonard* **what** should we say on his birthday?

(Gelderen (2004:43))

(4) a. Becky said that *these books*, **only with great difficulty** can she carry.

b. *Becky said that **only with great difficulty** *these books* can she carry.

(Koizumi (1999: 141))

(5) a. *This book*$_i$ **to ROBIN**$_j$ I gave t_i t_j.

b. ***To ROBIN**$_j$ *this book*$_i$ I gave t_i t_j

(Haegeman (2012: 31))

Only the word order <Top, Foc> or <Top, *wh*> is allowed. As shown in (5), Topic and Focus can cooccur in the same embedded clause and the complementizer *that* should be analyzed as Force because Italian *che 'that'* is analyzed in the same way. Moreover,

generally, multiple Topicalization in English is banned.

(6) a. **This book*$_i$, *to Robin*$_j$ I gave t_i t_j.

(Culicover (1991:31))

b. **Last year*, *in St. Louis*, we were living.

(Culicover (1991:33))

Second, let us consider the FinP in English. Radford (2004) suggests that Present-day English has no overt complementizers of infinitival control clauses like Italian *di 'of'*, while Middle English has the counterpart to Italian *di* 'of', that is *for* in (7).

(7) a. Al were it good [*no womman* for to touche]

Although it would be good to touch no woman

(Chaucer, *Wife of Bath's Tale*, line 85)

b. I wol renne out, [*my borel* for to shewe]

I will run out, in order to show my clothing

(Chaucer, *Wife of Bath's Tale*, line 356)

(Radford (2004: 333))

In (7), *no womman* 'no woman' and *my borel* 'my clothing' are direct objects of the verbs in control clauses, and they are Topicalized and move into the specifier of TopP.[2] *For* is in the lower position than TopP, and this cannot occupy the head Force. Therefore, it seems that this complementizer occupies the head Fin. Through the historical change, the head Fin is defective, but English has the position of FinP.

From these facts, I assume that the finite CP of English has the Split CP structure in (1) (as repeated in (8) below).

(8) CP = [ForceP [TopP [FocP [FinP [TP ...

In comparison with the Split CP structure of Italian, the Split CP of English has a single TopP and TopP is not recursive.[3]

Given (8), I propose that two functional heads Top and Force are phase heads, trigger Transfer, and form Spell-Out domains. Force is the highest head of the C-domain and has the same function of standard C as a phase head. Therefore, it is a phase head. For Top, the topic-comment relation is a sort of predication and its predication is established when a topicalized element and the rest of sentence are Transferred separately. Therefore, Top is a phase head, Transfers its complement TP, and forms distinct phase domains. On the other hand, the focus-presupposition relation is a sort of quantification such as operator-variable binding (see Rizzi (1997)). This relation is established when an operator and its variable are in the same domain, so Foc is not a phase head.

Note that as Kiss (1998) points out, Focus is divided into two types of Focus: *Identificational Focus* (ID Focus) and *Informational Focus* (Info Focus).[4] Semantically, ID Focus represents exhaustiveness implicature, whereas Info Focus does not express this. Kiss (1998) argues that the former moves into the specifier of FocP, while the latter does not.[5] Following her argument, I will concentrate on ID Focus in what follows.

Why is it that the head Top is a phase head and triggers Transfer, whereas the head Foc is not? The answer may be offered from the perspective of semantic

properties. Kuroda (1972) assumes that there are two different types of sentence judgment: *the categorical judgment* and *the thetic judgment* as shown in (9).

(9) a. Inu wa neko o oikaketeiru.
dog-TOP cat-ACC chase-PROG-PRES
'The dog is chasing a cat.'
b. Inu ga neko o oikaketeiru.
dog-NOM cat-ACC chase-PROG-PRES
'A dog is chasing a cat.'

(Kuroda (1972: 161))

(9a) is the categorical judgment and (9b) the thetic judgment. The former judgment consists of two separate acts; one is the act of recognition of the subject and the other is the act of affirming or denying the expression of the predicate about the subject. The latter judgment represents the simple recognition of an event. In (9), Transfer operation of phase heads generates these two types of sentence judgment. In (9a), a topicalized element *inu wa* (the dog), which is also subject, occupies the specifier of TopP, and its element and the predicate TP are not simultaneously Transferred in the same domain because the phase head Top triggers Transfer and the topicalized NP is in the edge of phase. This is illustrated in (10).

(10) $[_{TopP}$ Inu-wa $]$ $[_{TP}$ neko-o oikaketeiru$]]$
Transfer Transfer

The subject NP and the predicate TP are separately sent into the C-I interface and, in

this interface, two separate interpretations occur: one is the act of recognition of the subject and the other is the act of affirming or denying what is expressed by the predicate about the subject. Therefore, the structure of (10) generates a sentence judgment of these two separate acts, the categorical judgment. On the other hand, (9b) has the following structure.

(11) $[_{TP}$ Inu-ga neko-o oikaketeiru$]$
Transfer

In this case, the whole TP is interpreted as the simple recognition of an event, and therefore the structure of (11) generates the thetic judgment. The distinction between two types of sentence judgment depends on syntactic configurations. If the head Top is a phase head and triggers Transfer, a topicalized NP and its predicate are separately sent into the C-I interface, and therefore this operation produces the categorical judgment. In contrast, in (11), the head Foc does not appear in this syntactic derivation and does not trigger those two types of sentence judgment. Therefore, it follows from semantic properties of sentence judgment that the head Top is a phase head, not the head Foc.

First, let us consider the case where Top is introduced into derivations. In this case, Spell-Out occurs when Top probes a topic element in its complement and then attracts it to its specifier, transferring its complement FocP or FinP to PF (or SM interface), as shown in (12).

(12a) [TopP Top (⟦FocP Foc⟧ ⟦FinP Fin ⟦TP …
Transfer

Subsequently, Force merges with TopP and then Transfers it.

(12b) [ForceP Force [TopP Top…

Transfer

On the other hand, when Top does not occur in derivations, Force merges with FocP (or other phrases) and Transfers it as shown in (13).

(13) [ForceP Force ([FocP Foc) [FinP Fin [TP …

Transfer

In the next section, I will discuss empirical consequences of my proposal.

2.3. Deriving Asymmetries between Topicalization and Focalization

I will argue that my proposal provides a unified account of the three asymmetries between Topicalization and Focalization in English: island effects, head movements, and phonological boundaries.

2.3.1. Island Effects

When a topicalized element precedes a focalized element, Topicalization and Focalization can cooccur in the same main and embedded clauses as shown in (14).

(14) a. *This book*$_i$ **to ROBIN**$_j$ I gave t_i t_j. (Haegeman (2012: 31))

b. Becky said that *these books*, **only with great difficulty** can she carry.

c. He said that *beans*, **never in his life** had he been able to stand.

(Koizumi (1999: 141))

In (14), *this book*, *these books*, and *beans*, are topicalized elements, and, therefore, these occupy the specifier of TopP. On the other hand, **to ROBIN**, **only with great difficulty,** and **never in his life** are focalized elements since these have contrastive stress, the focus operator *only*, and the negative adverb *never*, and, therefore, these occupy the specifier of FocP.

However, when these word orders are reversed, these sentences will be ungrammatical, as shown in (15).

(15) a. *__To ROBIN__$_j$ *this book*$_i$ I gave t_i t_j. (Haegeman (2012: 31))

b. *Becky said that **only with great difficulty** can *these books* she carry.

c. *Becky said that **only with great difficulty** *these books* can she carry.

(Koizumi (1999: 141))

Rizzi's (1997, 2004) Cartographic approach can explain this order restriction because the split CP structure requires a topicalized phrase to precede a focalized phrase.

This approach, however, cannot account for one of the differences between Topicalization and Focalization. The former induces a syntactic island from which extraction of elements is banned, while the latter does not.[6] This is illustrated in the following examples:

(16) a. *On which table did Lee say that *these books* she will put?

b. On which table did Lee say that **only these books** would she put?

(17) a. *Which books did Becky say that *to Aaron* she will give?

b. Which books did Becky say that **only to Aaron** will she give?

(18) a. *This is the book that John said that *Mary*$_i$ he would inform t_i that I had read.

b. This is the book that John said that **only Mary**$_i$ would he inform t_i that I had read.

(Koizumi (1999: 141))

In Rizzi (2004), this intervention effect is analyzed by *Relativized Minimality* (RM). Extending Rizzi (1990) and following Starke (2001), he defines RM as show in (19) and (20).

(19) ... X ... Z ... Y ...

(20) Y is in a Minimal Configuration (MC) with X iff there is no such Z that

(i) Z is of the same structure type as X, and

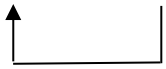
(ii) Z intervenes between X and Y.

(Rizzi 2004: 225)

Rizzi (2004) proposes that local relations must be satisfied in a minimal configuration, the smallest configuration in which they can be satisfied. In (21), violations of RM occur when Z intervenes X between X and Y, where Z has the same feature that X and Y do.

(21) a. X … Z… Y …

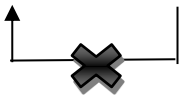
[α] [β] [α]



OK

b. X … Z… Y …

[α] [α] [α]



c. X … Z… Y …

[α+β] [α] [α+β]

OK

In (21a), when X and Y are related in MC, Z intervenes between X and Y, but Z does not have the same feature [α] and has only the feature [β]. Therefore, this case does not violate RM. In (21b), the configuration violates RM because Z has the same feature [α] that X and Y have and MC between X and Y cannot be satisfied by intervention of Z. In (21c), X, Y, and Z have the same feature [α] while only X and Y have the other feature [β]. For the feature [α], Z is the intervener between X and Y, and the violation of RM occurs, but, for the feature [β], since Z does not have the feature [β], Z is not. Therefore, this configuration satisfies MC between X and Y, and does not cause the violation of RM. Rizzi (2004) also classifies the structure types as the feature classes as shown in (22).

(22) a. Argument: person, number, gender, case

b. Quantificational: Wh, Neg, measure, focus ...

c. Modifier: evaluative, epistemic, Neg, frequentative celerative, measure, manner ...

d. Topic

(Rizzi 2004: 243)

According to this classification, however, Rizzi (2004) wrongly predicts that while (16a), (17a), and (18a) are grammatical, (16b), (17b), and (18b) are not, because *wh*-elements and focalized elements belong to the same feature class of the intervention effect on RM.[7] Therefore, Cartographic approach of Rizzi (2004) cannot account for the problem of how Topicalization induces an island effect and Focalization (Neg-Preposing) does not.

This obvious problem with the Cartographic approach is solved by my proposal. When Topicalization occurs in an embedded clause, Top triggers Transfer and then sends its complement to the two interfaces: LF and PF. Then, the complement will be inaccessible to further syntactic operations due to the following Phase Impenetrability Condition (PIC) proposed by Chomsky (2000):

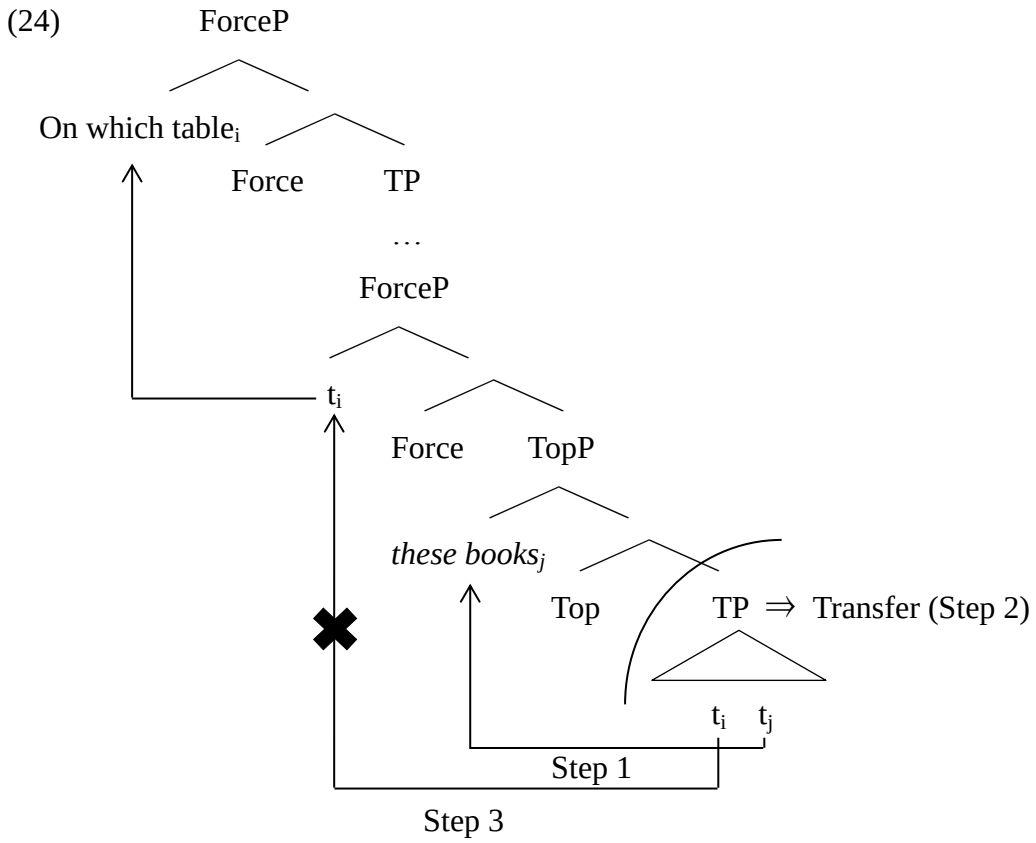
(23) Phase Impenetrability Condition

In phase P with head H, the domain of H is not accessible to operations outside P and only H and its edge are accessible to such operations.

(Chomsky (2000: 108))

Given PIC, let us consider the derivation of (16a). The proposed analysis gives this

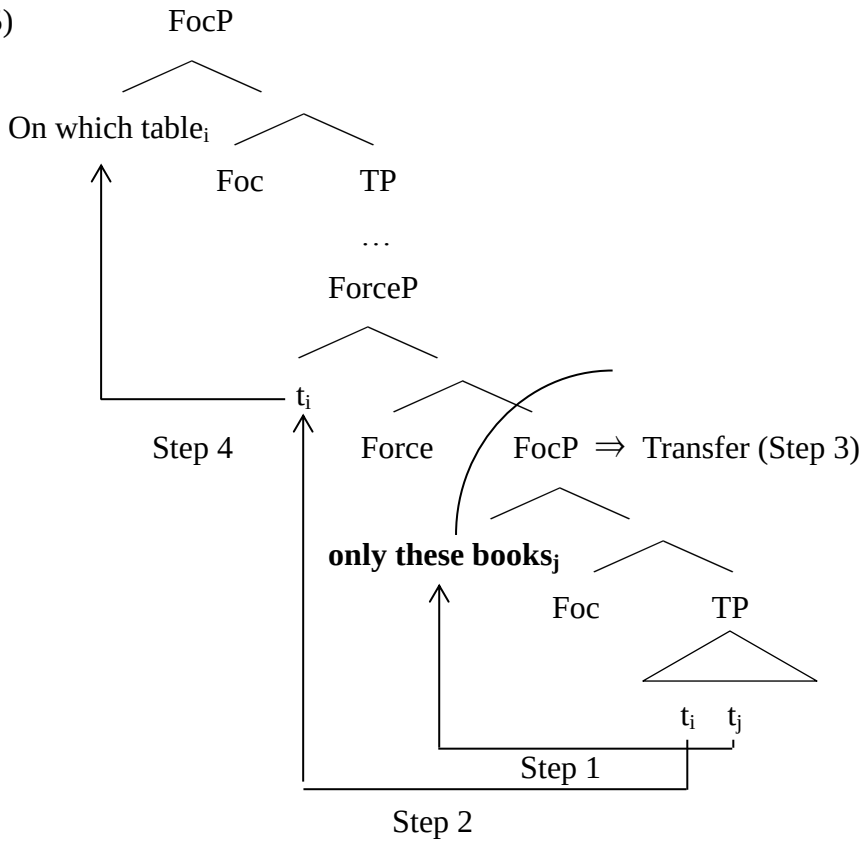
sentence the following structure (24).



In (24), first, in step 1, the head Top attracts *these books* to the specifier of TopP. Second, in step 2, the head Transfers TP. Finally, in step 3, *on which table* tries to move to the specifier of ForceP, but this movement violates PIC. Consequently, this sentence is ungrammatical.

On the other hand, when Focalization occurs in an embedded clause, Foc as a non-phase head does not trigger Transfer of its complement which will be accessible to further syntactic operations. Therefore, *on which table* can be extracted from the embedded clause. For example, the proposed analysis gives (16b) the following structure (25).

(25)



In Step 1, Foc attracts **only these books** to the specifier of FocP. Then, in Step 2, *on which table* moves into the specifier of ForceP, which serves as an escape hatch. Finally, in Step 3, Force Transfers FocP. The *wh*-element at the specifier of ForceP is accessible to the attraction of Foc in the matrix clause (Step 4). Thus, this sentence is grammatical.

Note that my analysis can account for the classic cases of *wh*-island violations such as (26).

(26) a. * What$_i$ did John wonder [who would win t_i]?

b. * What$_i$ did John wonder [$_{\text{ForceP}}$ who$_j$ Force [$_{\text{TP}}$ t_j would win t_i]?

(26) shows that, in the embedded clause, the subject *wh*-phrase *who* occupies the

specifier of ForceP because the verb *wonder* selects the *wh*-clause as its complement and this requirement is satisfied by movement of the *wh*-phrase into the specifier of ForceP. In this case, the object *wh*-phrase *what* cannot move into the landing site of matrix clause because the specifier of ForceP as escape hatch is occupied by *who* and *what* cannot be extracted by PIC.

In this subsection, I have shown that my proposal explains the asymmetry of island effects between Topicalization and Focalization.

2.3.2. Head Movement

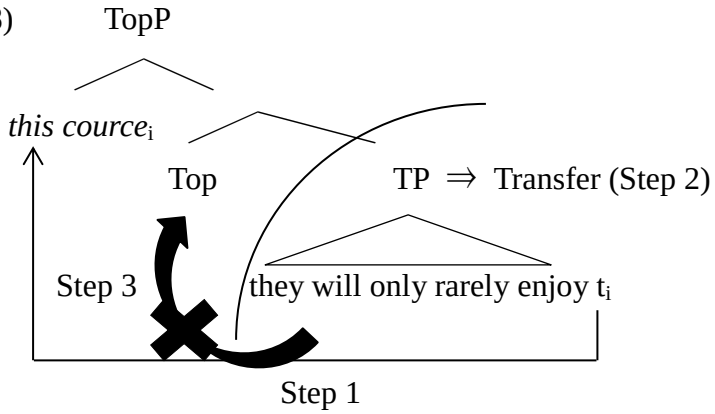
Let us turn to the second asymmetry between Topicalization and Focalization. Focalization can cause Subject-Aux Inversion (SAI) in embedded clauses, whereas Topicalization cannot. Let us consider (27).

(27) a. * Jobs admitted [that *this course* will they only rarely enjoy]

b. Jobs admitted [that **only rarely** will they enjoy this course]

We can explain this asymmetry under the assumption that head movement (HM) is applied at PF after all syntactic operations have applied (see Boeckx and Stjepanović (2001), Chomsky (1995, 2001), Platzack (2013)).[8] To apply HM at the PF, a moved element and its landing site must be in the same Spell-Out domain. Given this assumption, (27a) has the following structure (28).

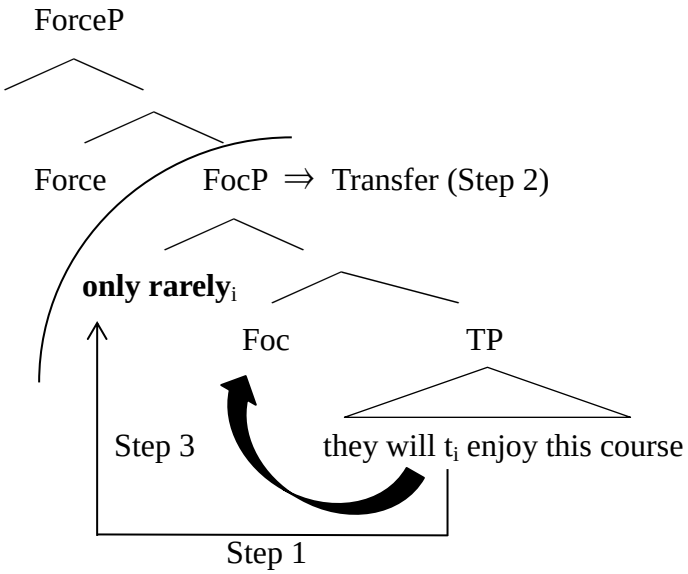
(28)



First, Topicalization occurs (Step 1), and then, the phase head Top triggers Transfer and sends its complement TP to the PF (Step 2). After Top triggers Transfer, the moved element *will* and the landing site Top are not in the same Spell-Out domain. Hence, the auxiliary verb *will* in TP cannot move into Top in the next Spell-Out domain (Step 3).

On the other hand, (27b) has the derivation as shown in (29).

(29)



First, Focalization occurs (Step 1) and, then the phase head Force merges with FocP and

Transfers it into PF (Step 2). In this case, the auxiliary verb *will* in TP can move into Foc (Step 3) because the moved element *will* and the landing site Foc are in the same Spell-Out domain.

Before going on to the next subsection, I will note two points of HM. The first point is whether this HM is optional or not. My informant presents me with the following data.

(30) ? Jobs admitted [that **only rarely** they will enjoy this course]

Its acceptability is slightly worse than (27b), but fully better than (27a). It shows that this HM can be optional, and when it occurs, it affects some PF properties such as linear ordering.[9]

The second point is the case of V-to-*v* movement in English. Richards (2010) assumes that VP has the structure shown in (31).

(31) $[_{FP}$ F $[_{vP}$ Subj *v* $[_{VP}$ V Obj …

He names the functional head v_C and considers it to be a phase head, and therefore standard *v* is not a phase head. Adopting his assumption, I can analyse V-to-*v* movement in English with my proposal. In this case, a phase head is F, not *v*, and the phase head Transfers its complement *v*P so that V and *v* are in the same Spell-Out domain at PF. Then, V-to-*v* movement occurs in the same way as the above case.[10,11]

In this subsection, I have shown that my proposal explains the asymmetry of HM between Topicalization and Focalization.

2.3.3. Phonological Boundaries

There is a phonological difference between Topicalization and Negative Inversion, which is a type of Focalization, as shown in (32) and (33).

(32) Topicalization

a. *In some cases*, such a course can be justified merely by success.

(comma pause)

b. ?* *In some cases* such a course can be justified merely by success.

(no comma pause)

(33) Negative Inversion

a. **In no case** can such a course be justified merely by success.

(no comma pause)

b. ?* **In no case**, can such a course be justified merely by success.

(comma pause)

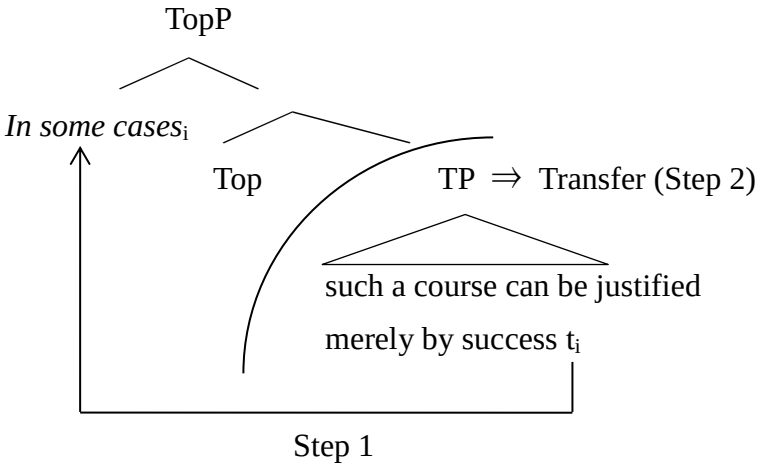
(Büring (2005: 2-3))

Topicalization in (32) must show a comma pause, while Negative Inversion in (33) must not.

This diffrence can be accounted for by my proposal about a phase head Top and Prosodic Hierarchy of Nespor and Vogel (1986). The latter derives prosodic domains from syntactic sturctures by mapping rules. For the sentence level, the rules map CP onto the Intonational Phrase (IntP) of Prosodic Hierarchy. According to Nespor and Vogel (1986), IntP also determines if there are pauses in sentences. Based on these assumptions, I predict that in the phonological interface, when Topicalization occurs, the topicalized element and the rest of the TPs form each IntP, whereas, in the case of Focalization, the whole sentence forms IntP. It is because when Topicalization

occurs, the phase head Top merges with TP and Transfers its complement TP into the PF. So, a topicalized element and the following sentence are not in the same Spell-Out domain, and each forms a separate domain as in (34).[12]

(34) a.

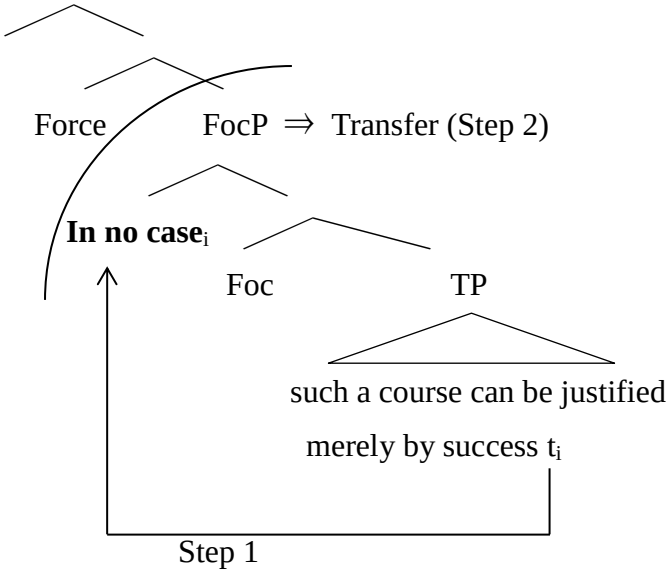


b. (*In some cases*), (such a course can be justified merely by success.)

c. ($_{IntP}$ *In some cases*), ($_{IntP}$ such a course can be justified merely by success.)

On the other hand, when Negative Inversion occurs, the non-phase head Foc merges with TP and does not Transfer. Then, Force merges with FocP and Transfer its complement FocP into the PF as in (35).

(35) a. ForceP



b. (**In no case** can such a course be justified merely by success.)

c. ($_{IntP}$ **In no case** can such a course be justified merely by success.)

Therefore, a focalized element and the following sentence are in the same Spell-Out domain and the whole sentence forms a single phonological domain. The phase head Top Transfers its complement so that topicalized sentences contain two separate IntPs. In contrast, the non-phase head Foc does not trigger Transfer so that focalized sentences have a single IntP. Consequently, Topicalization allows a comma pause between two IntPs, whereas Focalization does not.

Moreover, the same contrast between Topicalization and Focalization appears in (36) and (37).[13]

(36) Topicalization

a. *Fried eels*, I like to **EAT**.

b. ($_{IntP}$ *Fried eels*), ($_{IntP}$ I like to **EAT**).

(37) Focalization

a. Fried **EELS** I like to eat.

b. ($_{IntP}$ Fried **EELS** I like to eat).

When my proposal extends to the *v*P domain, the phase head *v* Transfers its complement VP so that subject DP is separated from the complement VP at PF. According to Nespor and Vogel (1986), I assume that these domains correspond to Phonological Phrase (PhP) of Prosodic Hierarchy and PhP is the domain of determining nuclear stress, not pauses in sentences.

(39) a. [$_{TP}$ John [$_{vP}$ *v* $\underbrace{[_{VP}\ \text{saw Mary}]}_{\text{Transfer}}$]]

b. ($_{PhP}$ John) ($_{PhP}$ saw Mary)

As shown in (39), there are some parallelisms between CP phase and *v*P phase, but each transfer domain forms different phrases at the PF, that is IntP and PhP. Therefore, these domains play distinct roles at PF.[14, 15]

In this subsection, I have shown that my proposal explains the asymmetry of phonological boundaries between Topicalization and Focalization.

2.4. Conclusion

In this chapter, I proposed that Top is a phase head and provided a unified account of the three asymmetries between Topicalization and Focalization: island phenomena, head movement, and phonological boundaries. The first property comes from the difference in phasehood between the two heads: the phase head Top Transfers

its complement into the two interfaces. Therefore, by PIC, syntactic islands are formed and SOs cannot be extracted from the complement, whereas the non-phase head Foc does not cause these phenomena. The second asymmetry is accounted for by considering whether the auxiliary undergoing SAI in PF and its landing site are in the same Spell-Out domain or not. The phase head Top triggers Spell-Out and separates the landing site from the candidate auxiliary, and therefore SAI cannot occur. The non-phase head Foc does not trigger Spell-Out and the candidate auxiliary and the landing site are in the same Spell-Out domain, and therefore SAI can be applied. The third asymmetry comes from the fact that since the phase head Top trigger Spell-Out, a phonetic boundary is formed. Therefore, comma intonation is imposed between a topicalized element and its complement TP. On the other hand, the non-phase head Foc does not trigger Spell-Out and produce this phonetic boundary.

Notes for Chapter 2

* This chapter is a revised version of Totsuka (2013) in *English Linguistics* (*EL*) 30.

1. Note that Rizzi (2004) revises the structure of the left periphery as in (i).

(i) CP = [ForceP [TopP* [IntP [TopP* [FocusP [ModP* [TopP* [FinP [TP …

In this structure, * means that the projection can be recursive. IntP is the position in which *wh*-elements such as "*why*" can occur. ModP is the position of some types of adverbs. He derives this structure from the principle of locality, Relativized Minimality (RM), but I will not adopt this here.

2. In Present-day English, Topicalization cannot occur in infinitival CP clauses. I address this issue in chapter 4.

3. In languages like Italian, TopP can be recursive. It is important to consider this difference between English and Italian based on parametric variation across languages, but I will focus on English in this chapter and will not argue about this point.

4. Thanks to an anonymous *EL* reviewer for reminding me of this point.

5. Belletti (1999) argues that the postverbal subject as Info Focus moves into the specifier of FocP in VP in order to check the Focus feature. It is interesting to examine the difference between Kiss's (1998) argument about Info Focus and Belletti's (1999),

but I will not address this issue because I focus on ID Focus in this thesis.

6. An anonymous *EL* reviewer points out that Rizzi (2004) argues that topicalized elements do not always induce syntactic islandhood in Italian. As Bianchi and Frascarelli (2010) show, topic elements are divided into three types: *Aboutness-shift Topic*, *Contrastive Topic*, and *Given Topic*. First, Aboutness-shift Topic is to propose or reintroduce a new topic in the discourse as shown in (i).

(i) *l'ultima unit*$_k$ *la*$_k$ *sto* *facendo*
the last unit it.CL be.PRES.1SG do.GER
'The last unit, I'm doing it now.'

Second, Contrastive-Topic introduces alternatives in the discourse and refers to contrastive relations with oppositional pairs in the discourse as shown in (ii).

(ii) ***francese***$_k$ l$_k$' ho fatto alle medie per tre anni
French it.CL have.1SG done at.the school for three years
con l'inglese mi son trovata sempre a disagio
with the English me.CL be.1SG found.F always uneasy
'French I have studied at school for three years [...] with English I never felt at ease.'

Third, Given-Topic is used to resume background information in the discourse or reintroduce topicalized elements which continues in the discourse as shown in (iii).

(iii) ***l'autoapprendimento*$_{\mathbf{k}}$ *questo*$_{\mathbf{k}}$** *non me l' ha*$_{\mathrm{k}}$ *dato*
self-learning this not to-me it.CL have.3SG give.PART
'Self-learning did not give this to me.'

Inducing syntactic islandhood may depend on the type of topic. I leave this issue for future research.

7. An anonymous *EL* reviewer asks whether ID Focus or Info Focus is involved in the argument about island effects. In this chapter, I focus on ID Focus as shown above and it does not induce an island effect.

8. Chomsky (2001) points out properties of HM as shown in (i) (the list is quoted from Funakoshi (2014: 2)).

(i) a. Head movement lacks sematic effects.
b. Head movement is countercyclic.
c. The moved head does not c-command its trace.
d. There is no theoretical apparatus to predict when phrasal movement takes place and when head movement takes place.
e. Head movement observes locality conditions different from phrasal movement.
f. Head movement is an adjunction rule, by which moving head is adjoined to the target head.
g. Head movement is not successive-cyclic (no excorporation).

Whether HM is a PF movement or not is still controversial. Funakoshi (2014) and Roberts (2010, 2011) argue that HM is a syntactic movement. In this chapter, however I will not discuss this issue.

9. Thanks to an anonymous *EL* reviewer for pointing out this.

10. Thanks to an anonymous *EL* reviewer for pointing out this.

11. An anonymous *EL* reviewer points out that there is verb raising in French, which is commonly described in the literature as the movement of V to T. Consider the sentence from French in (i).

(i) Je mange souvent des pommes.
I eat often of.the apples
'I often eat apples.'

(Carnie (2007: 246))

Verb *mange* 'eat' appears to the left of adverb *souvent* 'often' in French. In the contrast to English, I assume that French has a strong feature of T, which triggers V-to-T movement in syntax. It is important to examine this parametric difference across languages. I leave this issue for future research.

12. An anonymous *EL* reviewer asks whether a comma (pause) must be applied or can be optional whenever Transfer occurs and forms separate Spell-Out domains. As mentioned above, it must be applied in the case of Topicalization at the level of IntP.

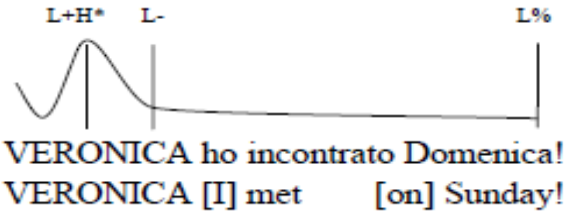
But I do not understand other phenomena that involve in the interaction between comma pause and IntP, so I leave this for future research.

13. Thanks to Masao Okazaki (personal communication) for suggesting this point to me.

14. For *v*P domains, see Kratzer and Selkirk (2007).

15. In accordance with Bocci (2007, 2013), Rizzi (2009) shows that the heads Top and Foc in Italian determine the intonational contour of sentences: Top assigns downward intonational contour to sentences, whereas Foc assigns flat intonational contour to sentences.

(i) Topicalization

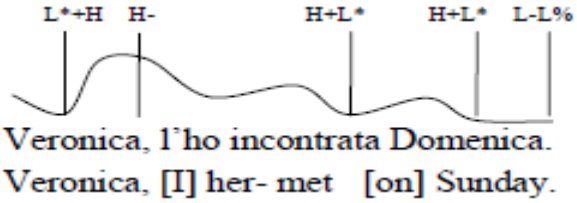


(*Veronica*), (l'ho incontrata Domenica)

'*As for Veronica*, I met her on Sunday.'

(Bocci (2007: 40))

(ii) Focalization



(**VERONICA** ho incontrato Domenica)

'**VERONICA** I met on Sunday (, not Lucia)!'

(Bocci (2007: 39))

In my proposal, Top and Foc, as Rizzi (2009) points out, determine each intonational contour because IntP is the domain of determining intonational contour and pauses of sentences. When Transfer occurs, Top signals that downward intonational contour is assigned to IntP which is not involved in Top. In the case of Foc, the whole sentence becomes IntP and so flat intonational contour is assigned in the domain. Therefore, the intonational contours of sentences depend on functional heads in IntPs.

Chapter 3

On Force Head of Root CP Clauses

3.1. Introduction

In this chapter, I will explorer the property of the head Force in root CP clauses. I showed in chapter 2 that the head Force is a phase head, which triggers Transfer and sends its complement into the two interfaces. However, in root CP, the highest projection ForceP remains untransferred. In particular, I will focus on the cases in which the head Force and the specifier of Force in root CP are not Transferred at the point of the convergence of derivations. The untransferred head and edge are not sent into the two interfaces and, specifically not sent into the PF interface and therefore are not pronounced. In what follows, I will show that these cases do exist as a number of syntactic phenomena: Aux-drop, gapping, particle-stranding ellipsis in Japanese, German Topic-drop, and Subject-drop in English.

This chapter is organized as follows. Section 2 overviews two previous approaches to Aux-drop: Fitzpatrick (2006) and Schirer (2008) and point out their problems. Section 3 shows that my proposal solves these problems. In section 4, my proposal gives a unified account of other syntactic phenomena. Section 5 concludes this chapter.

3.2. Aux-drop

In this section, I discuss two previous approaches to the phenomenon called Aux-drop: Fitzpatrick (2006) and Schirer (2008).

3.2.1. Fitzpatrick (2006)

Fitzpatrick (2006) focuses on the phenomenon called Aux-drop exemplified in (1).[1]

(1) a. Anybody want a hot dog? (cf. Does anybody want a hot dog?)
b. Anyone seen John today? (cf. Has anyone seen John today?)
c. Anybody going to the game? (cf. Is anybody going to the game?)

In these sentences, fronted auxiliaries are not pronounced, but these have interpretations of *yes-no* questions. Aux-drop has three properties: (a) it only occurs in root CP, (b) it is not always allowed whenever subject-aux inversion (SAI) is involved, as shown in (2).

(2) *Constituent Questions*

a. Who *(does) everyone like?

b. When *(did) everyone wake up?

*Focus/Negative Inversio*n

c. Only Mary *(does) everyone like,

d. Not a single professor *(does) everyone like.

VP Ellipsis Inversion

e. I don't like candy corn, and neither *(does) any one of you.

f. I like gazpacho, and so *(do) you.

Exclamative Inversion

g. Boy, *(are) you dirty!

Counterfactual Inversion

h. *(Were) he a better speaker, John would probably win the election.

(Fitzpatrick (2006: 402))

Finally, (c) the recoverability condition, which limits deletion to items that are recoverable from context, does not guarantee its application, as shown in (3).

(3) a. Someone *(will) go *tomorrow*.

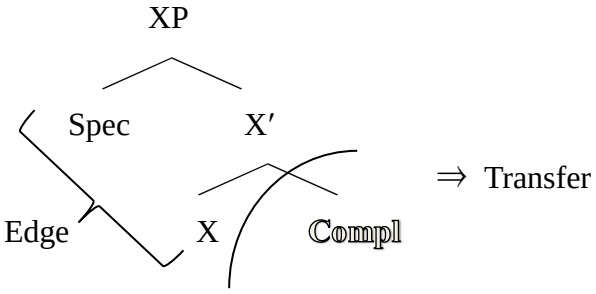
b. Someone *(has) *been* in my office.

(Fitzpatrick (2006: 401))

In (3), deleted auxiliaries are recoverable from the future adverb *tomorrow*, which indicates futurity, or the *–en* morphology on *be*, which indicates the perfect aspect, but Aux-drop cannot be applied.[2]

Fitzpatrick (2006) derives these properties of Aux-drop from cyclic transfer of the phase theory developed in Chomsky (2000, 2001). Syntactic objects (SOs) built by Merge are mapped onto the semantic interface of the Conceptual-Intentional system (C-I) and the phonological interface of the Sensorimotor system (SM). The operation which maps SOs onto these two interfaces is called Transfer (in particular, mapping SOs onto the phonological side is called Spell-Out). Chomsky (2004, 2007, 2008) assumes that Transfer applies by syntactic derivational units which are called phases. In this phase theory, syntactic computations are derivationally proceeded by application of iterating Merge and Transfer phase by phase. Phases are assumed to be CP and *v*P, whose heads trigger Transfer.

(4)



[Phase Head＝C, *v*]

Under this theory, Fitzpatrick (2006) explains the derivation of Aux-drop as in (5).

(5) a. Relevant pre-SAI structure: [$_{TP}$ … AUX …]

b. Merge C: [$_{CP}$ C [$_{TP}$ … AUX …]]

c. Move AUX (SAI): [$_{CP}$ AUX-C [$_{TP}$ … (AUX) …]]

d. Spell out CP, interpret TP: [$_{CP}$ AUX-C $\underbrace{[\![_{TP} \ldots (AUX) \ldots]\!]}_{\text{Transfer}}$]

NOT Transfer

(Fitzpatrick (2006: 419))

At the root CP, when the phase head C merges with TP, AUX moves into the head C from the head T. Then, C transfers its complement TP to the C-I and SM interfaces. This time, the head C and Spec of CP are not transferred and remain in the syntactic derivation, and the derivation converges. Therefore, Aux in the head C cannot contribute to pronunciation at PF (the SM interface) and interpretation at LF (the C-I interface). His proposal can account for the three properties of Aux-drop noted above because the raised auxiliary can remain untransferred only in the root CP. Furthermore, this omission of an initial auxiliary in questions is not due to phonological or even syntactic deletion, but rather the result of the peculiar properties of the root, which allow an auxiliary to move outside of the domain in which it would be phonologically and semantically interpreted.

However, there is a serious problem with this analysis. Fitzpatrick (2006) notes that only the TP is sent to PF and LF under his theory as shown in standard *wh*-questions in (6).

(6) What$_i$ did $\underbrace{[\![_{TP} John (T) see DP_i]\!]}_{\text{Transfer}}$?

NOT Transfer

(Fitzpatrick (2006: 421))

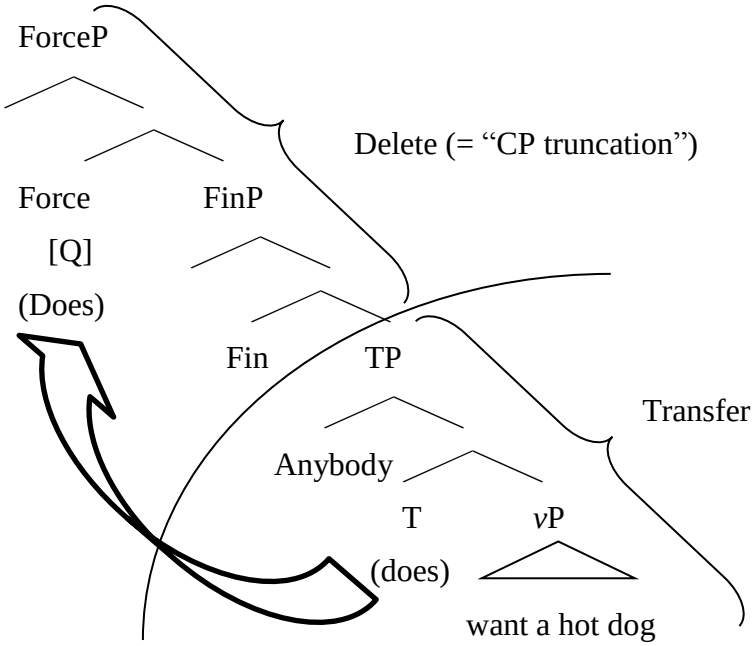
In this case, *what* and *did* in (6) are never pronounced and interpreted because these two SOs are not transferred into the two interfaces. However, these are pronounced and interpreted. Therefore, his theory incorrectly predicts that standard *wh*-questions are always uninterpretable.

3.2.2. Schirer (2008)

Schirer (2008) proposes "CP truncation," by way of which the whole projections above TP are deleted before the sentence is sent to PF (the SM interface). He claimed that when this operation occurs, any elements which have moved to the left periphery in sentences will not be pronounced. In his proposal, the derivation of (1a) is shown in (7), based on Cartographic approach (Rizzi (1997)).

(7) a. Anybody want a hot dog? (cf. Does anybody want a hot dog?)

b.



First, the auxiliary *does* moves into the head Force.[3] Second, the process "CP truncation" occurs and the whole projections above TP, FinP and ForceP, are deleted as

shown in (8).

(8) ~~[~~$\underbrace{\text{~~[}_{\text{ForceP}}\text{ Does [}_{\text{FinP}}\text{ Fin~~}}$ [$_{\text{TP}}$ Anybody want a hot dog?]~~]~~]

Delete (= "CP truncation")

As a result, while FinP and ForceP are not sent to the PF interface and will not be pronounced, TP are sent to the PF interface and will be pronounced.

Schirer (2008) also argues that "CP truncation" cannot freely apply to root CP clauses. For example, standard *wh*-questions cause serious problems for "CP truncation." *Wh*-elements and auxiliaries normally move into the left periphery of sentences. These are in the CP domain and, therefore, are deleted by "CP truncation." In this case, when "CP truncation" applies, the resulting sentence becomes ungrammatical as shown in (9)-(11).

(9) a. [$_{\text{CP}}$ Who is [$_{\text{TP}}$ winning the race?]]

b. *[$_{\text{CP}}$ Who ~~is~~ [$_{\text{TP}}$ winning the race?]]

c. *[$_{\text{CP}}$ ~~Who is~~ [$_{\text{TP}}$ winning the race?]]

(10) a. [$_{\text{CP}}$ Who do [$_{\text{TP}}$ you like?]]

b. ?[$_{\text{CP}}$ Who ~~do~~ [$_{\text{TP}}$ you like?]]

c. *[$_{\text{CP}}$ ~~Who do~~ [$_{\text{TP}}$ you like?]]

(11) a. [$_{\text{CP}}$ When do [$_{\text{TP}}$ you eat dinner?]]

b. ?[$_{\text{CP}}$ When ~~do~~ [$_{\text{TP}}$ you eat dinner?]]

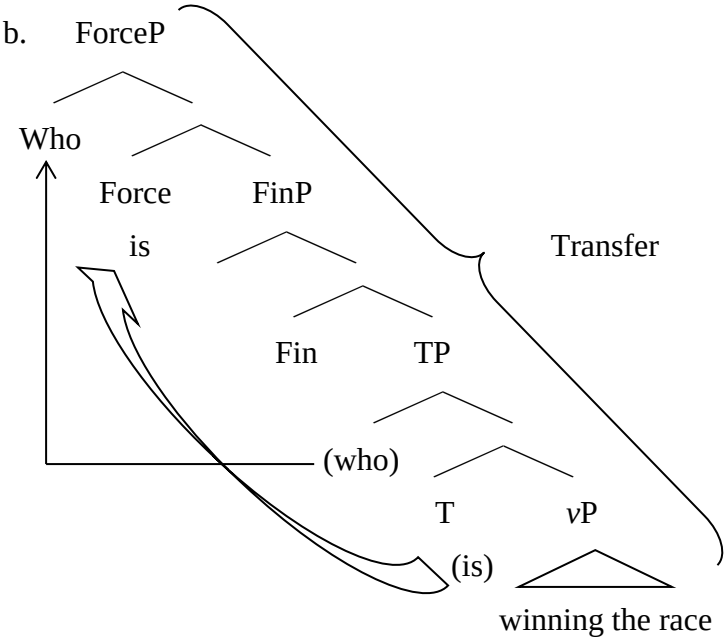
c. *[$_{\text{CP}}$ ~~When do~~ [$_{\text{TP}}$ you eat dinner?]]

(Schirer (2008: 16))

In these sentences, subject *wh*-phrases, object *wh*-phrases, and adjunct *wh*-phrases cannot be deleted.[4] Schirer (2008) claims that "CP truncation" is blocked when deleted elements are semantically contentful such as *wh*-elements. These elements cannot be recovered from context once they are deleted. This derivation is shown in (12).

(12) a. Who is winning the race?

b.



In contrast to (7), in (12), the *wh*-element *who* and the auxiliary *is* will not be deleted by "CP truncation" as mentioned above and Transfer applies to the whole sentence, and, therefore, these elements must be pronounced.

Schirer (2008) also explains that modal auxiliaries cannot be deleted by "CP truncation" because they are semantically contentful like *wh*-elements. The contrast between modal auxiliaries *will*, *should*, and *can*, and perfect *have*, progressive *be*, and auxiliary *do* is shown in (13)-(18)

(13) a. Will you go to the store?

b. *You go to the store?

(14) a Should you feed the dog?

b. *You feed the dog?

(15) a. Can you read the book?

b. *You read the book?

(16) a. Have you finished your homework?

b. You finished your homework?

(17) a. Are you watching the game?

b. You watching the game?

(18) a. Do you like ice cream?

b. You like ice cream?

(Schirer (2008: 22))

Modal auxiliaries in (13)-(15) have semantic interpretations which cannot be recovered from context, and, therefore, “CP truncation” is blocked.

However, there are some problems with this analysis. First, Schirer (2008) mentions that in standard *wh*-questions, *wh*-elements move into the specifier of ForceP, which is the highest projection in the Split CP structure, and his theory predicts that any other elements cannot move over this projection ForceP because there is no projection above it. Furthermore, when topicalized elements and *wh*-elements co-occur in the same sentence, the linearized order <Wh, Topic> is only grammatical. His prediction, however, is not born out as shown in (19).

(19) a. *To Leonard* **what** should we say on his birthday?

b. ***What** to Leonard* should we say on his birthday?

(Gelderen (2004:43))

In this case, the linearized order <Topic, Wh>, instead of <Wh, Topic>, is grammatical, and, therefore, it is incorrect to assume that *wh*-elements move into the specifier of ForceP, which is the highest projection in the Split CP structure.

Second, he argues that elements which are semantically contentful, like *wh*-elements, cannot be deleted by "CP truncation" since these interpretations cannot be recovered from context. Given his theory, we predict that if these interpretations are restored from context, "CP truncation" could be applied. However, Fitzpatrick (2006) points out that, in the case of Aux-drop, the recoverability from context does not guarantees its application, as shown in (20).

(20) *(Will) anyone play the piano at the party tomorrow?

(Fitzpatrick (2006: 412))

In (20), deleted auxiliaries are recoverable from the adverb *tomorrow*, which indicates future, but Aux-drop cannot be applied. The data shows that Schirer (2008) has a problem of the applications for "CP truncation."

3.2.3. Interim Summary

In this section, we showed that for the analysis of Aux-drop, Fitzpatrick (2006) has a problem of Transfer in standard *wh*-question, and Schirer (2008) has two problems of the landing site of *wh*-elements and the application for "CP truncation."

In the next section, I present my proposal to solve these problems.

3.3. Proposal

As in the previous chapters, following Cartographic approach (Rizzi (1997)), I adopt the Split CP hypothesis, where CP is not a single projection, but layered projections. In particular, I assume that CP has the following structure.

(21) CP = [ForceP [TopP [FocP [FinP [TP ...

(21) assumes that each projection has a single projection and cannot be recursive in English.

Given the split CP structure, I propose that two functional heads Top and Force are phase heads, trigger Transfer, and form Spell-Out domains. Force is the highest head of the C-domain and has the same function of standard C as a phase head. Therefore, it is a phase head. For Top, topic-comment relation is a sort of predication and its predication is established when a topicalized element and the rest of sentence are Transferred separately. Therefore, Top is a phase head, Transfers its complement TP, and forms a distinct phase domain. On the other hand, focus-presupposition relation is a sort of quantification such as operator-variable binding (see Rizzi (1997)). This relation is established when operator and its variable are in the same domain, and therefore Foc is not a phase head.

Now let us see how our proposal can solve the problem with Fitzpatrick (2006) noted at the end of section 2.1. First, let us consider the case where Top is introduced into derivations. In this case, Spell-Out occurs when Top probes a topic element in its complement and then attracts it to its specifier, transferring its

complement FocP or FinP to PF (or SM interface), as shown in (22).

(22) [$_{TopP}$ Top ($\underbrace{[_{FocP}\ Foc)\ [_{FinP}\ Fin\ [_{TP}\ \ldots}_{Transfer}$

Next, Force merges with TopP and then Transfers it, as shown in (23).

(23) [$_{ForceP}$ Force $\underbrace{[_{TopP}\ Top \ldots}_{Transfer}$

In the contrast to the case above, when Top does not occur in derivations, Force merges with FocP (or other phrases) and Transfers it as shown in (24).

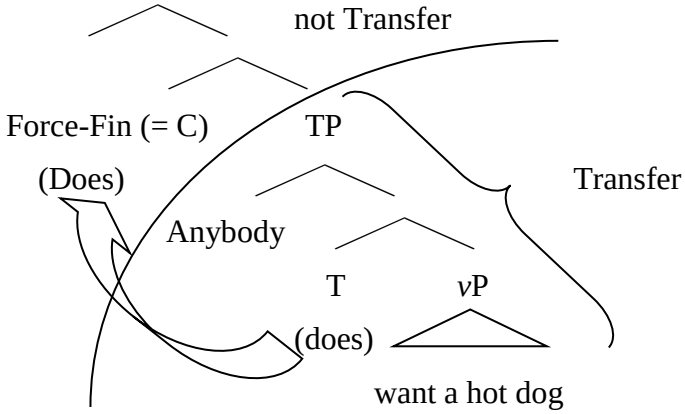
(24) [$_{ForceP}$ Force ($\underbrace{[_{FocP}\ Foc)\ [_{FinP}\ Fin\ [_{TP}\ \ldots}_{Transfer}$

In what follows, I focus on a Force head because this head has an important role of the derivation of Aux-drop in root CP clauses. Under my proposal, the head Force and the specifier of ForceP in root clauses are not transferred into the C-I and SM interfaces. In other words, the SOs at the edge of ForceP are not transferred to the two interfaces. At the SM interface, these SOs at the edge of ForceP are not pronounced, and therefore Aux-drop occurs. At the C-I interface, these SOs of the edge are not transferred, but their copies are left in the transferred domain. These are interpreted at the interface, so Aux-drop has interpretations of *yes-no* questions.

By way of illustrations, let us first consider the derivation of Aux-drop.

(25) Anybody want a hot dog? (cf. Does anybody want a hot dog?)

(26) Force-FinP (= CP)



In this case, as in the case of (5) (as shown in (27) below), the auxiliary *does* moves into the head Force-Fin and then this head transfers its complement TP into the two interfaces. The auxiliary *does* is in the untransferred domain, and therefore it is not transferred into the two interfaces. Therefore, in the SM interface, it is not pronounced, but in the C-I interface, it is interpreted in terms of copy.

(27) a. Relevant pre-SAI structure: $[_{TP}$ … AUX …]

b. Merge C: $[_{CP}$ C $[_{TP}$ … AUX …]]

c. Move AUX (SAI): $[_{CP}$ AUX-C $[_{TP}$ … (AUX) …]]

d. Spell out CP, interpret TP: $[_{CP}$ AUX-C $\underbrace{[\![_{TP} \ldots (\mathbb{AUX}) \ldots]\!]}_{\text{Transfer}}$]

NOT Transfer

(Fitzpatrick (2006: 419))

Let us next consider the case such as (6) (repeated below as (28)), which is problematic for Fitzpatrick (2006)'s proposal.

(28) What$_i$ did [$_{TP}$ John (T) see DP$_i$]?

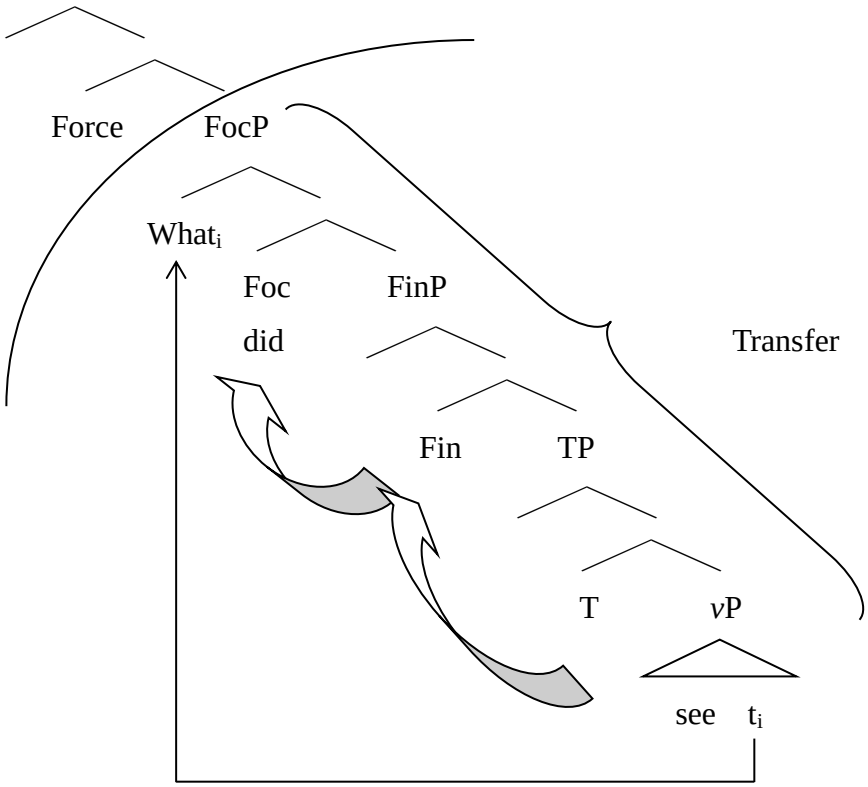
NOT Transfer Transfer

(Fitzpatrick (2006: 421))

His proposal incorrectly predicts that this sentence becomes ungrammatical because *what* and *did* are not transferred into the two interfaces and then these elements are not pronounced.

My proposal, however, can account for why this sentence becomes grammatical. The structure and the derivation of this sentence under my proposal is shown in (29).

(29) ForceP



What moves into the specifier of FocP and *did* moves into the head Foc. They are in

the transferred domain, and they are sent to the two interfaces. Therefore, this sentence is correctly pronounced. Furthermore, the auxiliary *did* cannot move into higher positions because such movement would cause criterial freezing effect (see Rizzi (2006)).

Let us next consider two problems with Schirer (2008): the landing site of *wh*-elements and the application for "CP truncation." The former problem is that in standard *wh*-questions, *wh*-elements move into the specifier of ForceP, which is the highest projection in the Split CP structure, and his theory predicts that other elements cannot move over the projection ForceP because there is no projection above it. Therefore, when topicalized elements and *wh*-elements co-occur in the same sentence, only the linearized order <Wh, Topic> is grammatical, but, his prediction is not born out as shown in (30).

(30) a. *To Leonard* **what** should we say on his birthday?

b. ***What** *to Leonard* should we say on his birthday?

(Gelderen (2004:43))

My proposal can account for the contrast in (30). As we saw above, following Rizzi (1997), we assume that CP has the structure of (21), where TopP precedes FocP in the linearized order. *Wh*-elements move into the specifier of FocP in the Split CP structure and toplicalized elements move into the specifier of TopP. Therefore, the linearized order <Topic, Wh>, not <Wh, Topic>, can be allowed in this case.

Let us discuss the second problem with Schirer (2008): the application for "CP truncation." His theory assumes that "CP truncation" cannot be applied when the

interpretation of deleted elements cannot be recovered from context. As we saw above, however, this operation is not guaranteed by the recoverability from context. My proposal can solve the problem with the application for "CP truncation." In his theory, "CP truncation" deletes projections above TP and, therefore, all elements which move into the left periphery are not transferred into the PF interface. On the other hand, my proposal assumes that only elements which move into the specifier of ForceP and the head Force can be deleted in terms of the edge property in the phase theory. This property is crucial for Aux-drop phenomenon. In (9)-(11) (repeated below as (31)-(33), which are slightly modified), *wh*-elements move into the specifier of FocP and auxiliaries, the head Foc. These positions are not the edge positions and must be transferred into the C-I and SM interfaces. As a result, Aux-drop has no special condition like the recoverability.

(31) a. [$_{FocP}$ Who is [$_{TP}$ winning the race?]]

b. *[$_{FocP}$ Who ~~is~~ [$_{TP}$ winning the race?]]

c. *[$_{FocP}$ ~~Who is~~ [$_{TP}$ winning the race?]]

(32) a. [$_{FocP}$ Who do [$_{TP}$ you like?]]

b. ?[$_{FocP}$ Who ~~do~~ [$_{TP}$ you like?]]

c. *[$_{FocP}$ ~~Who do~~ [$_{TP}$ you like?]]

(33) a. [$_{FocP}$ When do [$_{TP}$ you eat dinner?]]

b. ?[$_{FocP}$ When ~~do~~ [$_{TP}$ you eat dinner?]]

c. *[$_{FocP}$ ~~When do~~ [$_{TP}$ you eat dinner?]]

(Schirer (2008: 16))

In this section, I have presented my alternative analysis to solve the problems

with Fitzpatrick (2006) and Schirer (2008) pointed out in section 2.

3.4. Further Consequences

In this section, I demonstrate that my proposal can account for further syntactic phenomena: gapping, particle-stranding ellipsis in Japanese, German colloquial Topic-drop, and Subject drop in English.

3.4.1. Gapping

Gapping is a type of ellipsis in which a verb is removed in the second conjunct of a clausal coordinate structure, as shown in (34)

(34) Pete has got a video and John __ a DVD.

Gapping has some interesting properties. First, gapping is a root phenomenon:

(35) a. *Some had eaten mussels, and she claims that others __ shrimp.
(Gappping)

b. Some had eaten mussels, and she claims that others had __ shrimp.
(Pseudo-Gapping)
(Johnson 2009:293)

Gapping cannot apply to the embedded clause of (35a), while Pseudo-Gapping, which is not a root phenomenon, can target the embedded clause of (35b).

In addition to this, remnants of gapping have contrastive stress. If they do not have contrastive stress, the sentence becomes unacceptable as the contrast between

(36a) and (36b) shows.

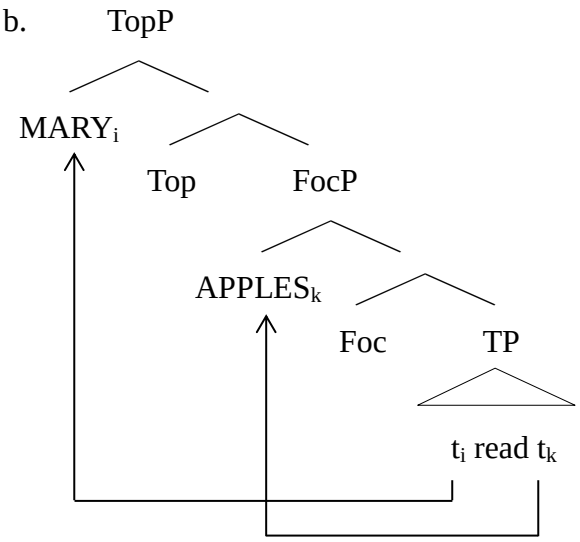
(36) a. John liked bananas and MARY __ APPLES.

b. *John liked bananas and MARY __ apples.

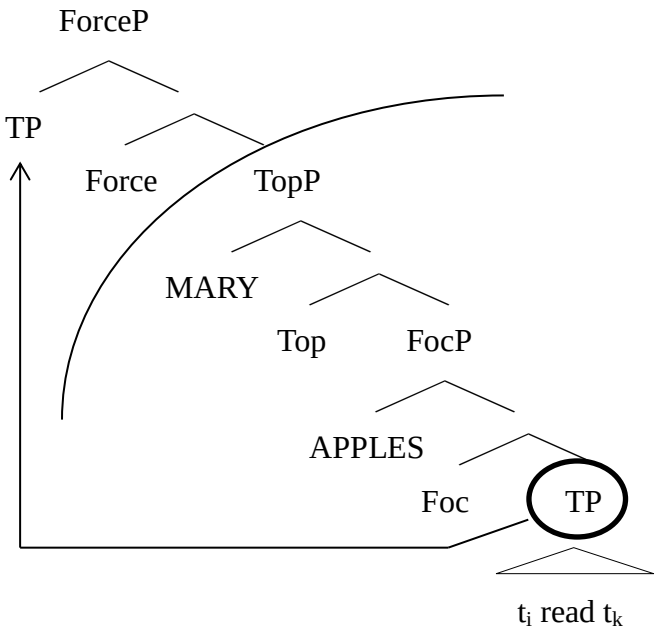
These properties strongly suggest that gapping can exhibit the phase-edge property in root CP parallel to those in the case of Aux-drop. Given these properties, I assume that remnants of gapping move into the left periphery of sentences because they must have interpretations of contrastive Topics and contrastive Focuses. This assumption gives gaping the following derivation

(37) a. John liked bananas and MARY __ APPLES.

b.



c.



Firstly, remnants of gapping move into the specifier of TopP and FocP. The moved remnants are interpreted as contrastive Topic and contrastive Focus. Secondly, the remnant TP [t_i *read* t_k] moves into the specifier of ForceP, respectively.[5] Finally, Force transfers its complement TopP and the head and specifier (that is, moved TP) of ForceP are in the untrasnferred domain. Therefore, since these are not sent to the SM interface, the TP is not pronounced but it is interpreted in terms of the copy.

3.4.2. Particle Stranding Ellipsis in Japanese

In this section, we consider Particle-Stranding Ellipsis (PSE) in Japanese, which is illustrated in (38):

(38) Speaker A Tanaka-kun wa?
Tanaka-TIT TOP
'How about Tanaka?'
Speaker B: Ø-Wa ne, kaisha-o yameta yo.
TOP TAG company-ACC quit EXCL
'Oh, (he) quit (his) company!'

(Sato (2012:495))

In this discourse, Speaker B recognizes *Tanaka-kun* in Speaker A's question as a topicalized element because it is an old information, and therefore he may reply without the topicalized NP. In Speaker B's answer, only the topic-marker *wa* is overtly pronounced. The topic-marker has an intonational boundary which is realized as comma intonation.

Sato (2011, 2012) observes three structural properties of PSE in Japanese. First, PSE in Japanese can only occur in the topic position.

(39) Speaker A: John-wa kyoo nani-o si-teiru no?
John-TOP today what-ACC do-TEIRU Q
'What is John doing today?'
Speaker B: a. Ø-wa, Mary-ni daigaku-de a-tteiru
TOP Mary-DAT university-LOC meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

b. *Mary-ni Ø-wa, daigaku-de a-tteiru
Mary-DAT TOP university-LOC meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

c. *Mary-ni daigaku-de Ø-wa, a-tteiru
Mary-DAT university-LOC TOP. meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

(Sato (2012:496))

In (39b,c), the word order is derived from the unmarked order of (39a), but these are ungrammatical.

Second, PSE in Japanese cannot occur in an embedded clause even when a topicalized element occupies the initial position in the embedded clause. This is illustrated in (40) and (41):

(40) Speaker A: John-wa sono-toki Taroo-o doo omotta no?
John-TOP that-time Taro-ACC how thought Q
'What did John think at that time about Taro?'
Speaker B: *John-wa sono-toki [$_{CP}$ Ø-wa, tensai-da-to]
John-TOP that-time TOP genius-COP-COMP
omotta yo.
thought TAG
'Intended: John thought at that time that Ø (=Taro) is a genius.'

(Sato (2011: 3))

(41) Speaker A: John-wa sono-toki Taroo-o dare-ga
John-TOP that-time Taro-ACC who-NOM
korosita-to omotta no?
killed-COMP thought Q
'Who did John think at that time that killed Taro?'
Speaker B: *John-wa sono-toki [$_{CP}$ Ø-wa, Mary-ga
John-TOP that-time TOP Mary-NOM
korosita-to] omotta yo.
killed-COMP thought TAG
'Intended: John thought at that time that Mary killed Ø (=Taro).'

(Sato (2012: 496))

Finally, PSE in Japanese cannot be applied to more than one NP in the root clause. This operation cannot target both of the subject and object NPs, which is

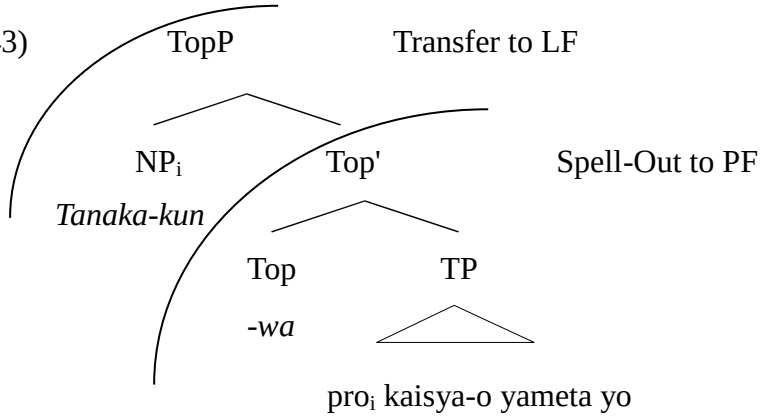
illustrated in (42):

(42) Speaker A: Kono-hito-wa John-o dare-ni
This-person-TOP John-ACC who-DAT
syookai-suru-tumori-na-no?
introduce-do-intend-COP-Q
'To whom does this person intend to introduce John?'
Speaker B: *Ø-wa, Ø-wa, Mary-ni
TOP TOP Mary-DAT
syookai-suru-tumori-nan-desu yo
introduce-do-intend-COP-POL EXCL
'Ø (=this person) intends to introduce Ø (=John) to Mary!'

(Sato (2012:497))

Sato (2011, 2012) accounts for these properties of the PSE in Japanese by thinking of it as an instance of Rizzi's (2005b) the Privilege of the Root Phenomenon and gives (38) the structure of (43):

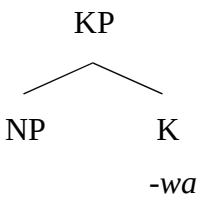
(43)



He assumes that the topicalized NP *Tanaka-kun* moves into the specifier of TopP and then Top' triggers Spell-Out. After Spell-Out operation occurs, the remaining TopP is transferred into LF. Therefore, this NP need not be pronounced and the entire structure can get semantic interpretation. His analysis, however, seems to face several questions. First, how is the topic-marker *wa* realized as comma intonation? Second, can intermediate projections be spelled-out in the current phase theory (Chomsky 2000 et seq.)?

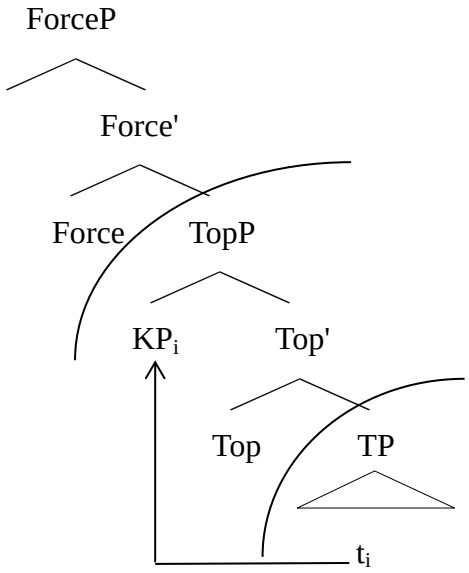
Let us see how my proposal can provide answers to these questions. I suppose that *wa*-phrases form KP.[6] The Topic-marker *wa* occupies the head of KP and the topicalized NP, the specifier of KP as shown in (44):

(44)

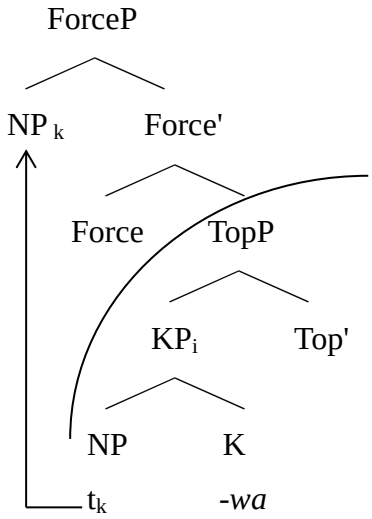


Under my proposal, the derivation of PSE is illustrated in (45).

(45) a.



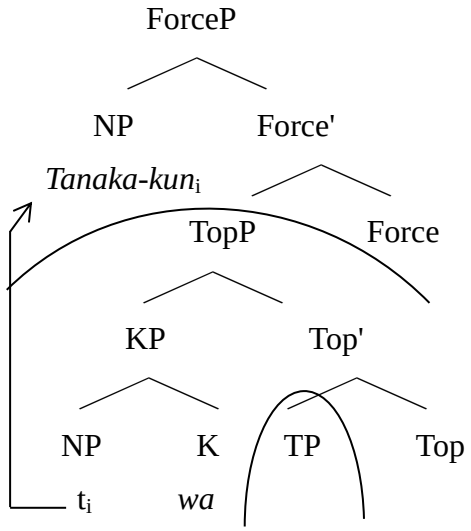
b.



First, Top probes a topic element in its complement and then attracts it to its specifier position, transferring its complement TP to the two interfaces. Second, when Force merges, it triggers Transfer and its complement TopP is sent to the two interfaces. At the same time when Force merges, the topicalized NP moves into the specifier of ForceP and transfer is applied to the complement ForceP. Finally, this NP is not transferred and only the particle *wa* is sent to the PF interface. Therefore, when this sentence is pronounced, only the particle *wa* is pronounced, but not the whole KP.

Now, let us consider what structure may analysis gives to (38). Given (45), this derivation is illustrated in (46).

(46)



Since syntactic derivations of the sentence converge, the topicalized NP remains in the position and is not sent to the SM interface. Therefore, the NP is unpronounced and PSE in Japanese is generated. My analysis can settle the two questions about Sato's analysis. First, in my analysis, the topic-marker *wa* occupies Top and this position is outside the Spell-out domain which includes the complement TP. Therefore, there is a phase boundary between TopP and TP, and so the topic-marker *wa* has an intonational boundary which is realized as comma intonation. Second, along with the phase theory (Chomsky 2000 et seq.), my analysis does not adopt the Transfer of intermediate projections. In (43), the intermediate projection, Top', is spelled-out to PF interface, but it must be stipulated that Spell-Out, or Transfer, is applied to intermediated projections, though its operation is normally implemented in complements, or XP, in the phase theory. In my proposal, however, this stipulation is not required.

Furthermore, as we saw above, PSE in Japanese has three structural

properties: it occurs in the topic position, cannot occur in embedded clauses, and can occur only once in root clauses. Under my proposal, given the structure of (45), I can account for these properties.

First, in (39) (repeated as (47) below), PSE in Japanese can only occur in the topic position, and therefore it moves into the specifier of TopP, which is located in the left periphery.

(47) Speaker A: John-wa kyoo nani-o si-teiru no?
John-TOP today what-ACC do-TEIRU Q
'What is John doing today?'

Speaker B: a. Ø-wa, Mary-ni daigaku-de a-tteiru
TOP Mary-DAT university-LOC meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

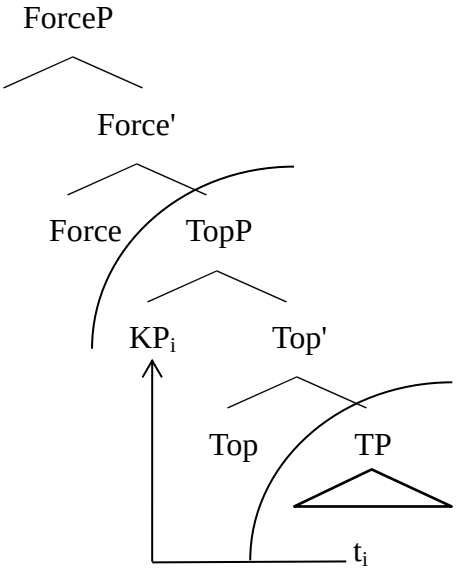
b. *Mary-ni Ø-wa, daigaku-de a-tteiru
Mary-DAT TOP university-LOC meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

c. *Mary-ni daigaku-de Ø-wa, a-tteiru
Mary-DAT university-LOC TOP. meet-TEIRU
ne.
TAG
'Intended: Ø (=John) is meeting Mary at a university.'

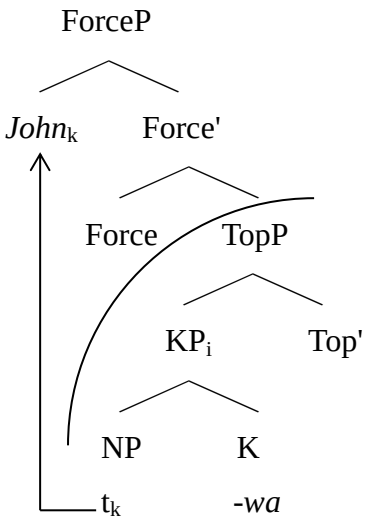
(Sato (2012:496))

The sentence (47a) has the following structures:

(48) a.

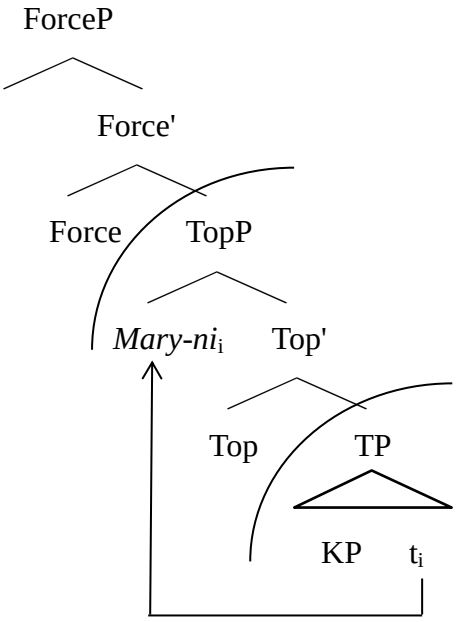


b.

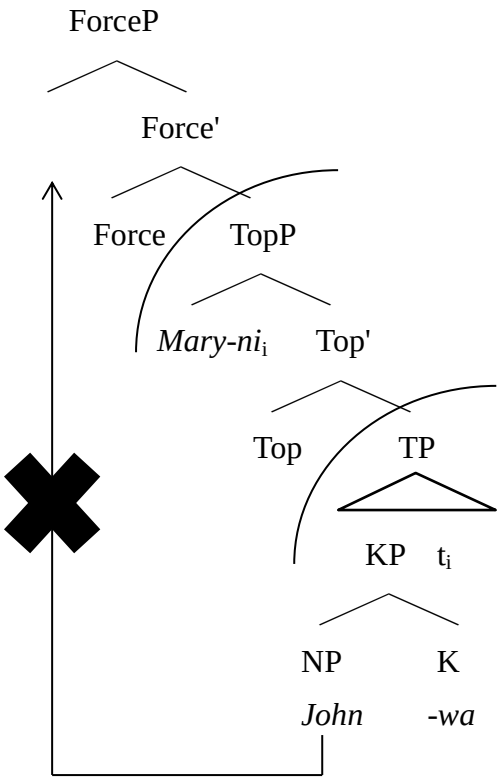


First, in (48a), the KP *John-wa* moves into the specifier of TopP. Second, in (48b), the NP *John* moves into the specifier of ForceP and is not transferred, and, therefore, only the particle *wa* is sent to PF interface. On the other hand, I give the sentence (47b) the following structures:

(49) a.



b.



First, in (49a), the phase head Top probes a topic element *Mary-ni* in its complement and then attracts it to its specifier position, transferring its complement TP to the two interfaces. Second, the NP *John* moves into the specifier of ForceP, but this movement is not allowed by Phase Impenetrability Condition (PIC):

(50) Phase Impenetrability Condition

In phase P with head H, the domain of H is not accessible to operations outside P and only H and its edge are accessible to such operations.

(Chomsky (2000: 108))

Therefore, PSE in Japanese can only occur in the topic position.

Second, in (40) (repeated as (51) below) and (41), the topicalized NP in

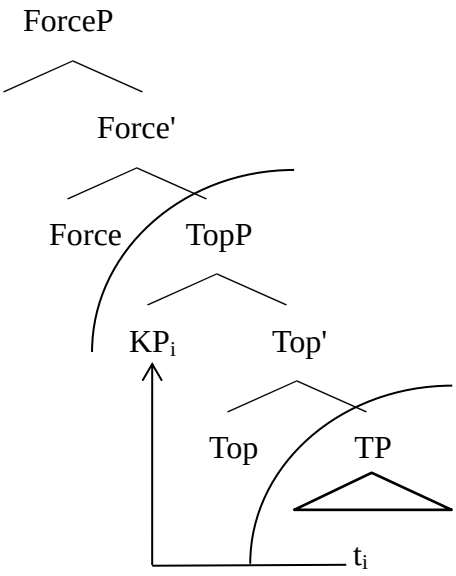
embedded clauses must be transferred to PF interface and it must be pronounced.

(51) Speaker A: John-wa sono-toki Taroo-o doo omotta no?
John-TOP that-time Taro-ACC how thought Q
'What did John think at that time about Taro?'
Speaker B: *John-wa sono-toki [$_{CP}$ Ø-wa, tensai-da-to]
John-TOP that-time TOP genius-COP-COMP
omotta yo.
thought TAG
'Intended: John thought at that time that Ø (=Taro) is a genius.'

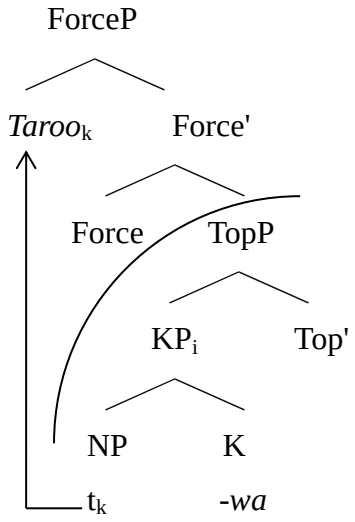
(Sato (2011: 3))

Sentence (51) has the following structures:

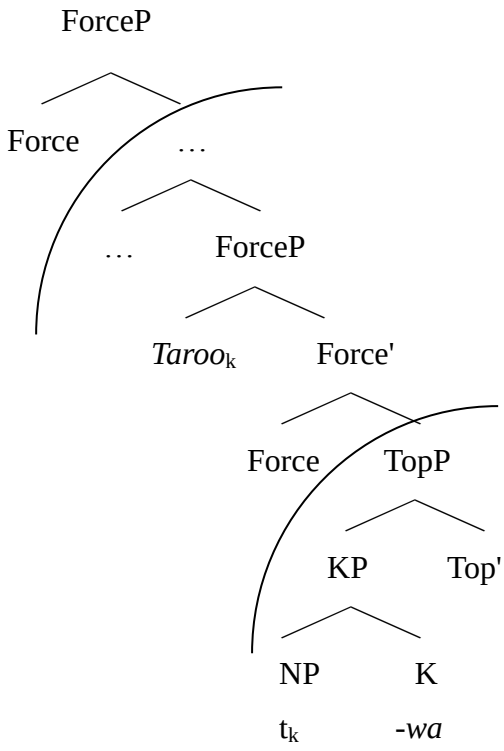
(51) a.



b.



c.



First, in (51a), the phase head Top in the embedded clause probes the KP *Taroo-wa* in its complement and then attracts it to its specifier position, transferring its complement TP to the two interfaces. Second, in (51b), when the phase head Force in the embedded clause merges, it triggers Transfer and its complement TopP is sent to the two interfaces.

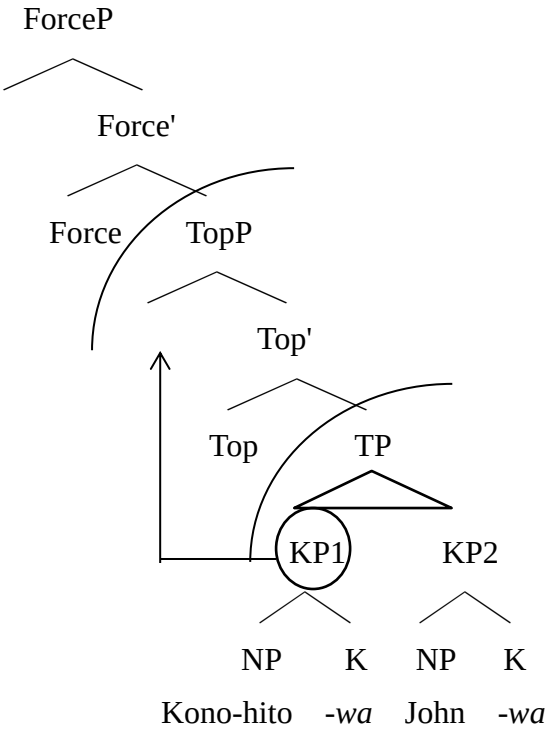
At the same time when Force merges, the topicalized NP moves into the specifier of ForceP and Transfer is applied to the complement of ForceP. However, in (51c), this NP must be transferred at the point of convergence of derivations. Therefore, when this sentence is pronounced, the NP in the embedded clause must be pronounced.

Finally, in (42) (repeated as (52) below), the Split CP structure has only one TopP, and therefore PSE in Japanese can be applied to only one NP.[7]

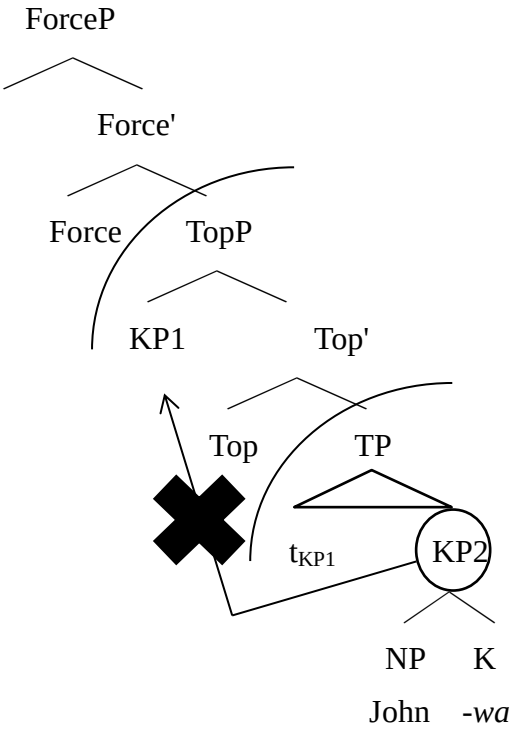
(52) Speaker A: Kono-hito-wa John-o dare-ni
This-person-TOP John-ACC who-DAT
syookai-suru-tumori-na-no?
introduce-do-intend-COP-Q
'To whom does this person intend to introduce John?'
Speaker B: *Ø-wa, Ø-wa, Mary-ni
TOP TOP Mary-DAT
syookai-suru-tumori-nan-desu yo
introduce-do-intend-COP-POL EXCL
'Ø (=this person) intends to introduce Ø (=John) to Mary!'
(Sato (2012:497))

I give sentence (52) the following structures:

(53) a.



b.



First, in (53a), the phase head Top probes the KP1 *Kono-hito-wa* in its complement and

then attracts it to its specifier position, transferring its complement TP to the two interfaces. Second, in (53b), when the phase head Force merges, it triggers Transfer and its complement TopP is sent to the two interfaces. The KP2 *John-wa* moves into the specifier of TopP, but this movement is not allowed by PIC. Therefore, the whole KP2 must be pronounced and PSE in Japanese can be applied to only one NP.

3.4.3. German Colloquial Topic-Drop

In this section, we consider German Colloquial Topic-Drop (Topic-Drop) as shown in (54):

(54) a. Ich hab' ihn schon gesehen.
I have him already seen
'I saw him already.'

b. Ø Hab' ihn schon gesehen.
have him already seen
'Ø (=I) saw him already.'

c. Ø Hab' ich schon gesehen.
have I already seen
'I saw Ø (=him) already.'

(Huang (1984: 546))

Given (54a), the subject in (54b) is a topicalized element because it is old information in (54a), and therefore its element moves into the specifier of TopP in the left periphery of sentence. In (54c), also, the object is a topicalized element and then moves into the specifier of TopP in the left periphery of the sentence

Topic-drop has three structural properties. First, Topic-drop can only occur in the topic position.

(55) a. *Ihn hab' Ø schon gesehen.
him have already seen
'Ø (=I) saw him already.'
b. *Ich hab' Ø schon gesehen
I have already seen
'I saw Ø (=him) already.'

(Huang (1984: 547))

Second, Topic-drop cannot occur in an embedded clause even when a topicalized element occupies the initial position in the embedded clause. This is illustrated in (56):

(56) a. *Hans glaubt [Ø habe es gestern gekauft].
Hans believe have it yesterday bought
'Hans believes that Ø (=I) bought it yesterday.'

((Rizzi (2005a: 90))

b. *Hans glaubt [Ø habe ich gestern gekauft].
Hans believe have I yesterday bought
'Hans believes that I bought Ø (=it) yesterday.'

(Yoshida (2004: 296))

Finally, Topic-drop cannot be applied to more than one NP in the root clause.

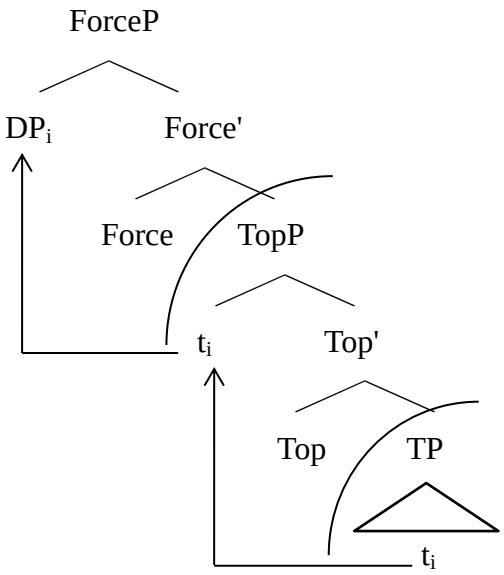
As shown in (57), this operation cannot target both subject and object DPs.

(57) *Ø hab' Ø schon gekannt.
have already known
' Ø (=I) already knew Ø (=him).'

(Huang (1984: 548))

My proposal can account for these properties. As we saw in section 4.2, first, the topicalized DP moves into the specifier of TopP in order to be licensed by the head Top, and then it moves into the specifier of ForceP, which is not sent to the PF interface. Therefore, the DP is unpronounced and Topic-Drop is generated. This is illustrated in (58)

(58)



With the derivation of (58) in mind, consider the case of (54) (repeated in (59) below).

(59) a. Ich hab' ihn schon gesehen.

I have him already seen

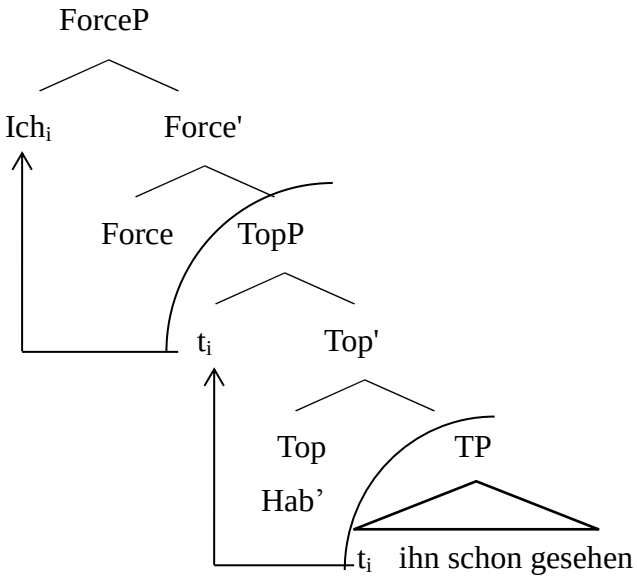
'I saw him already.'

b. Ø Hab' ihn schon gesehen.

have him already seen

'Ø (=I) saw him already.'

c.



First, the topicalized DP *ich* moves into the specifier of TopP in order to be licensed by the head Top. Then it moves into the specifier of ForceP. This position is not Transferred. Therefore the DP *ich* is not sent into the PF interface and then it is not pronounced.

Furthermore, my proposal can explain three structural properties of Topic-drop: it occurs in the topic position, cannot occur in embedded clauses, and cannot be applied to both subject and object.

First, in (55) (repeated in (60) below), can only occur in the topic position.

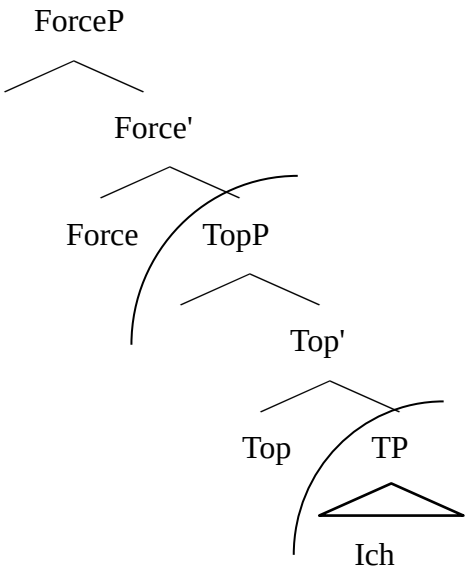
(60) a. *Ihn hab' Ø schon gesehen.
him have already seen
'Ø (=I) saw him already.'

b. *Ich hab' Ø schon gesehen
I have already seen
'I saw Ø (=him) already.'

(Huang (1984: 547))

Sentence (60) has the following structure:

(61)



In (61), the DP *Ich* remains in TP and the phase head Top triggers Transfer. The DP is sent into the PF interface, and therefore must be pronounced.

Second, in (56) (repeated in (62) below), a topicalized DP in embedded clauses must be transferred to the PF interface and it must be pronounced.

(62) a. *Hans glaubt [Ø habe es gestern gekauft].

Hans believe have it yesterday bought

'Hans believes that Ø (=I) bought it yesterday.'

((Rizzi (2005a: 14))

b. *Hans glaubt [Ø habe ich gestern gekauft].

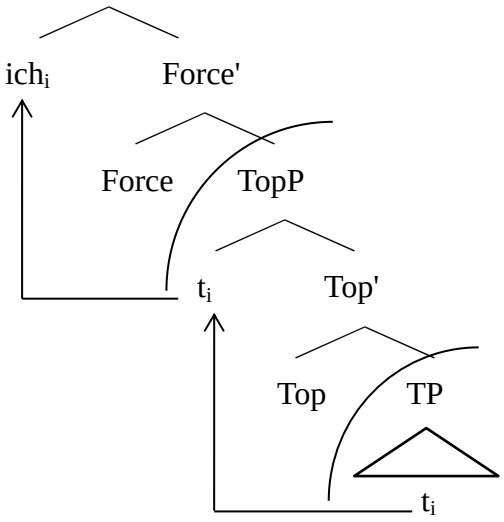
Hans believe have I yesterday bought

'Hans believes that I bought Ø (=it) yesterday.'

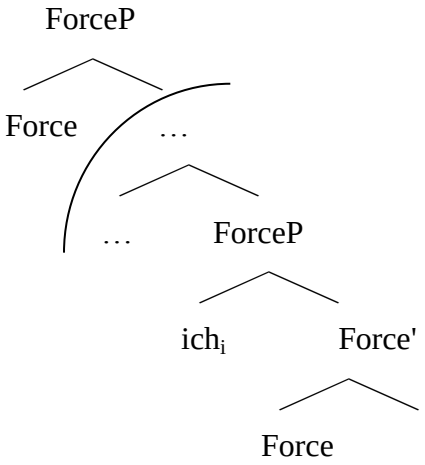
(Yoshida (2004: 296))

I give sentence (62a) the following structures:

(63) a.



b.



First, in (63a), the topicalized DP *ich* moves into the specifier of TopP in the embedded clause in order to be licensed by the head Top, and then moves into the specifier of ForceP in the embedded clause. Second, in (63b), the DP in the embedded clause must be Transferred at the point of convergence of derivations in the root clause. Therefore the DP *ich* is sent into the PF interface and then it must be pronounced.

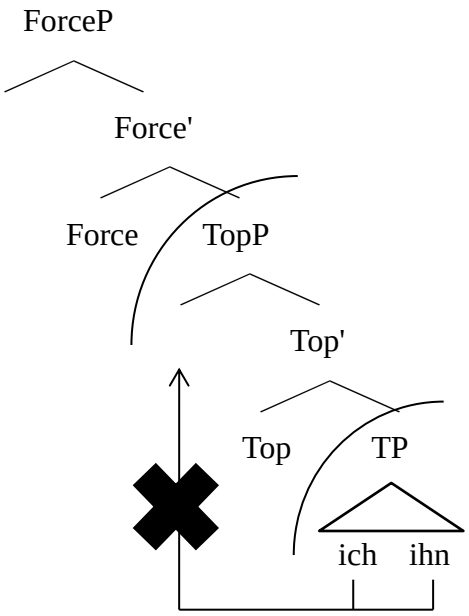
Finally, in (57) (repeated in (64) below), Topic-drop cannot be applied to more than one NP in the root clause. This operation cannot target both subject and object DPs.

(64) *Ø hab' Ø schon gekannt.
have already known
'Ø (=I) already knew Ø (=him).'

(Huang (1984: 548))

Sentence (64) has the following structure:

(65)



In (65), the Split CP structure has only one TopP, and therefore only one DP, subject or object, moves into the specifier of TopP. Particularly, when the subject DP moves into this position, the phase head Top Transfers its complement TP, the object DP must be sent into the PF interface, and must be pronounced. Therefore, Topic-drop cannot target both subject and object DPs

3.4.4. Subject drop

In this section, we focus on Subject-drop in English (Subject-drop). Subject-drop has five properties. First, only subjects may be dropped as shown in (66):

(66) What did Rufus do with the ball?

a. He threw it.

b. Threw it.

c. *He threw.

d. *Threw.

(Schirer (2008: 49))

These examples show that only subjects can be deleted whereas objects or pairs of subjects and objects cannot.

Second, phi-features of the subject, like the person, number, and gender features, have no effect on the availability of subject drop. In particular, these features ({masculine and feminine}, {singular and plural}, and {1st person, 2nd person, 3rd person}) have no relation to the application to Subject-drop as shown in (67)-(69).

(67) What did [I / we] do yesterday afternoon?

a. You washed the car.

b. Washed the car.

(68) What did [he / she / it / they] do yesterday afternoon?

a. [He / She / It / They] washed the car.

b. Washed the car.

(69) What did you do yesterday afternoon?

a. [I / We] washed the car.

b. Washed the car.

(Schirer (2008: 65))

Third, Tense, present or past, is insensitive to implementation of Subject-drop as shown in (70) and (71).

(70) What did she do on Friday afternoon?

a. She washed the car.

b. Washed the car.

(71) What does she normally do on Friday afternoons?

a. She washes the car.

b. Washes the car.

(Schirer (2008: 58))

Fourth, when the future modal *will*, the progressive auxiliary *be*, and the perfect auxiliary *have* are contrasted in context, Subject-drop is allowed as show in (72)-(74).

(72) Do you have any plans this weekend? I hear the fair is awful.

a. I WILL go to the fair.

b. WILL go to the fair.

(73) Does he have any plans this weekend? The weather is just awful.

a. He IS driving to Chicago.

b. IS driving to Chicago.

(74) Did you ever meet anyone famous? You've led a pretty shut-in life.

a. I HAVE spoken with the president.

b. HAVE spoken with the president.

(Schirer (2008: 61))

Finally, Subject-drop is applied in sentences which contain modal auxiliaries such as *should, might, must,* etc., as shown in (75)-(77).

(75) Why aren't you coming to the party?

a. I should do my math homework.

b. Should do my math homework.

(76) Do you have any plans this weekend?

a. I might go to the fair.

b. Might go to the fair.

(77) Will he graduate this semester?

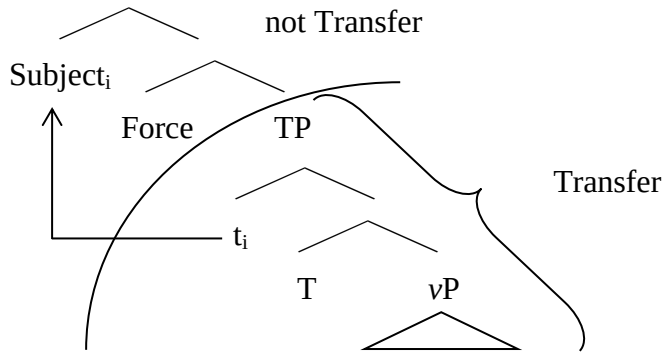
a. He must finish his thesis first.

b. Must finish his thesis first.

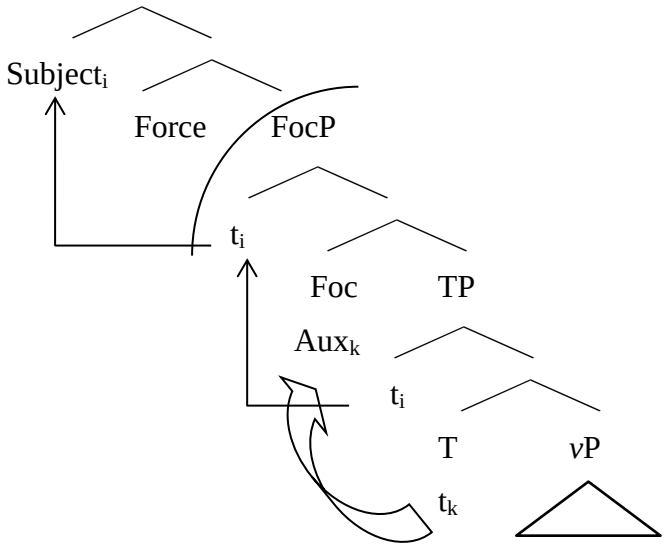
(Schirer (2008: 62))

My proposal can account for these properties of Subject-drop. I will consider the derivation of Subject-drop (i) when auxiliaries are stressed and (ii) when they are not. The derivations of Subject-drop in the cases are illustrated in (78).

(78) a. ForceP



b. ForceP



In (78a), where the auxiliary does not have stress, the subject moves into the specifier of ForceP from the specifier of TP. The subject is not Transferred into the PF interface, and therefore it is not pronounced. On the other hand, in (78b), where the auxiliary has stress, the subject moves into the specifier of ForceP through the specifier of FocP and an auxiliary moves into the head Foc from the head T in order to assign stress to it. As a result, the subject is not sent into the PF interface and is not pronounced while the auxiliary is pronounced with stress.

In terms of (78a), I can explain the second property (cf. (67)-(69)), the third property (cf. (70) and (71)), and the fifth property (cf. (75)-(77)). In these cases, the subject moves into the specifier of ForceP and is not Transferred into the PF interface, and therefore it is not pronounced. Thus, phi-features, tense, and modal auxiliaries have no effect on the application of Subject-drop. For example, let us consider sentence (70) (repeated in (79) below).

(79) What did she do on Friday afternoon?

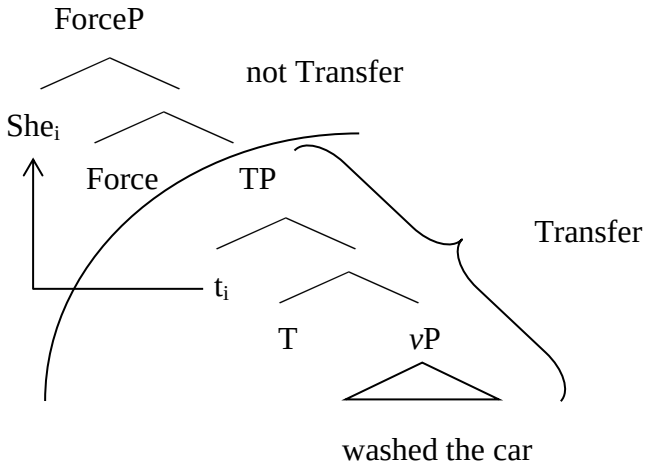
a. She washed the car.

b. Washed the car.

(Schirer (2008: 58))

Sentence (79b) has the following structure:

(80)



In (80), the subject *she* moves into the specifier of ForceP and the phase head Force Transfers its complement TP. The subject is not Transferred into the PF interface and is not pronounced.

Let us turn to the fourth property illustrated in (72)-(74). Given the derivation of (78b), the auxiliary moves into the head Foc from the head T in order to assign stress to it, whereas the subject moves into the specifier of ForceP through the specifier of FocP. The subject is not Transferred into the PF interface and is not pronounced, while the auxiliary is pronounced with stress. In particular, let us consider sentence (72) (repeated in (81) below).

(81) Do you have any plans this weekend? I hear the fair is awful.

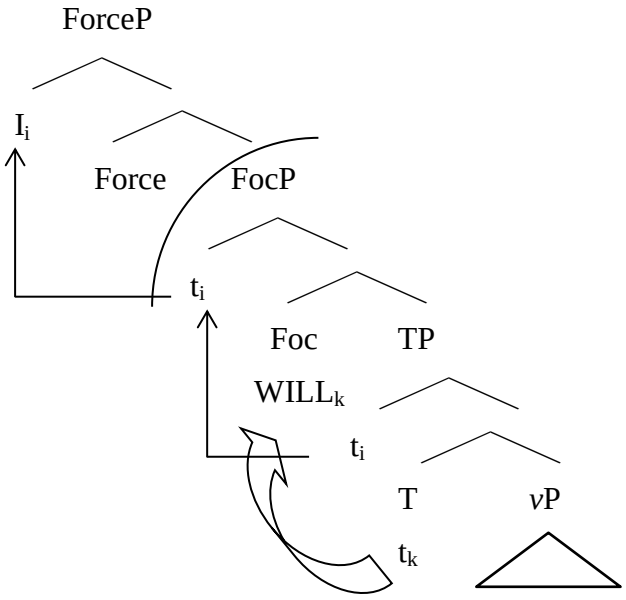
a. I WILL go to the fair.

b. WILL go to the fair.

(Schirer (2008: 61))

I give sentence (81b) the following structure:

(82)



In (82), the auxiliary *will* moves into the head Foc and is given stress. The subject *I* moves into the specifier of ForceP through the specifier of FocP. The phase head Force Transfers its complement FocP and the subject is not Transferred into the PF interface. Therefore, the subject is not pronounced and the auxiliary is pronounced with stress.

The first property is slightly complicated. Firstly, ForceP has only one specifier. This is the reason why we cannot delete both of the subject and the object. Secondly, why can only the subject be deleted? In order to answer this question,

following Li and Thompson (1976), Reinhart (1981), and Erteschik-Shir (2007), I assume that the subject is the unmarked topic in subject-prominent language. Subjects are old information and are known by the speaker and the hearer in a particular context, and therefore these are easier to delete in information structure than objects.

Before concluding this section, I will note remaining problems with my analysis. First, let us consider (83).

(83) a. You are going to the store.
b. *(YOU) are going to the store. [Subject-drop]
c. (Are) you going to the store? [Aux-drop]
d. (Are YOU) going to the store? [Subject+Aux-drop]

(Schirer (2008: 12))

(83d) shows that subjects stressed with SAI can be dropped. Given (78), the subject YOU, which has stress, is in the specifier of FocP and it must be sent into the PF interface. Therefore my analysis predicts that it must be pronounced, but it can be deleted with the auxiliary *are*.

The second problem is Subject-drop with negation. In *yes-no* questions, Subject-drop cannot be implemented as shown in (84)-(87).

(84) a. Do you like the fair this year?

b. *Do like the fair this year?

(85) a. Has she seen the new movie?

b. *Has seen the new movie?

(86) a. Am I presenting this afternoon?

b. *Am presenting this afternoon?

(87) a. Can you give me a dollar?

b. *Can give me a dollar?

However, if these sentences are turned into negative ones and then Subject-drop can be applied as shown in (88)-(91).

(88) a. Don’t you like the fair?

b. Don’t like the fair?

(89) a. Haven’t you finished your homework?

b. Haven’t finished your homework?

(90) a. Aren’t you presenting this afternoon?

b. Aren’t presenting this afternoon?

(91) a. Won’t he graduate this semester?

b. Won’t graduate this semester?

(Schirer (2008: 69))

My proposal predicts that (88)-(91) are ungrammatical as (84)-(87), but this is not the case. The derivation (78) cannot explain why Subject-drop is allowed when sentences are negative. I leave these problems for future research.

3.5. Conclusion

In this chapter, I proposed that the phase head Force and its specifier in root CP remain untransferredd at the point of the convergence of derivations. The untransferred head and edge are not sent into the two interfaces, one of which is the PF interface and are not pronounced. I showed that this proposal provides a unified account of the following phenomena: Aux-drop, gapping, particle-stranding ellipsis in Japanese, German Topic-drop, and Subject-drop in English.

Notes to Chapter 3

1. In this chapter, I do not deal with Aux-drop targeting modal auxiliaries as shown in (i)

.

(i) a. *(Can) anyone pick up John at the airport?

b. *(Will) anyone play the piano at the party tomorrow?

c. *(Could) anyone have picked up John at the airport yesterday?

d. *(Would) everyone be happier if classes were cancelled?

e. *(Should) everyone leave if the neighbors complain?

(Fitzpatrick (2006: 412))

f. *(Might) I ask a favor of you?

(Schirer (2008: 27))

Generally, Aux-drop targeting modal auxiliaries is not allowed.

2. (3b) shows that when the sentence is declarative, the auxiliary *has* cannot be deleted. In *yes-no* questions, as shown in (1b), the auxiliary can be deleted.

3. Schirer (2008) assumes that an uninterpretable feature causes T to C movement and head movement is syntactic movement.

4. Schirer notes that for many speakers, their acceptability judgment varies on the difference between subject *wh*-words and object *wh*-words, or adjunct *wh*-words and argument *wh*-words in (9)-(11),

5 Johnson (2001) and Funakoshi (2012, 2014) assume that VP ellipsis is derived from VP movement as shown in (i) and (ii).

(i) a. José Ybarra-Jaegger eats rutabagas, and Holly does ~~[$_{VP}$ eat rutabagas]~~ too.
b. José Ybarra-Jaegger ate rutabagas, and Holly has ~~[$_{VP}$ eaten rutabagas]~~ too.
c. José Ybarra-Jaegger is eating rutabagas, and Holly is ~~[$_{VP}$ eating rutabagas]~~ too.

(Johnson (2001: 440))

(ii) a. Madame Spanella claimed that…
b. [$_{VP}$ *Eat rutabagas*], Holly wouldn't *t*.
c. [$_{VP}$ *Eaten rutabagas*], Holly hasn't *t*.
d. [$_{VP}$ *Eating rutabagas*], Holly shouldn't be *t*.

(Johnson (2001: 444))

This appears to suggest that VP ellipsis and gapping are analyzed by the same approach that I propose in this chapter. VP ellipsis differs from gapping in that VP ellipsis can target subordinate clause. In this chapter, I do not deal with VP ellipsis.

6 For KP analysis, see Bošković (2014), Fukui (1986), Fukui and Speas (1986), Narita (2011), and Takahashi (2011).

7 Watanabe (2007) argues on the basis of old Japanese that the left periphery of Japanese has multiple topic.

(i) ... imo-**so** tohoku-**ha** wakare-ki-ni-keru.

wife-SO far-top part.with-come-perf-past

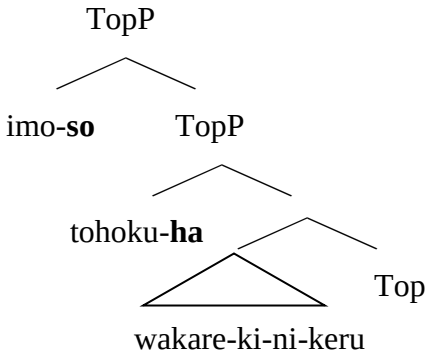
"I have come very far, leaving my wife behind."

(Man'youshuu #3698)

(Watanabe (2007: 127))

He argues that (i) should have the structure as shown in (ii)

(ii)



(Watanabe (2007: 129))

In modern Japanese as well, *wa*-phrases occur in the same clause as shown in (iii).

(iii)Taroo-wa soko-e-wa itta

-TOP there-to-TOP went

A. 'Speaking of Taroo, he went there, but I don't know about the other places'

(Taroo: thematic, soko-e: contrastive)

B. 'Taroo went there, but I don't know about the other people and the other places'

(Taroo: contrastive, soko-e: contrastive)

In (iii), *wa*-phrases have different interpretations as in A, or the same interpretation as in B. Cartographic approach is based on the Kayne's LCA and multiple specifier is banned. Therefore, I do not assume multiple specifier approach, and I leave for future research the problem of TopP can be recursive or not.

Chapter 4

On the Asymmetry between Finite CP and Infinitival CP Clauses

4.1. Introduction

In this chapter, I will focus on the difference between finite CP and infinitival CP clauses. In particular, the two types of CP clauses differ from each other in that finite CP clauses have layered functional structures while infinitival CP clauses have defective functional structures. Moreover, I propose that the head Force in finite CP clauses qualifies as a phase head while the head Force in infinitival CP clauses does not. In implementing my proposal, I utilize *Distinctness*, which Richards (2010) introduces. This condition bans two identically labeled constituents from being linearized in the same syntactic domain; for example, two DPs are in the same Spell-Out domain and this linearization statement <DP, DP> cannot be read at the PF because the interface cannot see that one DP precedes or follows the other DP. Therefore, the derivation crashes. It can also uniformly explain a variety of syntactic phenomena. The condition, however, has some problems that I show below and then I will indicate that my proposal solve these problems.

This chapter is organized as follows. Section 2 shows that the differences between finite CP and infinitival CP clauses: in particular, the difference of structures and phasehood, and I will propose that the head Force in a finite CP clause functions as a phase head while the head Force in infinitival CP clauses does not. Section 3 overviews the Distinctness condition, and I point out two problems with Richards' analysis based upon this condition. In section 4, I show how my proposal solves these problems. Section 5 concludes this chapter.

4.2. Proposal

This section will show that finite CP clauses can have rich layered functional projections while infinitival CP clauses cannot, and the difference between them stems from the difference in phasehood of the head Force of the types of CP clauses. In particular, to illustrate the difference of structures between finite CP and infinitival CP clauses, I will note that the former can allow Topicalization and Focalization whereas the latter cannot. Then, to capture the difference between finite CP and infinitival CP clauses on the property of phasehood, I will propose that the head Force in finite CP clauses qualifies as a phase head while the head Force in infinitival CP clauses does not, showing the contrast between finite CP and infinitival CP clauses by availability of extraction of syntactic objects.

4.2.1. The Difference of Structures between Finite CP and Infinitival CP

I assume that finite CP clauses can have rich layered functional projections while infinitival CP clauses cannot, as shown in (1).

(1) a. Finite CP = [ForceP [TopP [FocP [FinP [TP ...

b. Infinitival CP = [ForceP [FinP [TP ...

Defective

Finite CP clauses can have the Split CP structure, while infinitival CP clauses cannot have TopP and FocP and hence they are defective. This assumption is supported by the contrast between finite CP and infinitival CP clauses in availability of Topicalization and Focalization, as shown in (2).

(2) a. John wants to give a book to this student.

b. **EVEN THIS STUDENT**$_i$, John wants to give a book to t_i.

c. *John wants **EVEN THIS STUDENT**$_i$ to give a book to t_i.

d. *This student*$_i$, John wants to give a book to t_i.

e. *John wants *this student*$_i$, to give a book to t_i.

(Barrie (2010: 272))

(2c) and (2e) show that Topicalization and Focalization cannot occur in infinitival CP clauses. On the other hand, (2b) and (2d) indicate that topicalized or focalized elements can move to a sentence initial position. Assumption (1) accounts for this difference between finite CP and infinitival CP clauses: the former has functional projections, TopP and FocP, which licensed Topicalization and Focalization, while the latter lacks these functional projections and cannot license Topicalization and Focalization.

4.2.2. Phasehood of Finite CP and Infinitival CP

In this section, I propose that the head Force in finite CP clauses qualifies as a phase head while the head Force in infinitival CP clauses does not.

(3) a. Force in finite CP = phase head

b. Force in infinitival CP = non phase head

My proposal predicts that the head Force in finite CP is subject to the Phase Impenetrability Condition (PIC) in (4), while the head Force in infinitival CP is not because it is not a phase head.

(4) Phase Impenetrability Condition (Chomsky (2000: 108))

In phase P with head H, the domain of H is not accessible to operations outside P and only H and its edge are accessible to such operations.

Therefore, we predict that there is a clear difference between the head Force in finite CP and the one in infinitival CP. In the next subsection, I will discuss empirical supports for my proposal and prediction.

4.2.2.1. The Asymmetry of Extraction between Finite CP and infinitival CP

Let us consider (5), which shows the contrast between finite CP and infinitival CP clauses on extraction.

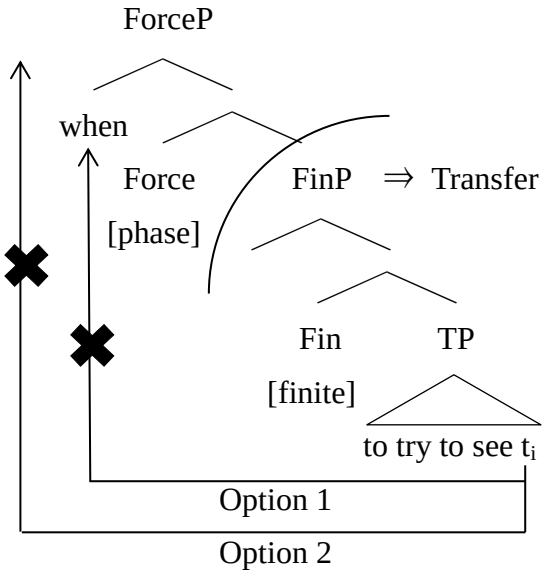
(5) a. *Sam$_i$, who I know [when you said you saw t_i], …

b. Sam$_i$, who I know [when to try to see t_i],…

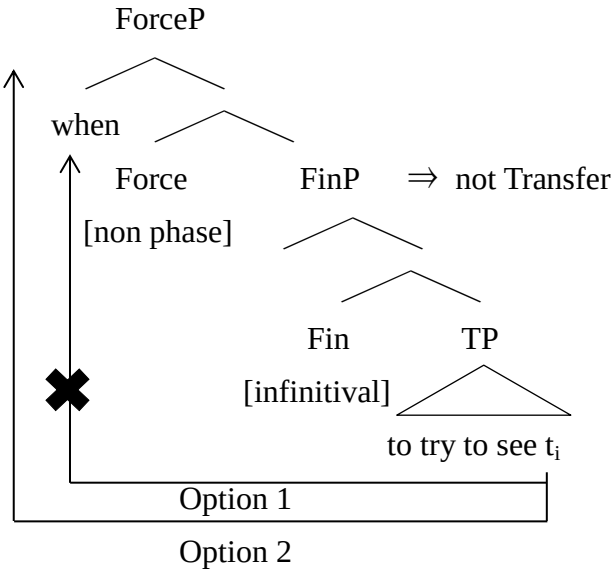
(Frampton (1990: 69-70)

In (5a), *Sam* cannot be extracted from the finite CP clause, whereas it can be extracted from the infinitival CP clause in (5b). This asymmetry follows from my proposal that the head Force in finite CP clauses behaves as a phase head while the head Force in infinitival CP clauses does not.

(6) a.



(6) b.



In (6a), the structure of (5a), the head Force is a phase head, triggers Transfer, and sends its complement FinP into the two interfaces: the C-I interface (LF) and the SM interface (PF). For the syntactic object *Sam* to leave the embedded clause, it moves into the specifier of ForceP before FinP is Transferred (Option1), or, after Transfer, it moves into higher positions (Option 2). However, both options cannot be applied in this case. In Option 1, the *wh*-word *when* has already occupied the specifier

of ForceP and the syntactic object *Sam* cannot move into this position. For Option 2, FinP has been already Transferred, and, therefore, the syntactic object *Sam* cannot be extracted from TP by PIC.

In contrast (6a), in (6b), the structure of (5b), the head Force is not a phase head and does not cause Transfer. This is crucial to account for the contrast concerning extraction. As we saw above, the syntactic object *Sam* moves into the specifier of ForceP (Option1), or it moves into higher positions (Option 2). For Option 1, the syntactic object *Sam* cannot move into the specifier of ForceP because the *wh*-word *when* has already occupied this position. For Option 2, however, since the head Force is not a phase head, FinP has not been Transferred, and, therefore, the syntactic object *Sam* can move into higher positions.

4.2.2.2. Phasehood on Topic Head in Finite CP

In chapter 2, I argued that the head Top is a phase head, the head Foc is not. This is based upon the fact that the former behaved as a syntactic island from which extraction of elements is banned, while the latter does not, as illustrated in the following examples.

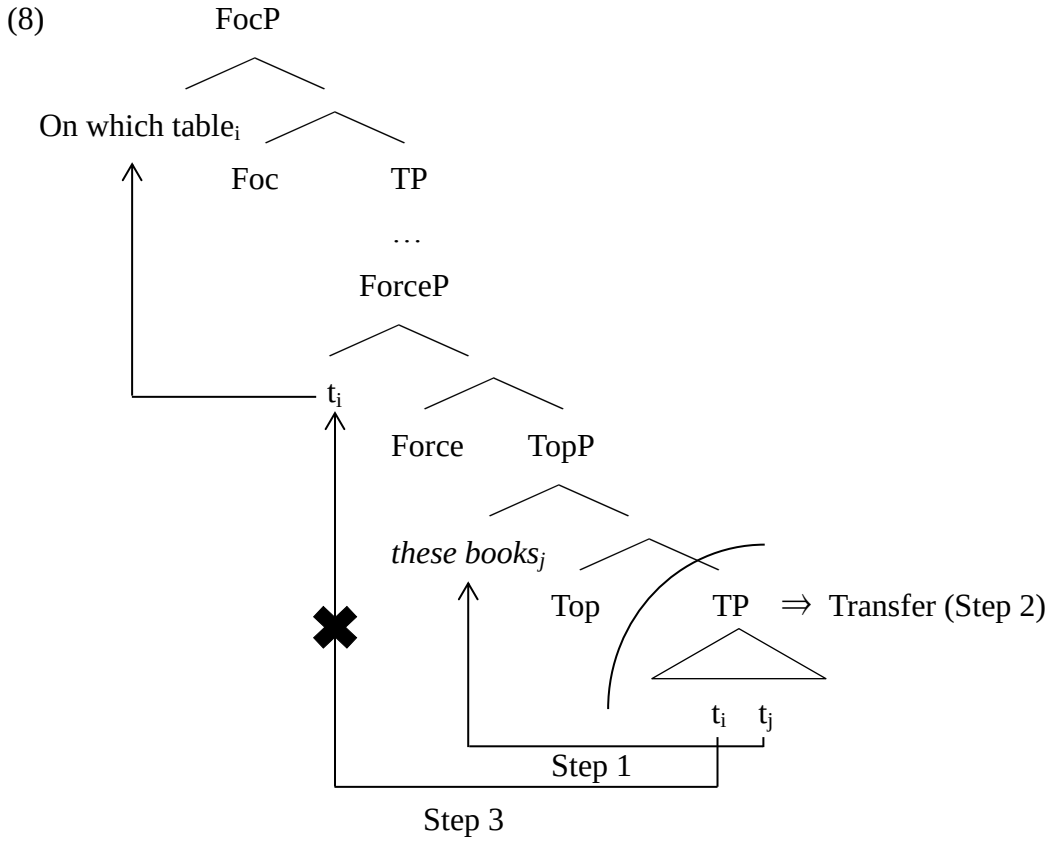
(7) a. * On which table did Lee say that *these books* she will put?

b. On which table did Lee say that **only these books** would she put?

(Koizumi (1999:141))

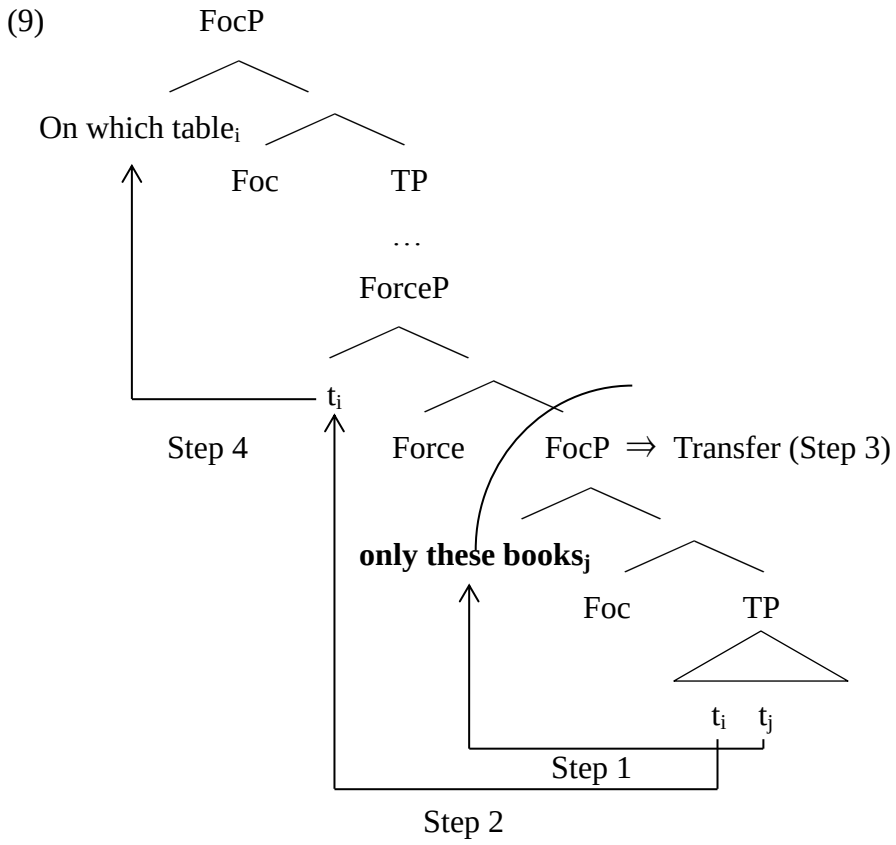
When Topicalization occurs in an embedded clause, Top as a phase head triggers Transfer and then sends its complement to the two interfaces. Then, the complement will be inaccessible to further syntactic operations due to PIC. First, in step 1, the head

Top attracts *these books* to the specifier of TopP. Second, in step 2, the head Transfers TP. Finally, in step 3, *on which table* tries to move to the specifier of ForceP, but this movement violates PIC. Accordingly, this sentence is ungrammatical.



On the other hand, when Focalization occurs in an embedded clause, Foc as a non-phase head does not trigger Transfer of its complement which will be accessible to further syntactic operations. Therefore, *on which table* can be extracted from the embedded clause. In step 1, the head Foc attracts ***only these books*** to the specifier of FocP. Then, in step 2, *on which table* moves into the specifier of ForceP, which serves as an escape hatch. Finally, in step 3, the head Force Transfers FocP. The *wh*-element at the specifier of ForceP is accessible to the attraction of the head Foc in the matrix clause (Step 4). Thus, this sentence is grammatical.

(9)



In this section, I showed my proposal that the head Force in finite CP clauses qualifies as a phase head while the head Force in infinitival CP clauses does not.

(10) a. Force in finite CP = phase head

b. Force in infinitival CP = non phase head

Moreover, finite CP clauses can have rich layered functional projections while infinitival CP clauses cannot, as shown in (11).

(11) a. Finite CP = [ForceP [TopP [FocP [FinP [TP ...

b. Infinitival CP = [ForceP [FinP [TP ...

Defective

4.3. The Difference in Relativization between Finite CP and Infinitival CP

In this section, I will show that my proposal can account for the asymmetry in relativization between finite CP and infinitival CP clauses. In particular, I will explorer the contrast between finite relative clauses and infinitival relative clauses which Richards (2010) analyzes. He tries to account for this contrast by *Distinctness*, which is the condition that bans two identically labeled constituents from being linearized in the same syntactic domain. This condition can uniformly explain a variety of syntactic phenomena. However, when Topicalization occurs in relative clauses, two problems arise. A linearization statement <α, α>, such as <PP, PP>, is in the same Spell-out domain and it violates Distinctness. Therefore, he predicts that this sentence is ungrammatical, but, in fact, the sentence is grammatical. Second, multiple Topicalization is prohibited in English. I address the two problems by modifying his approach.

4.3.1. Distinctness

Richards (2010) proposes *Distinctness* that bans two identically labeled constituents from being linearized in the same Spell-Out domain, in order to account for a variety of syntactic phenomena. Distinctness is the condition on the syntax-phonology interface.

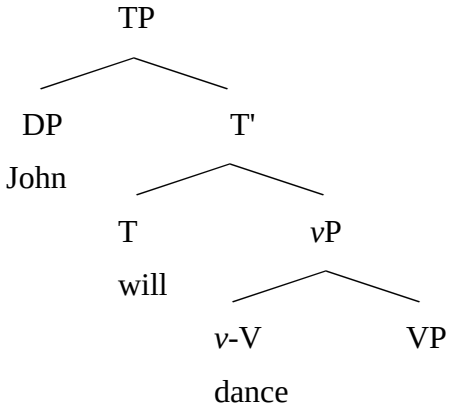
(12) *Distinctness*

If a linearization statement <α, α> is generated, the derivation crashes.

(Richards (2010: 5))

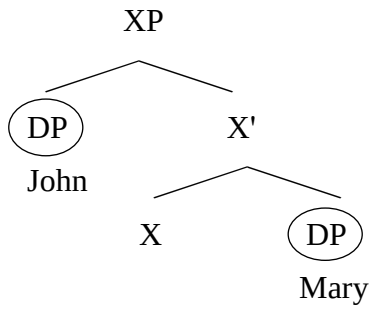
This condition is based on the LCA of Kayne (1994). In particular, Richards (2010: 4-5) assumes that one of the tasks of the grammar is to establish a linear order between the terminal nodes of the sentence at least by the point of Spell-Out, and that this linear order is determined by properties of the tree. The LCA establishes a set of linearization statements <α, β>, such that α asymmetrically c-commands β, and such linearization statements are taken to determine that α must precede β.

(13)



In the tree in (13), for example, the grammar provides linearization statements like <DP (John), T (will)>, <T (will), *v*-V (dance)>, and so forth. On the other hand, Richards (2010) assumes that linearization statements are limited to node labels. Let us consider the linearization of a tree in (14):

(14)



If a tree like the one in (4) is sent to the PF, the linearization algorithm will generate the linearization statement <DP, DP>, since the DP *Mary* asymmetrically c-commands the DP *John*. Crucially, linearization process is unable to make reference to any of the richer information that would distinguish these DPs from each other; the linearization statement cannot say, for example, <DP (Mary), DP (John)>, or <DP-in-specifier-of-X, DP-complement-of-X>. Since the linearization statement <DP, DP> is uninterpretable, such a structure will be rejected at the PF. Thus, Distinctness effectively bans structures in which different syntactic objects with the same label in an asymmetric c-command relation occupy the same Spell-Out domain.

The proposal makes crucial use of the approach to Spell-Out developed in Chomsky (2000, 2001) and much subsequent work, in which material is sent to the PF component periodically throughout the derivation, whenever a phase has been completed.

Let us consider concrete examples of Distinctness effects in English: *Quotative Inversion* and *Multiple Sluicing*.

(15) *Quotative Inversion*

a. "It's cold," said John.

b. "It's cold," said [$_{DP}$ John] [$_{PP}$ to Mary].

c. *"It's cold," told [$_{DP}$ John] [$_{DP}$ Mary].

(Richards (2010: 13))

(15a) is an instance of Quotative Inversion, in which the subject remains in a post verbal position and a quotation appears before the verb. (15b) shows that Quotative Inversion is possible because DP *John* and PP *to Mary* are not of the same label in a post verbal position, which is the Spell-Out domain, so this sentence does not violate the condition. However, in (15c), since DP *John* and DP *Mary* have the same label in the post verbal Spell-Out domain, this sentence offends the Distinctness condition and then Quotative Inversion is impossible.

(16) *Multiple Sluicing*

a. I know everyone danced with someone, but I don't know [$_{DP}$ who][$_{PP}$ with whom]

b. *I know everyone insulted someone, but I don't know [$_{DP}$ who][$_{DP}$ whom]

(Richards (2010: 3))

(16a) shows that sluicing with multiple remnants is possible because remnants are DP and PP, but, in (16b), both of the sluicing remnants are DPs, and therefore, this sentence violates Distinctness and is ungrammatical. Distinctness allows us to capture these facts.

Richards (2010) also tries to explain Relativization, as shown in (17)

(17) *Relativization (infinitival relative clause)*

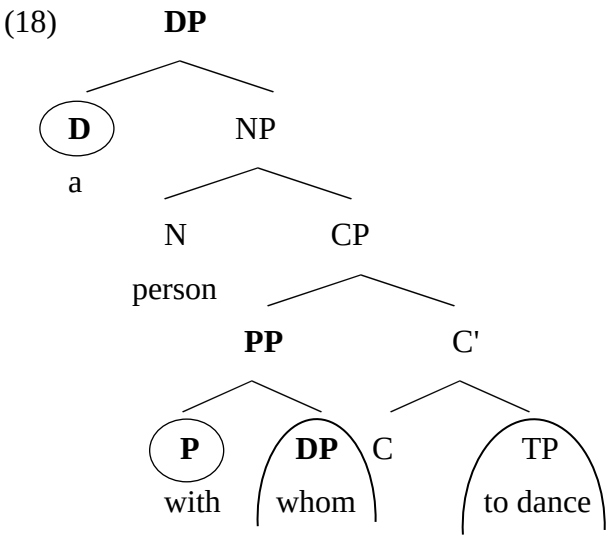
a. [$_{DP}$ a person][$_{PP}$ with whom] to dance

b. *[$_{DP}$ a person][$_{DP}$ whom] to admire

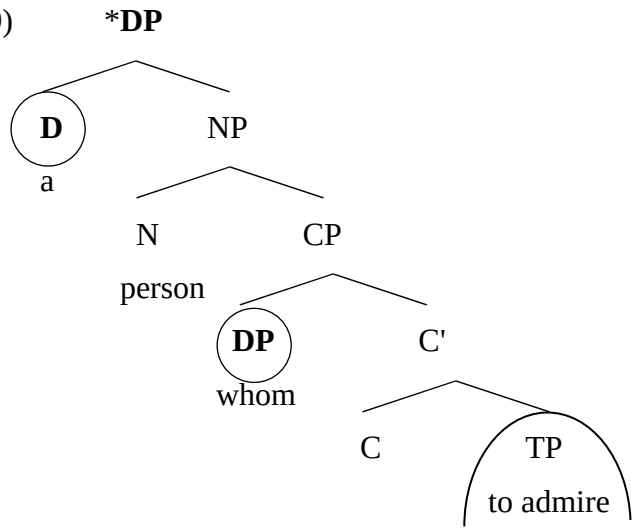
(Richards (2010: 34))

The structures of (17a, b) are shown in (18) and (19) respectively.

(18)



In (18), the PP *with whom* is a relative operator and a linearization statement is <DP, PP>, or <D, P>, and so this does not violate the Distinctness condition. Richards (2010) assumes that PP is a phase and a phase head P Transfers the complement DP into the PF (that is, SM interface).[1] Therefore the DP *whom* and the D of the relative clause's head are not in the same Spell-Out domain.

(19) 

In (19), the relative operator DP *whom* is in the highest specifier of the CP phase. The DP *whom* is not Transferred with the TP, but rather with the next higher spell-out domain. Therefore, the D of the relative clause's head and the DP *whom* are linearized in the same Spell-Out domain, and the resulting linearization statement <D, D> is uninterpretable, so the derivation crashes.

In this subsection, we overviewed the Distinctness condition. This condition has to do with the process of imposing a linear order on the same labeled constituents of the tree and explains a variety of syntactic phenomena by prohibiting two identically labeled constituents from being linearized in the same Spell-Out domain.

4.3.2. Inadequacy of Richards' Analysis

In this subsection, I will show that relative clauses pose some problems for Distinctness under the original framework of Richards (2010).

Richards (2010) adopts the proposal of Bianchi (1999), who argues that finite relative clauses have more layers in the CP field than infinitival ones do. Bianchi (1999) assumes that finite relative clauses in English involve not just a CP, but a ForceP

along with a TopP, and the overt relative Operator *whom* occupies the lower of these positions as in (20).

(20) *Relativization (finite relative clauses)*

a. the man whom I admire

b. [$_{DP}$ the [$_{ForceP}$ [$_{NP}$ man][Force **[$_{TopP}$ [$_{DP}$ whom][Top [$_{TP}$ I admire]]]**]]]

Transfer

(Richards (2010: 36-37))

In (20), the head Force is a phase head and Transfers its complement TopP. As a result, the DP *the man* and the DP *whom* are not in the same Spell-Out domain and, therefore, the derivation converges.

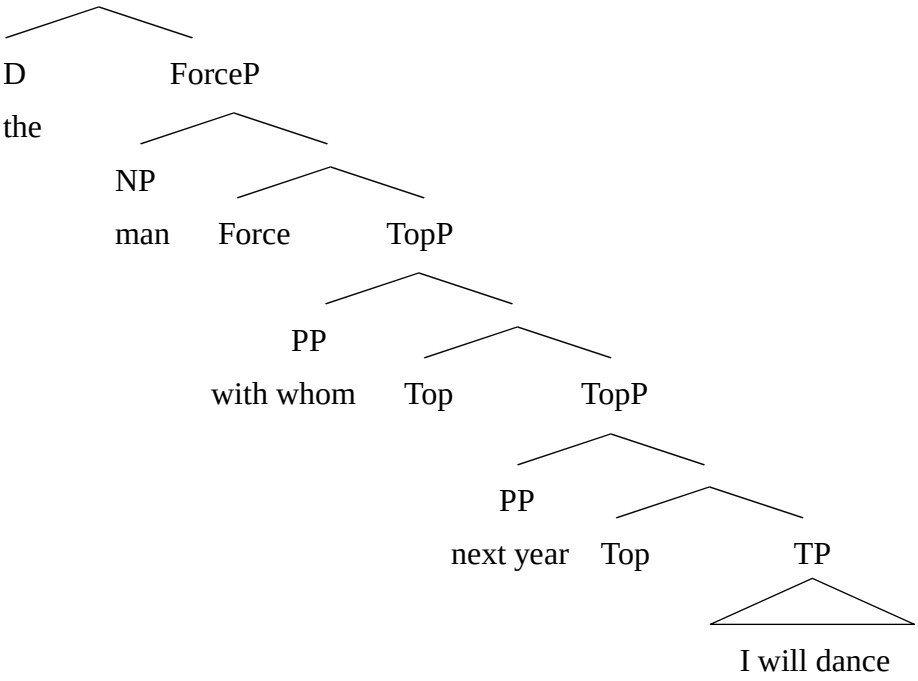
But there are problematic examples for the analysis.[2]

(21) a. This is the man [with whom, *next year*, I will dance.]

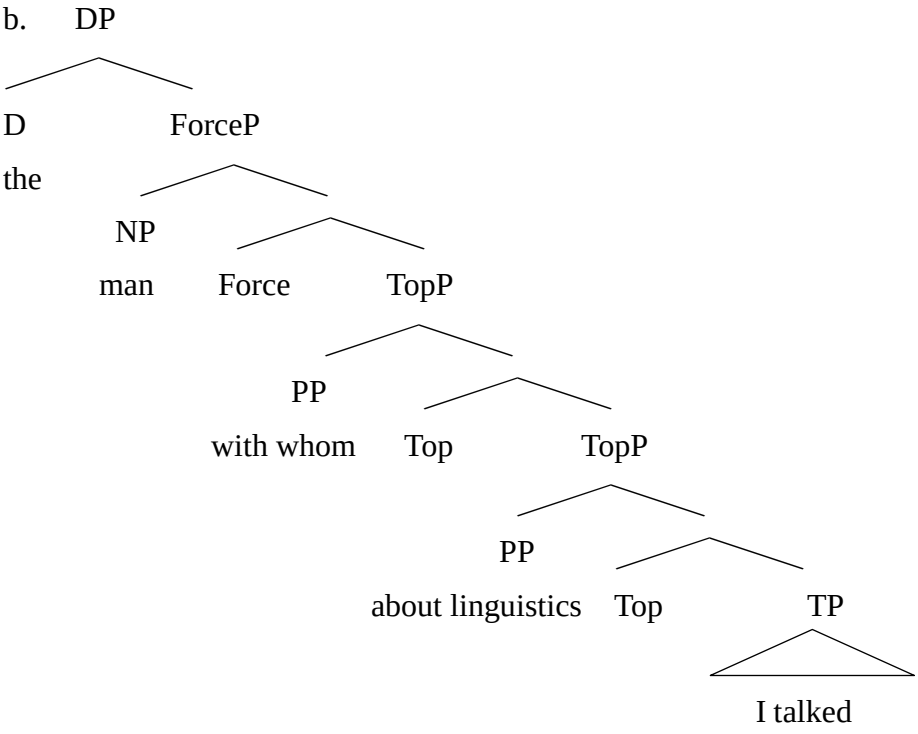
b. This is the man [with whom, *about linguistics*, I talked.]

In (21), Topicalization occurs in the finite relative clauses, and the PP *next year* and the PP *about linguistics* occupy the specifier of TopP.[3] These structures are shown in (22).

(22) a.



b.



The structures in (22) pose two problems. First, we assume with Richards

(2010) that the head Force is a phase head and Transfers its complement the highest TopP. The PP *with whom* and the PPs *next year* or *about linguistics* are in the same Spell-Out domain and the resulting linearization statement is <PP, PP>. This statement violates the Distinctness condition. Therefore, Richards incorrectly predicts that this sentence is ungrammatical. Second, generally, multiple Topicalization in English is banned as shown in (23)

(23) a. **This book*$_i$, *to Robin*$_j$ I gave t_i t_j.

(Culicover (1991:31))

b. **Last year*, *in St. Louis*, we were living.

(Culicover (1991:33))

English has only a single TopP, and, therefore, multiple Topicalization in (23) cannot occur. The sentences in (21), however, are grammatical and the structures (22) may be incorrect.

4.4. Salvaging the Distinctness Condition

In this section, I will try to solve these problems. As a whole, I follow Bianchi (1999) and Richards (2010), but I will modify the structure (22) by my proposal in section 2. My proposal assumes that finite CP clauses can have rich layered functional projections while infinitival CP clauses cannot, as shown in (24).

(24) a. Finite CP = [ForceP [TopP [FocP [FinP [TP ...

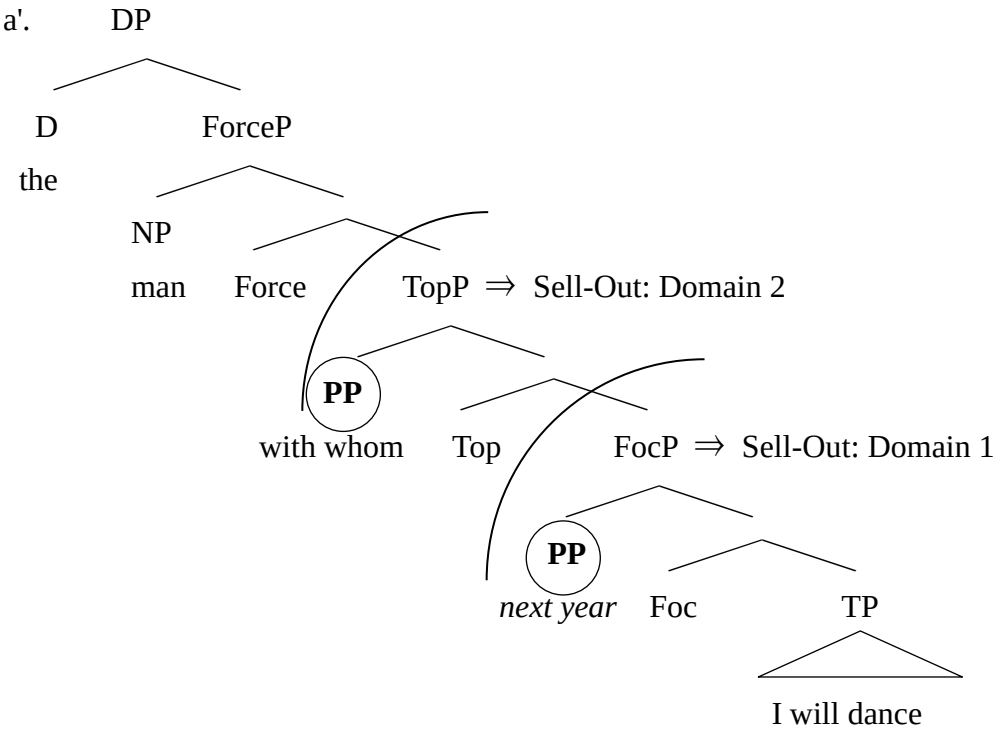
b. Infinitival CP = [ForceP [FinP [TP ...

Defective

Finite CP clauses can have the Split CP structure, while infinitival CP clauses cannot have TopP and FocP, and thus they are defective. In accordance with (24), I give sentence (21a) the following structure:

(25) a. This is the man [with whom, *next year*, I will dance.] (= (21a))

a'.



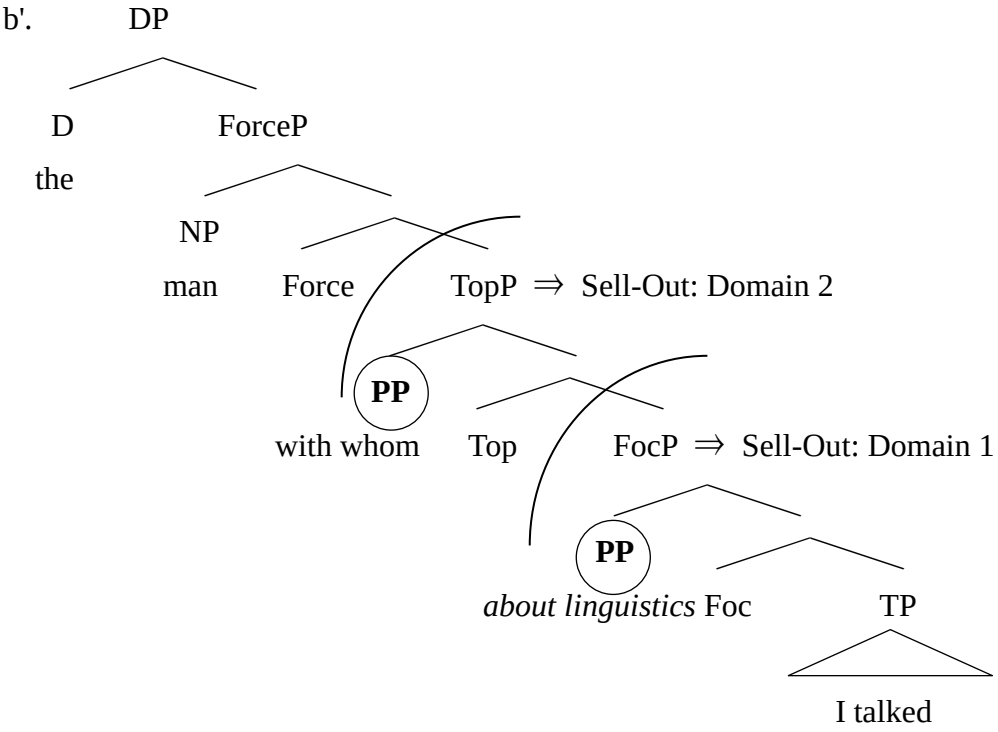
In (25a), the PP *with whom* occupies the specifier of TopP and the PP *next year*, the specifier of FocP. The phase heads Force and Top trigger Spell-Out, send their complements TopP and FocP into the PF, and both heads form Spell-Out domains,

Domain 1 and Domain 2, as shown in (24a'). Each domain has no linearization statement problematic for Distinctness. In particular, the PP *next year* is in the Domain 1 while the PP *with whom* is in the Domain 2, and, therefore, this derivation does not have a problematic linearization statement <PP, PP> for the Distinctness condition.

In the same way, sentence (21b) has the following structure:

(25) b. This is the man [with whom, *about linguistics*, I talked.] (= (21b))

b'.



In (25b), the PP *with whom* occupies the specifier of TopP and the PP *about linguistics*, the specifier of FocP. The phase heads Force and Top Spell-Out their complements TopP and FocP into PF, and then each phase head forms Spell-Out domains, Domain 1 and Domain 2, as shown in (25b'). The linearization statements in both domains do not violate the Distinctness condition because the PP *with whom* and the PP *about*

linguistics are not in the same Spell-Out domain. Therefore, my proposal can solve the two problems for Richards (2010).

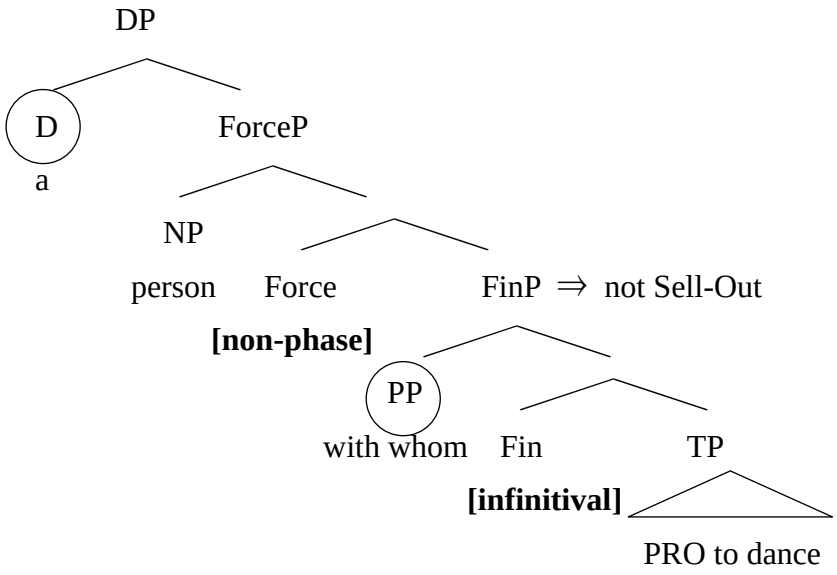
In addition to this, my proposal can explain the asymmetry between finite relative clauses and infinitival relative clauses in (17) (repeated as (26) below). Infinitival relative clauses in (26) have the following structures (27) under my proposal.

(26) a. [$_{DP}$ a person][$_{PP}$ with whom] to dance

b. *[$_{DP}$ a person][$_{DP}$ whom] to admire

(27) a. [$_{DP}$ a [$_{ForceP}$ [$_{NP}$ person][Force$_{\textbf{[non-phase]}}$ [$_{FinP}$ [$_{PP}$ with whom] Fin $_{\textbf{[infinitival]}}$ [$_{TP}$ PRO to dance]]]]]

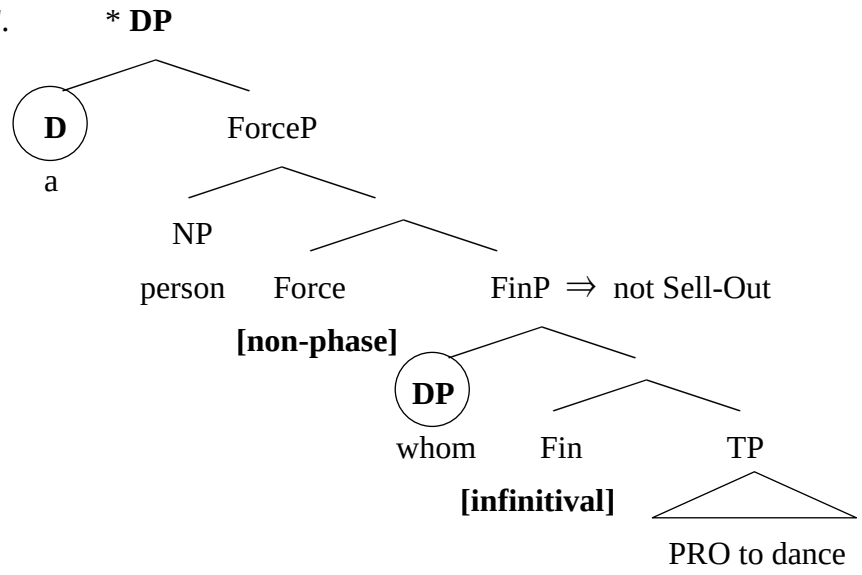
a'.



b. *[$_{DP}$ a [$_{ForceP}$ [$_{NP}$ person][Force$_{\textbf{[non-phase]}}$ [$_{FinP}$ [$_{DP}$ whom] Fin $_{\textbf{[infinitival]}}$

[$_{TP}$ PRO to dance]]]]]

b'.



In (26a), the head Force in infinitival relative clause is not a phase head, cannot trigger Spell-Out, and does not send its complement FinP into the PF component. Although the DP as a whole is a Spell-Out domain, the domain has no problematic linearization statements, and does not violate the Distinctness condition. As a result, (26a) is grammatical. In the same way, in (27b), the head Force in infinitival relative clause is not a phase head, and cannot Spell-Out its complement FinP into the PF. The DP as a whole is a Spell-Out domain. This Spell-Out domain in (27b), however, has a troublesome linearization statement <DP, DP>, which violates the Distinctness condition, and therefore, (26b) is ungrammatical.

In this section, I have presented my alternative analysis to solve the two problems with Richards (2010) pointed out in section 3.

4.5. Conclusion

In this chapter, I discussed the difference between finite CP and infinitival CP clauses. In particular, I argued that finite CP clauses have layered functional structures while infinitival CP clauses have defective functional structures. Moreover, I proposed that the head Force in finite CP clauses behaves as a phase head while the head Force in infinitival CP clauses does not. I implemented my proposal, utilizing the Distinctness condition proposed by Richards (2010). The condition, however, has two problems under the original framework of Richards (2010). One is that when the same labeled syntactic objects are in the same Spell-Out domain, this linearization statement <XP, XP> cannot be read at the PF, but sentences are grammatical. The second problem is Topicalization in relative clauses. I demonstrated that my proposal can deal with these problematic cases.

Notes to Chapter 4

* This chapter is a modified version of Totsuka (2014).

1. For the phasehood of PPs, see Abels (2003), Drummon, Hornsten and Lasnik (2010), Kayne (2004).

2. In this chapter, I owe the judgment of sentences with no reference to my informants.

3. Following Larson (1985), I assume that the bare-NP adverb *next year* is PP.

Chapter 5

Conclusion

In this thesis, I investigated how we can unify the Minimalist approach and the Cartographic approach. To tackle this issue, I began with the more specific question of which head of the left-peripheral functional categories purported under the Cartographic approach is a phase head in the sense of Minimalism. As an answer for this question, I proposed that the heads Force and Top are phase heads while the heads Foc and Fin are not. I demonstrated that my proposal provides systematic accounts for a wide variety of phenomena: three asymmetries between Topicalization and Focalization in English (chapter 2); Aux-drop and gapping in English, Particle Stranding Ellipsis in Japanese, Colloquial Topic-drop in German, Subject-drop in English (chapter 3); differences in syntactic behaviors between finite CP clauses and infinitival CP clauses (chapter 4). The results of this research, I believe, demonstrate that it is promising to analyze linguistic phenomena in terms of the phase-theoretic notions of the Minimalist approach on the basis of the syntactic structures proposed under the Cartographic approach. In light of these encouraging results, we should pursue further research toward fundamental unification of the two approaches.

Although I have mainly focused on the structure of English in this thesis, many language are now being analyzed in terms of the Cartographic approach (Aboh (2003, 2010), Bennicà and Poletto (2004), Brugé, Cardinaletti, Giusti, Munaro, and Poletto (2012), Cardinaletti, Cinque, and Endo (2014), Cruschina (2012), Ishizuka (2012), Soare (2009), Svenonius (2014), Tsai (2008)). For example, there are interesting studies of Japanese by Endo (2012) and Saito (2012). They have made

minute investigations of the Japanese right periphery, and proposes the following structures:

(1) CP = [$_{\text{ReportP}}$ … [$_{\text{ForceP}}$ … [$_{\text{TopicP*}}$ … [$_{\text{FiniteP}}$ … Finite (*no*)] (Topic*)]
Force (*ka*)] Report (*to*)]

(Saito (2012: 173))

(2) Voice < Aspect < Polarity < Tense < Speaker's Mood < Interpersonal Mood

(Endo (2012: 366))

It is undoubtedly important to investigate which head of the right-peripheral functional categories by their analyses serves as a phase head, but I leave this issue for future research.

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