

Mono-clausality in Japanese Obligatory Control Constructions

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General Paper
Ling 895

February 2001

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Abstract

This paper examines the status of control clauses in Japanese, in particular, whether or not they are headed by T^0 . The syntactic and semantic evidence shows that obligatory control complements are not headed by T projection. This is unexpected given the assumption that an obligatory PRO is assigned null Case by T. (Chomsky & Lasnik, 1993 and Martin, 1996). On the other hand, if PRO is a residue of NP movement under Hornstein (1999, 2000), there are no difficulties with Case agreement, since there is no obligatory control PRO in the relevant control complements. In addition, the lack of T in the control complement accounts for the observation that scrambling out of control clause behaves like clause-internal scrambling (Saito, 1992, 1994; Nemoto, 1993; among others). Furthermore, A-scrambling out of a control clause can be captured by the two proposals: i) scrambling is a derivation by phase (Chomsky 1998, 1999), and ii) restructuring can cancel the status of a head as a strong phase.

1 Introduction

This paper examines the status of control clauses in Japanese. The main concern is whether or not control complements are headed by T.^{1,2} Japanese control verbs can be divided with respect to their selections of complements. (1) to (5) show a typology of the complement selections of Japanese control verbs.

- (1) In a V-V compound verb, the right-hand member selects a control

¹ T is a defective T under the assumption developed by Chomsky (1998, 1999). The defectiveness in T does not affect the discussion here, since this paper claims that there is not such T projection, at least in Japanese obligatory control complements. See Section 4.1 and 5.3 for more discussion.

² This paper focuses only on control complements, ignoring the cases of control adjuncts. I leave this for future research. As for recent research on control adjuncts, see Kuroda (1992, Chapter 7), Miyagawa (1986), Koizumi (1995), Takahashi (1997), among others.

complement headed by a left-hand element of a compound verb.³

e.g. John₁-ga [[PRO₁ sono ronbun-o yomi] wasureta].
John-Nom the paper-Acc read forgot
'John forgot to read the paper.'

Examples of this type of verb: *wasureru* 'forget'; *kaneru* 'hesitate'; *sokoneru* 'fail'; *naosu* 'redo'; *hajimeru* 'start'; *oeru* 'finish'; *tudukeru* 'continue'.

(2) Verbs followed by a particle *te* or its allophone *de*.

e.g. John₁-wa [[PRO₁ sono ronbun-o yon] de] mita.
John-Nom the paper-Acc read to tried
'John tried to read the paper.'

Examples of this type of verb: *miru* 'try'; *hosii* 'want'; *kureru*, *ageru* 'give'; *morau* 'receive'.⁴

(3) Verbs followed by a 'subjunctive' *yooni*.⁵ Object control is established.

³ Kageyama (1989) discusses the distinction between lexical and syntactic compounding. He offers a diagnosis for syntactic compounding; syntactic compounds are allowed to co-occur with a pro verb phrase *soo-si* 'do so' and a honorific expression *o-Verb-ni nari*, as in (i) and (ii) respectively.

(i)	Lexical compounds: <i>kaki-komu</i> 'write-insert'	→	* <i>soo-si-komu</i>
	Syntactic compounds: <i>kaki-wasureru</i> 'write-forget'	→	<i>soo-si-wasureru</i>
(ii)	Lexical compounds: <i>kaki-komu</i> 'write-insert'	→	* <i>o-kaki-ni-nari-komu</i>
	Syntactic compounds: <i>kaki-wasureru</i> 'write-begin'	→	<i>o-kaki-ni-nari-wasureru</i>

⁴ The verbs, *kureru* and *ageru*, in a control construction, correspond to English benefactive verbs. The subject's action expressed in the complement clause is given to the speaker in the case of *kureru*, and to the non-speaker in the case of *ageru*, as a benefit.

(i) ani₁-ga [[PRO₁ zityensya-o naosi] te] kureta/agea.
My brother-Nom bike-Acc fix to gave
'My brother fix the bike for me/my friend.'

The verbs, *morau*, in a control construction, corresponds to an English causative 'get' as in 'John got Mary to read that book.' The subject receives the benefit of the dative object by the dative object doing something for the subject.

(ii) John-ga Mary₁-ni [[PRO₁ sono hon-o yon] de] moratta.
John-Nom Mary-Dat that book-Acc read to received
'John got Mary to read that book.'

⁵ See Section 3.5 for the status of *yooni*.

e.g. John-ga Mary₁-ni [[PRO₁ sono ronbun-o yomu] yooni] itta.
John-Nom Mary-Dat the paper-Acc read to told
 ‘John told Mary to read the paper.’

Examples of this type of verb: *iu* ‘tell’; *tanomu* ‘ask’; *meizuru* ‘order’;
settokusuru ‘persuade’; *tugeru*, ‘inform’; *susumeru* ‘recommend’.

- (4) Verbs followed by a complementizer *to*, which heads a modal verb.

e.g. John₁-ga [[PRO₁ sono ronbun-o yom-oo] to]
John-Nom the paper-Acc read-Intention Mod Comp
kokoromita.
tried
 ‘John tried that he would read the paper.’

Examples of this type of verb: *suru* ‘do’; *kokoromiru* ‘try’; *tanomu*, ‘ask’;
meizuru ‘order’.

- (5) Verbs followed by a *koto* complementizer.

e.g. John₁-ga [[PRO₁ ronbun-o kaku] koto-o] kokoromita.
John-Nom paper-Acc write fact-Acc tried
 ‘John tried that he wrote a paper.’

Examples of this type of verb: *kokoromiru* ‘try’; *tanomu* ‘ask’; *kobamu*
 ‘refuse’; *erabu* ‘choose’; *susumeru* ‘recommend’.

As shown in the next section, these five types can be classified either into cases where the embedded null subject is an obligatory control PRO (henceforth OC PRO) or the cases where the embedded null subject is a non-obligatory control PRO (henceforth NOC PRO). Furthermore, I offer syntactic and semantic evidence that the former cases do not include T as head of the embedded clauses. If this claim is on the right track, it poses a problem for the assumption that the distribution of OC PRO should be accounted for in terms of null Case checking by T (Chomsky & Lasnik 1993; Martin 1996). If there is no T position to assign null Case to PRO, we should not find a PRO element in these constructions. This problem disappears, however, if OC PRO is a residue of NP movement (Hornstein 1999, 2000). Under the latter view, to derive and interpret the control relationship,

we do not have to rely on the existence of T as a Case assigner.

As a consequence, we can conclude that Japanese control constructions, at least the cases in (1) to (3), are mono-clausal. I define a 'mono-clause' as involving a CP, a TP, and one or more vP's. Since Japanese OC complements lack a TP, they can combine with a higher clause that involves CP and TP to make a clausal domain. It is what we call restructuring.

This property of control constructions hints at a possible solution to the following long-standing question regarding scrambling; why is A-scrambling out of a control configuration possible? The answer is simple - OC constructions in Japanese are mono-clausal. I will discuss this answer along with the assumption of derivation by phase (Chomsky 1998, 1999). Scrambling out of control complements can be accounted for by the interaction between derivation by phase and interpretation at the phase when a phrase is scrambled.

The paper is organized as follows. Section 2 will determine which control construction in (1) to (5) involves an obligatory control PRO in the embedded clause, by focusing on the OC PRO diagnosis outlined in Hornstein (1999). Section 3 provides syntactic and semantic evidence for the assumption that the OC complements are not headed by T. Section 4 and 5 will discuss theoretical implications of the conclusion the previous sections reach. In Section 4, the absence of T in control complements is unexpected if PRO is assigned by T, but it is unproblematic for the assumption that OC PRO is a trace of NP. In addition, I will give some critiques to Wurmbrand (1998, 2000), who assumes that OC verbs select VP. In Section 5, the mono-clausal control constructions provide us with a theoretical account for the observation that scrambling out of a control clause behaves like clause-internal scrambling (Saito 1992, 1994; Nemoto, 1996). This can be predicted in terms of evaluation in a phase where the embedded clause lacks T. Section 6 is a brief conclusion.

2 The status of PRO in control complements

Hornstein (1999) summarizes some diagnostics for deciding if an embedded subject in a control complement is an OC PRO. This section applies these tests to

the cases classified in (1) to (5) in the previous section. These diagnostics point to the conclusion that (1) to (3) are OC PRO cases while (4) and (5) are NOC PRO cases. Section 2.1 examines the former, Section 2.2 the latter.

2.1 Cases where an OC PRO is involved

(6) shows examples of the types (1) to (3), which, we will see, display the diagnostics of the obligatory control constructions involving OC PRO. The first type of control complement is seen in (6a). The first verb, *yomi*, is the head of the complement of the second verb *sobireta* 'failed'. *John* is the subject controller of PRO. The second type of control complements are headed by a participle *te/de*.⁶ This type can appear either in subject control as in (6b) or object control as in (6c). The third type, as in (6d), the control complement is headed by a subjunctive *yooni*. This type permits only object control constructions. See Section 3.5 for the status of *yooni*.

- (6) a. John₁-ga [[PRO₁ sono ronbun-o yomi] sobireta].
John-Nom that paper-Acc read failed
 'John failed to read that paper.'
- b. John₁-ga [[PRO₁ sono ronbun-o yon] de] mita.
John-Nom that paper-Acc read to tried
 'John tried to read that paper.'
- c. John-ga Mary₁-ni [[PRO₁ sono ronbun-o yon] de] moratta.
John-Nom Mary-Dat that paper-Acc read to received

⁶ Following Bloch (1946), *te* is classified as a gerund form of participles. Furthermore, Sugioka (1984) argues for the morphological independence of the complement and the main predicate. She uses the fact that particles such as *wa* and *mo* can intervene between the two predicates. Matsumoto (1996: 45) supports her assumption by using repetitive constructions which allow only the main verb to be repeated, as follows.

- (i) John-wa Mary-ni ki te hosikatta koto wa hosikatta.
John-Top Mary-Dat come to wanted thing-Foc wanted
 'John did want Mary to come.'

Following them, I assume that *te* is a gerund participle somehow independent of main predicate.

‘John got Mary to read that paper.’

- d. John-ga Mary₁-ni [[PRO₁ sono ronbun-o yomu] yooni] itta.
John-Nom Mary-Dat that paper-Acc read to told
‘John told Mary to read that paper.’

To see if the embedded subject in all the types in (6) is an OC PRO, let us apply the OC PRO diagnosis summarized by Hornstein (1999). Consider the following paradigm.

- (7) a. John₁-ga [PRO₁ zibunzisin_{1/*2}-o home-]sobireta.
John-Nom himself-Acc praise-failed
‘John failed to praise himself.’
b. John₁-ga [[PRO₁ zibunzisin_{1/*2}-o home] te] mita.
John-Nom himself-Acc praise to tried
‘John tried to praise himself.’
c. John₁-ga Mary₂-ni [[PRO₂ zibunzisin_{1/2/*3}-o homeru]
John-Nom Mary-Dat himself/herself-Acc praise
yooni] tanonda.
to asked
‘John asked Mary to praise himself/herself.’
- (8) a. Bill₁-wa [John₂-ga [PRO₂ zibunzisin_{*1/2}-o home-] sobireta]
Bill-Top John-Nom himself-Acc praise-failed
to] omotta.
Comp thought
‘Bill thought that John failed to praise himself.’
b. Bill₁-wa [John₂-ga [[PRO₂ zibunzisin_{*1/2}-o home] te] mita
Bill-Top John-Nom himself-Acc praise to tried
to] omotta.
Comp thought
‘Bill thought that John tried to praise himself.’
c. Bill₁-ga [John₂-ga Mary₃-ni [[PRO₃ zibunzisin_{*1/2/3}-o
Bill-Nom John-Nom Mary-Dat himself/herself-Acc

- homeru] yooni] itta koto-o] sitteiru.
praise to told that-Acc knew
 'Bill knew that John told Mary to evaluate himself/herself.'
- (9) a. [Mary₁-no hahaoya]₂-ga [PRO₂ zibunzisin*_{1/2}-o home-] sobireta.
Mary-Gen mother-Nom herself-Acc praise-failed
 'Mary's mother failed to praise herself.'
- b. [Mary₁-no hahaoya]₂-ga [[PRO₂ zibunzisin*_{1/2} -o home] te] mita.
[Mary-Gen mother]-Nom herself-Acc praise to tried
 'Mary's mother tried to praise herself.'
- c. [Mary₁-no hahaoya]₂-ga John₃-ni [[PRO₃ zibunzisin*_{1/2/3}-o
[Mary-Gen mother]-Nom John-Dat him/herself-Acc
 homeru] yooni] itta.
praise to told
 'Mary's mother told John to praise him/herself.'
- (10) a. John₁-ga [PRO₁ kaeri-] kaneta node, Bill-mo soo sita.
John-Nom leave hesitated so that Bill-also so did
 'John hesitated to leave, and Bill did too.' = Bill hesitated to leave.
- b. John₁-ga [[PRO₁ zibunzisin-o home] te] mita node,
John-Nom himself-Acc praise to tried so that
 Bill-mo soo sita.
Bill-also so did
 'John tried to praise himself and Bill did too.'
 (= Bill tried to praise himself.)
- c. John₁-ga Mary₂-ni [[PRO₂ kare₁-o homeru] yooni] itta node,
John-Nom Mary-Dat him-Acc praise to told so that
 Bill-mo soo sita.
Bill-also so did.
 'John told Mary to praise him and Bill did, too.'
 (=Bill told Mary to praise him.)
- (11) b. John₁-ga Mary₂-ni [[PRO*₁₊₂ otagai -o hyookasi] te]
John-Nom Mary-Dat each other-Acc evaluate to

moratta.

received

'John got Mary to evaluate each other.'

- c. John₁-ga Mary₂-ni [PRO*₁₊₂ otagai -o hyookasuru yooni] itta.
John-Nom Mary-Dat each other-Acc evaluate to told
'John told Mary to evaluate each other.'

(7) shows that OC PRO must have an antecedent.⁷ (8) indicates that this antecedent must be local, and (9) that it must c-command the PRO. (10) shows that OC PRO only permits a sloppy interpretation under ellipsis. (11) points out that OC PRO cannot have split antecedents.⁸

There are two more tests for OC PRO. Consider (12) with a context in which Mary was one of the judges for the beauty contest, and John sent an application with Mary's picture without notifying her. The picture was so professionally done that Mary did not recognize that it was a picture of herself, when she judged that picture. In this context, (12) is false because PRO in (12) demands *de se* interpretation. It is impossible since Mary did not notice that the woman in the picture was herself.

- (12) a. Mary₁-ga [PRO₁ zibun-no syasin-o erabi-]kaneta.
Mary-Nom self-Gen picture-Acc choose-hesitated
'Mary hesitated to choose her picture.'
- b. Mary₁-ga [[PRO₁ zibun-no syasin-o eran] de] mita.
Mary-Nom self-Gen picture-Acc choose to tried
'Mary tried to choose her picture.'

⁷ In (7c), note that there is an ambiguity in control antecedents between the subject and the dative object. This fact is very crucial in discussing the status of this control structure. Section 3.1 will provide a discussion.

⁸ Notice that (11a) is missing. This test is not applicable to the type of compound verbs, simply because we cannot find any ditransitive control verbs which occur as the second member in the compound structure.

- c. John-ga Mary₁-ni [[PRO₁ zibun-no syasin-o erabu]
John-Nom Mary-Dat herself-Gen picture-Acc choose
 yooni] settokusita.
to persuaded
 'John persuaded Mary to choose her picture.'

The last test is whether or not PRO has the bound reading with *only*. Consider (13).

- (13) a. John₁-dake-ga [PRO₁ sono ronbun-o yomi-] sobireta
John-only-Nom the paper-Acc read failed
 'Only John failed to read the paper.'
- b. John₁-dake-ga [[PRO₁ sono ronbun-o yon] de] mita.
John-only-Nom that paper-Acc read to tried
 'Only John tried to read that paper.'
- c. John-ga Mary₁-dake-ni [[PRO₁ sono ronbun-o yomu]
John-Nom Mary-only-Dat that paper-Acc read
 yooni] itta.
to told
 'John told only Mary to read that paper.'

PRO in (13a,b) has only the interpretation that 'only John is an x such that x failed/tried that x read the paper.' PRO in (13c) also has only the interpretation that 'only Mary is an x such that x was told that x read the paper.' In both cases, 'only DP' is a binder and an antecedent of PRO.

Thus, all these results of (7) to (13) show that the embedded subject in the cases of (6) is an OC PRO. From hereon, the control constructions classified into one of the cases of (6) are called 'obligatory control (OC) constructions'.

2.2 Cases where a NOC PRO is involved

As shown in (4) and (5), other types of control constructions take a complementizer *to* or a head noun *koto* as the head of a control complement. The examples are

repeated in (14a) and (15a). (14b) and (15b) are added as cases of object control.

- (14) a. John₁-ga [[PRO₁ sono ronbun-o yom-oo] to]
John-Nom the paper-Acc read-Intention Mood Comp
 kokoromita.
tried
 ‘John tried to read the paper.’
- b. John-ga Mary₁-ni [[PRO₁ sono ronbun-o yonde-kure]
John-Nom Mary-Dat the paper-Acc read-Imperative Mood
 to] tanonda.
Comp asked
 ‘John asked Mary to read that paper.’
- (15) a. John₁-ga [[PRO₁ ronbun-o kaku] koto-o] kokoromita.
John-Nom paper-Acc write fact-Acc tried
 ‘John tried to write a paper.’
- b. John-ga Mary₁-ni [[PRO₁ ronbun-o kaku] koto-o] tanonda.
John-Nom Mary-Dat paper-Acc write fact-Acc asked
 ‘John asked Mary to write a paper.’

Consider the following examples, and we will conclude that all these cases do not share the OC PRO properties examined in the previous section.

- (16) a. [[PRO zibunzisin-o hyookasi-yoo to]-wa daitan da]
oneself-Acc evaluate-IntMd Comp-Top bold Copula
 to sinzir-areteiru.
Comp believe-Pass
 ‘It is believed that evaluating oneself is bold.’
- b. [[PRO zibunzisin-o hyookasuru koto]-ga taisetū da]
oneself-Acc evaluate fact-Nom important Copula
 to sinzir-areteiru.
Comp believe-Pass

- 'It is believed that evaluating oneself is important.'
- (17) a. John₁-wa [[[[PRO₁ zibunzisin-o hyookasi-yoo to]-wa daitan
John-Top oneself-Acc evaluate-IntMd Comp-Top bold
 da] to] sinzireteiru] koto-o sitteita.
Copula Comp believe-Pass fact-Acc knew.
 'John knew that it is believed that evaluating himself is bold.'
- b. John₁-wa [[[[PRO₁ zibunzisin-o hyookasuru koto] -ga taisei
John-Top oneself-Acc evaluate fact-Nom important
 da] to] sinzireteiru] koto-o sitteita.
Copula Comp believe-Pass fact-Acc knew.
 'John knew that it is believed that evaluating himself is
 important.'
- (18) a. [Mary₁-no sensei]₂-ga [[PRO₁ sono ronbun-o hyookasi-yoo
Mary-Gen teacher-Nom that paper-Acc evaluate-IntMd
 to]-wa daitan da] to] omotta.
Comp-Top bold Copula Comp thought
 'Mary's teacher thought that evaluating that paper was bold.'
- b. [Mary₁-no sensei]₂-ga [[PRO₁ sono ronbun-o hyookasuru
Mary-Gen teacher-Nom that paper-Acc evaluate
 koto]-ga taisei da] to] omotta.
fact-Acc important Copula Comp thought
 'Mary's teacher thought that evaluating that paper was
 important.'
- (19) a. John₁-ga [PRO kare₁-o hyookasi-yoo to] kokoromita
John-Nom him-Acc evaluate-IntMd Comp tried
 node Bill-mo soo sita.
so that Bill-Nom so did
 (Lit.) 'John tried to evaluate himself, and Bill did, too.'
 (= Bill tried to evaluate John.)
- b. John₁-ga [PRO kare₁-o hyookasuru koto]-o kokoromita
John-Nom him-Acc evaluate fact-Acc tried

node Bill-mo soo sita.

so that Bill-Nom so did

(Lit.) 'John tried to evaluate himself, and Bill did, too.'

(= Bill tried to evaluate John.)

- (20) a. John₁-ga Mary₂-ni [[PRO₁₊₂ otagai -o hihansi-yoo]
John-Nom Mary-Dat each other-Acc criticize-IntMd
to] tanonda.
Comp asked
(Lit.) 'John asked Mary to criticize each other.'
- b. John₁-ga Mary₂-ni [[PRO₁₊₂ otagai -o hihansuru
John-Nom Mary-Dat each other-Acc criticize
koto]-o tanonda.
fact-Acc asked
(Lit.) 'John asked Mary to criticize each other.'
- (21) a. John-ga Mary-ni [[PRO zibun-no syasin-o erab-oo
John-Nom Mary-Dat self-Gen picture-Acc choose-IntMd
to]-wa daitan da to] itta.
fact-Nom bold Copula that told
'John told Mary that choosing her picture was bold.'
- b. John-ga Mary-ni [[PRO zibun-no syasin-o erabu
John-Nom Mary-Dat self-Gen picture-Acc choose
koto-ga] taisetū da to] itta.
fact-Nom important Copula that told
'John told Mary that choosing her picture was important.'
- (22) a. John-ga Mary-dake-ni [[[PRO kare-o makas-oo to]-wa
John-Nom Mary-only-Dat him-Acc beat-IntMd Comp-Top
muri da] to] itta.
impossible Copula Comp told
'John told only Mary that beating him is impossible.'
- b. John-ga Mary-dake-ni [[[PRO kare-o makasu koto]-wa
John-Nom Mary-only-Dat him-Acc beat fact-Top

muri da] to] itta.
impossible Copula Comp told
 'John told only Mary that beating him is impossible.'

(16) indicates that PRO does not require an antecedent. (17) shows that if it does have an antecedent, the antecedent need not be local. (18) demonstrates that the antecedent need not c-command the PRO. (19) indicates that a strict reading is allowed in the VP ellipsis. (20) indicates that split antecedents are available. To evaluate (21), recall the context set for (12). Mary did not notice that the woman in the picture was in fact herself. Unlike (12), (21) is true in this context. In other words, PRO in (21) still can have non-*de se* interpretation. PRO in (22) does not have to have only the meaning that 'only Mary is an x such that x was told that x beats John'. (22) can mean that John told only Mary that Mary beating him was impossible. In other words, 'Mary', not 'only Mary', can be an antecedent of PRO. All the results confirm that the embedded null subject in these cases is not an OC PRO, but a NOC PRO, i.e. a small pro.

In this section, the OC PRO diagnostics were applied to five types control complement clauses. The result leads us to conclude that the first three types listed in Section 1, i.e. (1) to (3), are classified as the cases where an OC PRO is involved while the latter two types, (4) and (5), are classified as cases where NOC PRO is involved. From hereon, we will focus on the former, OC PRO, cases. In the next section, we will examine whether or not the OC complement in (1) to (3) has T projection. The latter cases of NOC PRO, of course, include several interesting aspects. Section 5.3 will consider one of the NOC PRO constructions, the types in (4). We will especially discuss the interactions between a subjunctive complement and scrambling out of it. However, I leave most of interesting issues on NOC PRO cases for further research.

3 OC PRO distribution: No T projection in the complement

This section will provide four pieces of evidence for the claim that there is no T projection in an OC PRO complement in Japanese.

3.1 Anaphoric ambiguity

The first piece of evidence relates to anaphoric ambiguity. One Japanese reflexive pronoun, *zibunzisin*, must obey both the clause-internal constraint and the subject-oriented constraint. For both reasons, for instance, the anaphor in (23) is bound by *Bill*.⁹

- (23) John₁-wa [[Bill₂-ga Mary₃-ni zibunzisin_{*1/2/*3}-o subete sasageta] to] omotta
John-Top Bill-Nom Mary-Dat himself-Acc all devote that thought
'John thought that Bill devoted all of himself to Mary.'

Following the standard Binding Theory (Chomsky, 1981: 188 & 211), the governing category, the binding conditions and A-binding can be defined as below. Then, the anaphoric binding interpretation in (23) is properly accounted for, since the A-binding relation between *Bill* and *zibunzisin* is provided within the embedded clause as the governing category.¹⁰

- (24) a. Governing Category (GC)

β is a governing category for α if and only if β is the minimal category containing α , a governor of α , where $\beta=IP$.

- b. Binding Theory

Condition A: An anaphor must be bound in its GC.

⁹ In (23), some speakers permit the matrix subject to bind *zibunzisin* in the embedded clause. That is, some people can read *zibunzisin* not only as Bill but also as John. For them, the subject-oriented constraint is stricter than clause-internal constraint, since they seem to treat *zibunzisin* as an emphasizing version of *zibun*, which can make a long-distance anaphoric relation.

- (i) John₁-wa [[Bill₂-ga zibunzisin_{?*1/2}-o hihansita] to] omotta.
John-Top Bill-Nom himself-Acc criticized that thought
'John thought that Bill criticized himself.'

¹⁰ The subject-orientation constraint of interpretation of *zibunzisin*, has been a long-standing issue. See Katada (1991), Aikawa (1993), Motomura (2000) among others for analyses regarding to this constraint.

Condition B: A pronominal must be free in its GC.

Condition C: An R-expression must be free.

c. A-Binding

α can be bound by β if and only if: (i) α and β are coindexed; (ii)

β c-commands α ; and (iii) α is in an A-position.

Now let us consider anaphoric interpretations in OC cases. (25) and (26) are relevant examples of *te* and *yooni* constructions, respectively.¹¹

(25) John₁-ga Mary₂-ni [[PRO₂ zibunzisin_{1/2}-o hinansi] te] moratta.
John-Nom Mary-Dat himself/herself-Acc criticize to received
'John had Mary criticize himself/herself.'

(26) John₁-ga Mary₂-ni [[PRO₂ zibunzisin_{1/2}-o hinansuru] yooni] tanonda.
John-Nom Mary-Dat himself/herself-Acc criticize to asked
'John asked Mary to criticize himself/herself.'

Notice that the anaphoric binding interpretation is ambiguous in both cases. The anaphor can be interpreted either as the matrix subject or PRO controlled by the dative object. In addition, *Mary* controlling PRO is a subject of criticizing, and *John* is the subject of receiving/asking. Both antecedents also satisfy the subject-oriented condition. To get the interpretation that the matrix subject is the antecedent of the anaphor, under (24), the governing category must not be the embedded control clause, but the matrix clause. In other words, if INFL exists in the embedded clause, the anaphoric relation between the matrix subject and the lexical anaphor is impossible. It is possible only if the smallest IP is the matrix clause. Thus, the *yooni/te* clause is not headed by IP.¹²

¹¹ For the same reason noted in Note 8, the case of verbal control compounds does not provide any relevant evidence of the binding ambiguity, simply because we cannot find any ditransitive control verb which occurs as a second member in the compound structure.

¹² Although a few informants do not get the anaphoric ambiguity in (25) and (26), they accept the

How about a reciprocal anaphor? It seems that the same ambiguity arises. Consider (27) and (28).

- (27) Senseetati₁-ga gakuseetati₂-ni [[PRO₂ otagai_{1/2}-o syookaisi] te] moratta.
Teachers-Nom students-Dat each other-Acc introduce to received
 'The teachers had the students introduce each other.'
- (28) Senseetati₁-ga gakuseetati₂-ni [[PRO₂ otagai_{1/2}-o syookaisuru] yooni] itta.
Teachers-Nom students-Dat each other-Acc introduce to told
 'The teachers told the students to introduce each other.'

When the dative NP is an antecedent, the reading should be what the English translation indicates. The teachers said to the students, "Introduce each other." In Japanese, there is another interpretation in (27) and (28), such that the teachers can also be the introducees. The teachers said to the students, "Introduce your teachers to one another." In other words, the teachers told the students that the students should introduce their own teachers to each other. As discussed in the cases of *zibunzisin*, to get the second reading, under (24), the governing category is not the embedded clause but the matrix clause, where either of the antecedents can properly bind the reciprocal anaphor. If the governing category corresponds to the embedded control clause, the second reciprocal interpretation would never yield. Therefore, the embedded control clauses lack IP.

3.2 Negative Polarity Items

long-distance A-binding in the following examples, in where the dative NP cannot be an antecedent of the anaphor. The same argument holds in these cases. The smallest IP is the matrix clause.

- (i) John₁-ga iinkai₂-ni [[PRO₂ zibunzisin₁-o hinansi] te] moratta.
John-Nom committee-Dat himself-Acc criticize to received
 'John had the committee criticize himself.'
- (ii) John₁-ga iinkai₂-ni [[PRO₂ zibunzisin₁-o hinansuru] yooni] tanonda.
John-Nom committee-Dat himself-Acc criticize to asked
 'John asked the committee to criticize himself.'

The second piece of evidence comes from Japanese negative polarity items (henceforth NPI).¹³ Akiyama (1998) claims that the Japanese negative marker, *na* is an L-related head, by pointing out that the negative marker is an adjective expressing a negation of existence or possession. He also assumes that NPI's are moved to the Spec of NegP at LF so as to license the negation. That is, NPI movement is a kind of covert A-movement. Given this, the ungrammaticality of (29a) is expected, since the NPI in the object NP is improperly moved to the Spec of NegP at LF. As illustrated in (29b), the NPI cannot move beyond the subject NP in the embedded clause. This is a violation of the Minimal Link Condition (Chomsky 1995).¹⁴

- (29) a. *Boku-wa [John-ga nanimo taberu to] omowa-na-katta.
I-Top John-Nom nothing eat Comp think-Neg-Past
 'I did not think that John ate anything.'

- b. [_{NegP} NPI_i [_{Neg'} [_{VP} t_j [_{CP} [_{TP} SUBJ_k [_{VP} t_k t_i pro V] T] C] V] na]]
 (Akiyama 1998: 55)

Akiyama also compares (29a) with (30), where NPI can occur in the embedded clause. This fact can be predicted if PRO and the object NP are equidistant from the Neg in CP. This is an option if we assume with Akiyama, who follows Baltin (1995), that PRO is in the Spec VP. On the other hand, if we assume that TP exists in the embedded clause, PRO prevents NPI from moving to the Spec of NegP, due to the Minimal Link Condition. Therefore, (30) suggests that there is no TP in the

¹³ I thank Fumikazu Niinuma who led me to this evidence.

¹⁴ The definition of the Minimal Link Condition is stated as follows:

- (i) *Minimal Link Condition*
 K attracts α only if there is no β , β closer to K than α , such that K attracts β .
 (Chomsky 1995: 311)

embedded clause.¹⁵

- (30) John-wa [[PRO nanimo kat]-te oka-na-katta.¹⁶
John-Top nothing buy-Part keep-Neg-Past
'John did not buy and keep anything.' (Akiyama 1998: 55)

Consider (31), which shows examples where a compound control verb and the participle *de* construction are involved.

- (31) a. John-wa [PRO nanimo nomi]-tuke-na-katta.
John-Top nothing drink-used to-Neg-past
'John was not used to drinking anything.'
- b. John-wa [[PRO nanimo nom] de] mi-na-katta.
John-Top nothing drink to try-Neg-Past
'John did not try to drink anything.'

Differing from Akiyama's assumption that PRO is under VP, I assume that OC control clauses are under *v*P (cf. Section 4.3). Furthermore, I assume that accusative NP is overtly moved to the Spec *v*P in order to get the Case checked, along the lines of Johnson (1991) and Koizumi (1993, 1995). These assumptions properly predict that (31) is grammatical. Since PRO and the NPI are both in the Spec *v*P after the object-raising, PRO does not prevent the NPI from moving to the Spec NegP. (32) shows the structure where the NPI object is raised to the Spec *v*P.

¹⁵ Keep in mind that contrary to Akiyama, I do not assume PRO in the numeration. See Section 4.2.

¹⁶ Notice that the same participle, *te/de*, appears in (30). However, this is not the case where a control verb can take a control complement, which we are interested in. *Te/de* in (30), instead, is a conjunct, as we recognize it in the English translation. Another case where the same morpheme appears is a resultative construction, as below.

- (i) John-ga sono hon-o yon-de naita.
John-Nom that book-Acc read-Part cried
'John read that book and cried.'

Under this structure, the NPI is ready for movement to the Spec NegP at LF.

- (32) a. [TP John [NegP [vP nothing [vP PRO t_{nothing} drink]]-used-to Neg] T]
 b. [TP John [NegP [vP nothing [vP PRO t_{nothing} drink]] to try Neg] T]

On the other hand, if PRO is located in the Spec TP and the NPI is moved to the Spec vP, the sentences in (31) would be predicted to be ungrammatical, due to the violation of the Minimal Link Condition. Thus, this confirms that there is no TP in the OC control embedded clauses in (31).¹⁷

In (33), on the other hand, the *yooni* type of control construction behaves differently. This sentence is ungrammatical.

- (33) *John-wa Mary-ni [[PRO nanimo nomu] yooni] iwa-na-katta.
John-Top Mary-Dat nothing drink to tell-Neg-Past
 ‘John told Mary to drink nothing.’

In this case, even when the object NP is moved into the Spec vP for case-checking, the dative DP, *Mary-ni*, blocks the A-movement at LF. Since *yooni* type of control constructions always shows an object control interpretation, this ungrammaticality can be explained by the blocking effect.¹⁸ If this account is correct, we do not have to change our claim that there is no T projection in embedded control complement.

¹⁷ This supports that Castillo, Drury and Grohmann (1999) claim that non-finite T does not bear an EPP-feature. If we assume *Agree* under Chomsky (1998, 1999), T can Probe base-generated PRO with null Case and Agree with it.

¹⁸ Several informants judged (33) as grammatical. For them, the dative NP does not block NPI-movement at LF. There seem to be two possible accounts for this judgement. One is that those informants treat the relevant feature of NPI different from that of the dative NP. The Relativized Minimality does not prevent the object NP from licensing its NPI. The other account is that the object shift of NPI noun is scrambling. I will assume in Section 5 that scrambling is an adjunction. If we assume the minimal domain under Chomsky (1993), the object NP can raise from that adjunction position to the Spec position of matrix vP, due to the equidistance between the Spec of matrix VP where the dative NP is located and the Spec of embedded vP where the object NP is located. Given this, the Minimal Link Condition is not relevant.

- (38) Mary-ga nihongo-o/ga umaku hanas-eru.
Mary-Nom Japanese-Acc/Nom well speak-can
 'Mary can speak Japanese well.'

Niinuma (2000) argues that the nominative object in *tai* 'want-to' constructions is overtly moved to TP. We apply his analysis to the above case, if we assume that the second verb morpheme *-eru* can be stative and its Case property is optionally absorbed. When the Case property is absorbed, the object is overtly moved to the Spec of the inner TP, in a tucking-in style proposed by Richards (1997). This is illustrated below. An English gloss is used for convenience.

- (39) [TP Mary_i-Nom [TP Japanese_j-Nom [_{VP} [_{VP} t_i well t_j speak] can]] T]
-
- ▲
▲
|
1. subject-raising
2. Case-absorption
3. tucking-in

Now consider the following control sentence.

- (40) John-ga Mary-ni [PRO nihongo-[?]o/*ga motto umaku hanaseru]
John-Nom Mary-Dat Japanese-Acc/Nom much better speak-can]
yooni] meijita
to ordered
 (Lit.)'John told Mary that she should be able to speak Japanese better.'

The difference in judgement between the accusative object and the nominative object shows that there is no position for the object to raise overtly in order to check a nominative Case.²⁰ This follows if there is no T position in the *yooni* clause, and

²⁰ The accusative object is not judged as being perfect because of the interaction between the future implication of this type of control and the stativeness of the embedded verb. However, it is confirmed that there is a clear difference in judgement between the accusative and nominative objects.

hence no TP to move to where a nominative Case could be checked. That is, the nominative object is not permitted in such control constructions because a *yooni* clause is not headed by T.

To sum up, four pieces of evidence suggest that there is no T projection in the three control complements where an OC PRO is involved.²¹ (41) illustrates each structure. (41a) is a structure for control compound verbs, (41b) is a structure of subject control for *te* constructions, (41c) is one of object control for the constructions, and (41d) is a structure for *yooni* control constructions. These types of control constructions do not consist of two different TP clauses, but a mono-clause: a single clause headed by a single T.²²

²¹ There is another piece of evidence that can be retained only in the case of control compound verbs. This concerns the temporal interpretations they carry. Consider (i).

- (i) *Kyonen John-ga [PRO sono ronbun-o gonen mae-ni kaki] naosita
last year John-Nom the paper-Acc five years ago write fixed
 '(lit.) Last year John rewrote the paper that he wrote five years ago.'

The event of John's writing that paper must occur at the same time as the event of John's redoing it. (i) does not have reading such as that John wrote that paper five years ago and rewrote it last year. There is no temporal difference between the first and the second member of compound verb. This means that there is no T that could bind the tense of the first member. This might be a fifth piece of evidence for the claim that there is no T projection in the control embedded clause.

However, this argument does not seem to hold in the other two cases. This difference is interesting if the issue is how semantically tight the embedded clause keeps with the main clause. I think this is also relevant to the syntactic and semantic status of T and/or small *v* of the embedded clause. Since what the implications of these contradictions are remain unclear to me, I leave these data for future consideration.

²² Amy Weinberg (personal communication) points out that a set of NOC verbs shares three out of four pieces of evidence with OC PRO cases. The relevant verbs are verbs followed by an intentional or imperative modal auxiliaries, *(y)oo* and *kure*. Examples are given in (4) and (14a). To see how those verbs behave, consider the following examples.

- (i) John₁-ga Mary₂-ni [pro₂ zibunzisin_{1/2}-o home-ro to] mejjita.
John-Nom Mary-Dat oneself-Acc praise-ImpMd Comp ordered
 'John ordered Mary that pro praise him/herself.'
- (ii) John-ga [pro daremo home-yoo to] si-na-katta.
John-Nom nobody praise-IntMd Comp do-Neg-Past
 'John tried that pro would praise nobody.'
- (iii) *John-ga [pro naze Mary-o home-yoo to] kokoromita no.

- (41) a. [TP NP_i [_{vP2} t_i [_{vP1} PRO_i [_{VP...V1} v1] V2] v2] T]
 b. [TP NP_i [_{vP} t_i [_{VP} [_{PartP} [_{vP} PRO_i [_{VP ... V} v] *te*] V] v] T]
 c. [TP NP_i [_{vP} t_i [_{VP} NP_j [_{VP} [_{PartP} [_{vP} PRO_j [_{VP ... V} v] *te*] V] v] T]
 d. [TP NP_i [_{vP} t_i [_{VP} NP_j [_{ModP} [_{vP} PRO_j [_{VP ... V} v] *yooni*] V] v] T]

3.5 The status of *yooni* and tense/aspect morphemes

Before discussing the theoretical implications of (41), it is important to consider the status of *yooni* and its complement. This is because the control embedded clause in (41d) appears to retain the possibility of a T position in the embedded clause, due to the apparent 'non-past' form of the embedded verb. However, the interaction between the status of *yooni* and the real status of the embedded verb prevents us from assuming a T in the embedded control clause.

First, consider the status of *yooni*. I follow Uchibori (1996), who claims

John-Nom why Mary-Acc praise-IntMd Comp tried Q
 'Why did John try that pro would praise Mary t.'

In (i), the anaphoric ambiguity is observed. In (ii), NPI can be licensed in the matrix clause. In (iii), the adjunct *why* cannot modify the embedded event. These examples suggest that the same argument we made in this section might hold in a specific case of NOC verbs. That is, this particular construction lacks T in the control complement. However, recall that Section 2.2 concluded the empty embedded subject as an NOC PRO. Now consider the following examples.

- (iv) John₁-ga Mary₂-ni [Bill₃-ga zibunzisin_{1/3}-o home-ro to] mejjita.
John-Nom Mary-Dat Bill-Nom oneself-Acc praise-ImpMd Comp ordered
 'John ordered Mary that Bill should praise him/herself.'
 (v) *John-ga [Mary-ga Bill-o home-yoo to] kokoromita.
John-Nom Mary-Nom Bill-Acc praise-IntMd Comp tried
 'John tried that Mary would praise Bill.'

As in (iv), the overt subject can appear in the cases of object control, whereas it cannot in those of subject control, seen in (v). This suggests that object control cases of this type of verbs can T projection in the control complement while subject control cases do not. Section 5.3 is ready to discuss the object control cases of (i) and (iv) as a subjunctive construction. I will leave the issue on the interaction between lack of T and pro for a further research. However, I want to emphasize that the facts of (i) to (iii) do not weaken the claim made in this section because they show that an OC construction in Japanese lacks T in the complement.

that it is a subjunctive auxiliary.²³ She presents (42) as evidence that *yooni* is not a complementizer. *Yooni* can be a main auxiliary verb when it appears in a main clause to express duty or advice. This suggests that *yooni* signifies a kind of non-indicative modality, which she calls 'subjunctive'.²⁴

- (42) Hon-o takusan yom-u yooni *(to).
Book-Acc many read-nonpast modal-aux Comp
 'You should read many books.' (Uchibori 1996: 407)

The second concern is whether or not an embedded verb in a *yooni*

²³ This assumption is different from what I made in Aoshima (2000a), which follows Teramura (1983)'s assumption that *yoo(ni)* is a modal noun. I thank Peter Svenonius, who first pointed out the defects in my original arguments.

²⁴ However, I part from Uchibori's claim that *yooni* heads a subjunctive CP. She assumes that a complementizer *to* selects *yooni*, by showing the following example.

- (i) Koochyoo-ga sensei-ni [e seito-o home-ru -yoo(ni(-to))]
Principal-Nom teacher-Dat student-Acc praise-nonpast
 meiji/motome/susume-ta.
order/require/urge-past
 'The principal ordered/required/urged the teachers to praise the students.'
 (Uchibori, 1996; 406)

When *to* appears with *yooni*, however, the sentence does not sound acceptable to several informants I asked, nor to me. I suggest that *to* co-occurring with *yooni* in the *persuade* type of verb is not a complementizer, but a quotation marker of actual speech. First, to accept the appearance of *to* in (i), there is a longer pause between *yooni* and *to* than a combination of other subjunctive complement and the complementizer. Secondly, as in (ii), a tag question particle can occur between *yooni* and *to*. This also suggests that *to* appearing with *yooni* is not a complementizer but a quotation marker of actual speech.

- (ii) John-ga Mary-ni 'hon-o takusan yomu yooni ne?'
John-Nom Mary-Dat books-Acc many read tag-Q
 to susumeta.
quotation marker suggested
 'John said to Mary, "Read many books, will you?"'

In addition, see Section 5.3 for discussion of her observation on other subjunctive CP structures: both of A-scrambling out of subjunctive complements and A-binding of local anaphor within it from the matrix clause are possible.

complement has a tense marker. It has been a long-standing issue whether the morphemes *-(r)u* and *-ta* are tense markers or aspect markers, as illustrated in (43a-b) and (43c-d), respectively.²⁵

- (43) a. John-wa itumo gakko-de ranti-o tabe-ru.
John-Top usually school-at lunch-Acc eat-Nonpast
 'John usually eats lunch at school.'
- b. John-wa gakko-de kinoo ranti-o tabe-ta.
John-Top school-at yesterday lunch-Acc eat-Past
 'John ate lunch at school yesterday.'
- c. John-wa ranti-o san-ji madeni tabe-ru
John-Top lunch-Acc three-o'clock by eat-Imperfect
 'John will have eaten lunch by three o'clock.'
- d. John-wa moo ranti-o tabe-ta.
John-Top already lunch-Acc eat-Perfect
 'John has already eaten lunch.'

Following Kunihiro (1982), I assume that *-(r)u/ta* are not tense morphemes but aspect morphemes, i.e. (43c-d) are the correct glosses. Interpretation of tense is decided pragmatically. The action is interpreted as non-past (present or future) when the imperfect-affixed verb is anchored to the utterance time. While, the action is interpreted as past when the perfect-affixed verb is anchored to the utterance time. Furthermore, following the standard Minimalist Program (Chomsky 1995, 1998), I assume that IP is divided into more than one projection: in this discussion, simply assuming TP and vP ,²⁶ and that the T system deals with tense interpretation while the v system deals with aspect interpretation. Following

²⁵ See Teramura (1984), Mihara (1992) and Ogihara (1999) for more discussion.

²⁶ We could assume AspectP as Cinque (1998) and Demirdache & Uribe-Etxebarria (1998) do. However, the important assumption in this discussion is that we split IP into TP and other(s), and that TP is for tense interpretation while the other(s) is not.

aspectual interpretation is established, under (44b). Notice that the complex head structure [_vV-*v*] is the head of the first phase. Under (45), the first phase undergoes interpretation when the second strong phase CP is formed. The complex head [_vV-*v*] is visible to T. Under (44c, d), the tense interpretation is allowed. When the imperfect interpretation in the head *v* is anchored to the utterance time, the action is interpreted as non-past (present or future). The action is interpreted as past when the perfect interpretation in the head *v* is anchored to the utterance time.²⁷

Let us now consider *yooni* constructions. First note that there are two issues to be resolved. In (47), only the imperfect morpheme can co-occur in the *yooni* complement. Why can the perfect marker appear not in the control clause? In addition, we do not want to get the result that the embedded clause can be anchored to the utterance time, which can thus introduce a tense interpretation in the embedded clause. How can we avoid inducing a tense interpretation in the embedded control clause?

- (47) John-ga Mary_i-ni [[PRO_i sono ringo-o tabe-u/*ta] yooni] itta.
John-Nom Mary-Dat that apple-Acc eat-Imperfect/Perfect to told
 ‘John told Mary to eat/*have eaten that apple.’

Under (44a), the embedded verb in a *yooni* complement has an aspect marker. As in (47), it must be the imperfect marker. The combination of the perfect marker and *yooni* is ill-formed. Why so? Recall that *yooni* is a subjunctive auxiliary verb. Subjunctive mood marks a clause as expressing something other than a statement of what is certain. On the other hand, the perfect marker specifies a verb added to it as an action considered as a completed whole. If the perfect formed verb is merged with the subjunctive auxiliary verb, the semantic incompatibility between being subjunctive and being perfect occurs and leads to unacceptability. The finished

²⁷ In Section 5.3, I will argue that T must incorporate into C in Japanese. If this discussion is on the right track, it corresponds to Kunihiro's assumption that the tense interpretation is determined pragmatically, as introduced at the beginning of this section.

When T is merged, it wrongly derives a tense interpretation in the embedded clause. Under (44d) and (45), the first phase undergoes interpretation at the second phase. If T exists, under (44c), the head of *v* with the imperfect aspect feature is anchored to the utterance time, resulting in the non-past tense interpretation. This is inconsistent with the semantic fact that the *yooni* control complement expresses something hypothetical or undone. In other words, using this derivation it would remain possible to imply that the event in the control complement is a present-tensed event. For instance, consider the following.

- (50) John-ga Mary-ni [PRO mainiti gakko-de ranti-o taberu yooni] itta.
John-Nom Mary-Dat every day school-at lunch-Acc eat to told
 'John told Mary to eat lunch at school every day.'

Notice that (50) does not imply that Mary eats lunch at school everyday. The embedded complement in (50) expresses her hypothetical event. However, when T in (49) triggers off non-tense interpretation by [-Perfect] of the aspect marker, it would yield a present interpretation such as habitual events. Thus, (49), where T exists in the embedded complement, does not illustrate a legitimate derivation.

To sum up, this section makes an objection against the claim that the embedded clause in *yooni* constructions involves tense interpretation. The interaction between the status of *yooni* and the assumptions in (44), in contrast, supports that the *yooni* clause lacks T projection, which is consistent with the conclusion in Section 3.

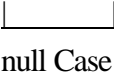
4 Null Case assignment approach versus NP movement approach

This section considers the theoretical implications of the claim that OC PRO control clauses have no T. I will compare two approaches to the distribution of OC PRO: several versions of the Null Case assignment approach (Chomsky & Lasnik 1993; Watanabe 1993; Martin 1996; Chomsky 1998, 1999; Raposo and Uriagereka 2000), and the NP-movement approach which Hornstein (1999, 2000) has proposed. Then I will conclude that the former fails to predict the distribution of


PRO involved in Japanese control complements, while the distribution of PRO under the latter approach is not problematic. In addition, I will criticize another approach to PRO distribution proposed by Wurmbrand (1998, 2000). She also points out that a syntactic control complement lacks TP, but she claims that it is headed by VP, not by vP/PartP/ModP, as I have proposed in (41).

4.1 Null Case assignment approach

Under the Null Case assignment approach, PRO must be Case-marked with null Case and that a null Case is licensed by a non-finite T⁰. Chomsky & Lasnik (1993), Lasnik (1993) and Martin (1996) assume that the T⁰ in infinitive control structures agrees with PRO and assigns it null Case. This is illustrated in (51).

(51) John tried [_{TP} PRO to leave].


Watanabe (1993) assumes a three-layer theory of Case checking. As in (52), C⁰ checks null Case.

(52) John tried [_{CP} e [_{AGR-SP} [_{TP} PRO to leave]].


On either assumption, the control complement is headed by T. However, as discussed in the previous section, Japanese OC complements are not headed by T. Under the null Case assignment hypothesis, a stipulation is needed that PRO could be Case-marked with null Case when vP, PartP (Participle Phrase) or ModP (Modal Phrase) agrees with PRO. This stipulation introduces a parameterized null Case assignment system. Consider (53).

(53) a. T/C agrees with PRO and assigns null Case.

seem that children would not produce and interpret any OC constructions properly until they learn relevant linguistic data, e.g. the long-distance anaphoric relation, A-license of NPI, modification of *why* only to the matrix clause, and no Nominative object in OC constructions.

Lastly, let us consider the Null Case assignment approach from the view of defectiveness of Tense. Chomsky (1998: 102) argues that T is defective if it is selected by V. Chomsky (1999: 5) also assumes that a defective T does not have a full set of phi-features. Raposo and Uriagereka (2000) claim, along the lines of Chomsky's assumptions, that the T system is implicated in the personal system. They assume that the difference between Complete T and Partial (defective) T corresponds to Complete DP and Partial DP which can be checked with its counterpart T. Partial DP, which is PRO in this discussion, lacks a person feature, but it still contains a number feature. Partial T has no person dimension, although it still has a number dimension. Then, PRO and Partial T can agree with each other in a legitimate structure, yielding a proper control structure.

Suppose that control T is partial or defective if it is selected by a Japanese control verb, and that the defective T has a partial set of phi-features. However, the evidence from Section 3 does not follow this simple-minded application to Japanese OC cases. For instance, in (56), Japanese permits long-distance A-binding in OC constructions whereas English does not. Furthermore, in (57), *why* can be adjoined into the embedded clause in English while *naze* cannot.

- (56) a. John₁-ga Mary₂-ni [[PRO zibunzisin_{1/2}-o homeru]
John-Nom Mary-Dat himself/herself-Acc praise
 yooni] itta.
to told
 'John told Mary to praise himself/herself.'
- b. John told Mary to praise *himself/herself.
- (57) a. *John-wa Bill-ni [**naze** sono syoo-o zitai-suru yooni] itta no?
John-Top Bill-Dat why that prize-Acc turn down to told Q
 'Why_i did John tell Bill [to turn down that prize t_i]?''

- b. Why_i did John tell Bill [to turn down that prize t_i]?

If these differences between Japanese and English OC structures relate to the degrees of defectiveness of the control T, there seems to need an assumption that Japanese T in OC complements is more defective than that in English. Japanese OC T is more defective so that it does not produce the governing category within the control complement in (56a), and that it cannot be modified by *why* adjunct in (57a). If there is no independent reason why English and Japanese control T are different in defectiveness, we again need to assume some parameterization framework. English parameter is set such that less defective T agrees with PRO while Japanese parameter is set such that more defective T agrees with PRO.^{30, 31}

4.2 The NP-Movement approach

The stipulations or modifications needed in any version of the Null Case assignment approach are avoidable if we assume that OC PRO is a residue of NP

³⁰ It is not easy to answer the question why Japanese control T (if it exists) is more defective than English control T. Extending Raposo and Uriagereka's claim that T system corresponds to D system with respect to completeness of dimensions of phi-features, i.e. person, number and gender, I suggest that being more defective is attributed from the stipulation that both control T and PRO lack both person and number features. I stipulate that Japanese control T and PRO have only categorial feature, which is something equivalent to gender feature as Chomsky assumes. Although I leave this issue for further research, I want to point out that Japanese PRO is somehow different from the English one. This stipulation does not seem implausible, since it is easy to find data to prove a more impoverished number agreement system in Japanese verbs and nouns. In contrast, Japanese has a very rich system of classifiers between nouns and numbers. That is, classifiers appearing with a numerical expression depend on the class of the nouns. (i) shows several examples.

- (i) a. san-**satu**-no hon 'three-Classifier-Gen books'
 b. san-**bon**-no pen 'three-Classifier-Gen pens'
 c. san-**wa**-no tori 'three-Classifier-Gen birds'

Japanese DP's are distinguished from English DP's in this regard. Japanese DP's have only [+category] as phi-features while English Full DP's have a complete set of phi-features. If PRO is a species of DP, it seems plausible to assume that Japanese PRO is different from English PRO. While English PRO contains [number], Japanese PRO bears a different feature, say, [category].

³¹ Also see Section 5.3 for the relevant discussion regarding defective T in subjunctive construction.

movement (Hornstein 1999, 2000 Chapter 2). There is no OC PRO element in the numeration; rather OC PRO is a residue of NP-movement. As there is no element PRO, it does not have to be assigned any Case. An OC PRO is identical to an NP trace. Hornstein (1999: 78) adopts the following assumptions.

- (58)
- a. Θ -roles are features on verbs.
 - b. Greed is Enlightened Self-Interest.
 - c. A D/NP “receives” a θ -role by checking a θ -feature of a verbal/predicative phrase that it merges with.
 - d. There is no upper bound on the number of θ -roles a chain can have.

Note that all in (58) are independently motivated. In particular, (58c) and (58d) are also motivated to explain some raising and control constructions in Chilean Spanish (Boskovic 1994) and long-distance A'-scrambling in Japanese (Boskovic and Takahashi 1998).

Under (58), let us derive the relevant cases in Japanese control constructions. (59) illustrates an example of derivations in the case where a control compound verb is involved.³² An English gloss is used for convenience.

- (59)
- a. [VP₁ John-Nom leave]
 - b. [VP₂ [VP₁ John-Nom t_{leave}] leave-hesitated]
 - c. [VP₂ John-Nom [VP₁ John-Nom t_{leave}] leave-hesitated]
 - d. [TP John-Nom [VP₂ ~~John-Nom~~ [VP₁ ~~John-Nom~~ t_{leave}] leave-hesitated]]
‘John hesitated to leave.’

The relevant numeration contains {*John-Nom*, *leave*, *hesitated*, *v1*, *v2*, *T*}, where no PRO exists. The derivation begins with *John-Nom* merging with *leave*, in (59a), thereby checking the verb's theta-role. In (59b), the other verb, *hesitated*, is merged. Then, as in (59c), *John-Nom* then moves (i.e. copies and merges) to the embedded Spec of vP₂, so that *John* checks a theta-role of *hesitated*. Under (58c), each time

³² See Section 5.2 for the reason why head-movement also takes place.

John-Nom merges with a verb, a theta-feature of a predicate is checked. *John-Nom* has two theta-roles as the leaver and hesitater, which is permitted by (58d). Moreover, in (59d), *John-Nom* moves one last time to Spec of TP of the matrix, where it checks the EPP, and T agrees with *John-Nom* and assigns it Nominative Case. After Spell-out, the c-commanding member of the subject copy remains at PF.

(60) is an example of derivations where object control is involved.

- (60) a. [vP Mary-Dat leave]
 b. [ModP [vP Mary-Dat t_{leave}] leave-to]
 c. [ModP [vP Mary-Dat t_{leave}] t_{leave-to}] leave-to-told
 d. [vP Mary_i-Dat [ModP [vP Mary-Dat t_{leave}] t_{leave-to}] leave-to-told]
 e. [TP John-Nom [vP Mary_i-Dat [ModP [vP ~~Mary-Dat~~ t_{leave}] t_{leave-to}] leave-to-told]]
 ‘John told Mary to leave.’

The relevant numeration contains {*John-Nom*, *Mary-Dat*, *leave*, *to*, *told*, *v*, *T*}. Note again that we have no PRO. In (60a), the derivation begins with *Mary-Dat* merging with *leave*, thereby checking the verb's theta-role. Next, as in (60b), the embedded vP merges with a noun head *yooni*. Then, as in (59c), the NP merges with a matrix verb, and *yooni* checks a propositional theta-role of *told*. Moreover, *Mary-Dat* moves to the matrix complement position of VP,³³ so that *Mary-Dat*

³³ This move violates Procrastinate under Chomsky (1995)'s framework, since *John-Nom* could have been inserted here. Had it been, the derivation would have not been able to converge. Consider the case where *John-Nom* is merged into Spec of the matrix VP. It then raises through *v* and up to the Spec of TP, where it checks its nominative Case and EPP. Assume that this type of dative Case is structural (cf. Sadakane & Koizumi 1995). The dative features on *Mary-Dat* need to be checked. This could be done by LF-moving to the outer of the matrix vP. (i) illustrates the LF structure.

- (i) [TP John-Nom [Mary-Dat [vP John-Nom [vP John-Nom [ModP [vP Mary-Dat t_{leave}] t_{leave-to}] leave-to-told]]]]

The derivation in (i) violates the MLC on the assumption copies of *John-Nom* by movement are

checks a theta-role of *told*, as in (60d). *Mary-Dat* has two theta-roles as the leaver and tellee. *Mary-Dat* also agrees with the matrix *v* and is assigned Dative Case. Eventually, as in (60e), *John-Nom* merges with the matrix *v* and moves to Spec of TP of the matrix, where it checks the EPP, and T agrees with *John-Nom* and assigns it Nominative Case.

These successful derivations show that Hornstein's approach to OC PRO as a residue of NP movement is plausible, and that abandoning null Case does not lead to any empirical difficulties in the relevant control cases. Moreover, we can dispense with the assumption that T agrees with PRO. This modification is wanted for deriving Japanese OC constructions where they do not bear T position in the control complement. It is unnecessary to stipulate a parameterized null Case assignment system as in (53) or (55), or degrees of defectiveness of control T. Consequently, we can maintain the structures as in (61), revised from the structures in (41) only with respect to the NP movement approach.

- (61) a. [TP NP_i [_{vP2} t_i [_{VP2} [_{vP1} t_i [_{VP...V1}] v1] V2] v2] T]
 b. [TP NP_i [_{vP} t_i [_{VP} [_{PartP} [_{vP} t_i [_{VP...V}] v] *te*] V] v] T]
 c. [TP NP_i [_{vP} t_i [_{VP} NP_j [_{VP} [_{PartP} [_{vP} t_j [_{VP...V}] v] *te*] V] v] T]
 d. [TP NP_i [_{vP} t_i [_{VP} NP_j [_{ModP} [_{vP} t_j [_{VP...V}] v] *yooni*] V] v] T]

4.3 VP is too small as a head of control complement

Wurmbrand (1998, 2000) also points out that T can be abandoned in control complement clauses. However, her syntactic control structure is even more reduced. It is headed by V, and lacks a small *v* projection. In this section, I present Japanese evidence against her proposal that VP is a syntactic control complement. The conclusion from the evidence is that VP is not a 'size' appropriate for OC complements.

visible to the computational system. This, in turn, permits Procrastinate to be violated in the derivation of (60).

(62) shows the OC structures under her view that VP is the control complement. (62a) is the case where a compound control verb is involved, (62b) is the case of *te* construction, and (62c) is of *yooni* construction.³⁴

- (62) a. $[_{VP2} NP_i\text{-Nom} [[_{VP1} \dots V1] V2] v2]$
 b. $[_{VP} NP_i\text{-Nom} [[_{VP} \dots V\text{-}te] V] v]$
 c. $[_{VP} NP\text{-Nom} [_{VP} NP_i\text{-Dat} [[_{VP} \dots V\text{-}yooni] V]] v]$

The first critique of her proposal is simply derived from the notion of constituency. Consider the following examples in (63). The structures follow Wurmbrand's analysis. The complement headed by a control verb is VP.

- (63) a. John-ga $[_{VP}$ sono ringo-o tabe]-kaneta node, Bill-mo
John-Nom that apple-Acc eat-hesitated so that Bill-also
 $[_{VP}$ soo si]-kaneta.
so do-hesitated
 'John hesitated to eat that apple, and Bill hesitated to do so.'
- b. John-ga $[_{VP}$ sono ringo-o tabe-te] mita node, Bill-mo
John-Nom that apple-Acc eat- to tried so that Bill-also
 $[_{VP}$ soo si-te] mita.
so do-to tried
 'John tried to eat that apple, and Bill also tried to.'
- c. John-ga Mary-ni $[_{VP}$ sono ringo-o taberu-yooni] itta node
John-Nom Mary-Dat that apple-Acc eat- to told so that
 Bill-mo $[_{VP}$ soo suru yooni] itta.
Bill-also so do to told

³⁴ Wurmbrand (1998: 72) treats verbs selecting a *yooni* complement as non-restructuring infinitive verbs, since she assumes that the embedded verb is marked for tense. For Wurmbrand, it would make no difference as she wants no functional material here. However, as discussed in Section 3.5, the marker is assumed not as a tense marker, but as an aspect marker. Let us assume so here in this section.

(Lit.)'John told Mary to eat that apple and Bill told her to do so, too.'

(63a) is predictable from her proposal if the embedded verb of a compound verb is assumed to have no small *v* projection. Then, the embedded VP is the smallest phrasal constituent. However, (63b,c) cannot be derived. Under her assumption, the head of the control complement VP consists of *eat* and the participle *te* or the subjunctive auxiliary *yooni*. Notice, however, that *te* and *yooni* are element independent of the rest of the VP elements; *eat that apple*. In the ellipsis in (63b,c), *te/yooni* is not omitted along with the constituent consisting of the verb and the object NP. Even if we assume that there would be a smaller projection in V structured as [_v V *te/yooni*], then we lose the constituency of the verb and the object NP. Thus, her analysis cannot account for the constituency which includes a verb and an object NP, but excludes *te* and *yooni*.³⁵

If the system of Japanese tense/aspect which Section 3.5 introduced is on the right track, another problem is posed in the case of *yooni* constructions. Without assuming the small *v* as a head, how can we account for the aspect interpretation of the embedded verb affixed by an aspect marker *-ru*? According to the tense/aspect system, the feature [Perfect] of the affixed verb gets checked when the verb is incorporated into the *v* head. This process yields an aspect interpretation. However, according to her assumption, since a control complement is not headed by *v*, the embedded verb fails to get its aspect feature checked.

The third problem is about interpretation of PRO subject, related to the treatment of Japanese nominative objects. Wurmbrand (1998: Chapter 3 Section 3.2) discusses and assumes that a nominative object construction takes a VP complement selected by a restructuring infinitive, *-rare* 'can'. For instance, consider the following example. In this structure, according to her, the object NP can get a nominative Case from the matrix T.

³⁵ This problem holds not only in Japanese but also in the English or German paradigm of verb inflection. For Wurmbrand, there is no difference between the presence and absence of infinitive marker, *to/zu*. She leaves it as one of the remaining issues (Wurmbrand 1998, Chapter 7).

- (64) Emi-ga [VP ringo-ga tabe] -rare-ru.
Emi-Nom apple-Nom eat-can-pres
 ‘Emi can eat apples.’ (Wurmbrand 1998: 135)

In a different chapter (Wurmbrand, 1998 Chapter 4 Section 2.3.2), she also claims that a control verb with a partial control reading is not a restructuring verb. For instance, PRO in (65a) is partially controlled by the subject, but we have referent provided by the context, as referred in the index k. (65b) is ungrammatical, since the control verb, *try*, is a restructuring verb which lacks a Spec vP, and the control reading is specified semantically.

- (65) a. The mayor_i decided PRO_{i+k} to gather in the castle.
 b. *The mayor_i tried PRO_{i+k} to gather in the castle.

Now consider (66), which shows the interaction between a nominative object construction as in (64) and a partial control reading as in (65).

- (66) Emi-ga PRO_{i+k} issyoni ringo-ga tabe-rare-ru.
Emi-Nom together apples-Nom eat-can-pres
 ‘Emi can eat apples together.’

The reading that embedded subject can be interpreted as partial PRO cannot be accounted for under Wurmbrand’s assumptions. As we saw in (64), *-rare* is a restructuring verb that should not take a partial control reading as in (65b). However, (66) can be interpreted as the sentence involving a partial control reading. Thus, there is a contradiction within her assumptions. If *-rare* in the nominative object construction is a restructuring verb, the infinitival subject should be an exhaustive control PRO. However, as in (66), the embedded subject can be controlled by a partial control PRO. At least to get the interpretation that PRO in (66) is *Emi*, there must be a syntactic position for the embedded subject. This does

not follow her assumption that VP is the OC complement, since the Spec VP does not provide a syntactic position for the subject. From a standard assumption, the Spec of vP provides that position.³⁶ Therefore, VP is not a size appropriate for OC complements. vP is a correct projection of control complements. The incompatibility within her assumptions also suggests that partial control is not a straightforward diagnostic of non-obligatory control verbs, in her terms, non-restructuring verbs. How to deal with it, however, is still unclear.

Furthermore, the following example shows that the *try* type of verb in Japanese, like those in English as in (65b), disallows the embedded subject to be interpreted as a partial control. According to Wurmbrand, this type of control verb is a restructuring verb.

- (67) *sichyoo_i-ga PRO_{i+k} siyakusyo-ni atumat te mita.
Mayor-Nom city hall-at gather to tried
 '*The mayor tried to gather in the city hall.'

Then consider (68), where a long passive cannot be formed either in Japanese or English, but it can be in German.

- (68) a. *sono zityensya-ga naosi te mi-rare-ta.
the bike-Nom repair to try-passive-past
 '*The bike was tried to repair.'
- b. Der Lastwagen und der Traktor wurden/*wurde
*[the truck and the tractor]-Nom were/*was*
 zu reparieren versucht.
to repair tried
 'They tried to repair the truck and the tractor.'
 (b from Wurmbrand, 2000: 8)

³⁶ To derive nominative object construction properly, I just follow the approach which moves the object to the Spec TP, as introduced in Section 3.4.

This problem also comes from the assumption of a VP control complement.³⁷ If *try* is a restructuring verb, the German data can be captured. Under her assumption, since a control complement includes only a VP complement, the object NP can be A-moved and checked with nominative Case. This analysis, however, seriously overgeneralizes the Japanese/English cases, contrary to the ill-formed passives in (68a). (68a) can be predicted under our assumption that control verbs take *v*P in the complement. The derivation of Japanese/English long passives crashes simply because one argument is given incompatible, external and internal, θ -features by one transitive verb. With regard to the thematic relation between the embedded transitive verb *repair* and the argument *the bike*, the NP moved from the VP complement position to the Spec *v*P would get both Theme and Agent. Thus, the control clause in (68a) would derive an inappropriate interpretation such that the bike repairs itself.³⁸ Thus, we can exclude the long passive in *try* type of control constructions in Japanese/English, if we assume that the control complement involves *v*P, not VP.

This section attempts to deny Wurmbrand's assumption that VP is the complement selected by a restructuring control verb. VP seems too small a constituent to account for the structure of control complements in Japanese. This is not a problem, however, if we maintain the structures as in (69), repeated from (61). In these structures, *v*P/PartP/ModP, complemented by OC control verbs, includes *v*P, not VP.

- (69) a. [TP NP_i [_vP₂ t_i [_vP₂ [_vP₁ t_i [_vP...V1] v1] V2] v2] T]
 b. [TP NP_i [_vP t_i [_vP [_{Part}P [_vP t_i [_vP ... V] v] *te*] V] v] T]
 c. [TP NP_i [_vP t_i [_vP NP_j [_vP [_{Part}P [_vP t_j [_vP ... V] v] *te*] V] v] T]

³⁷ Or, we might stipulate that the *try* type of verbs differs in languages; that of Japanese/English is a non-restructuring verb whereas that of German is a restructuring verb.

³⁸ In contrast, German long passives are well-formed as in (68b). It is due to the argument structure of the verb 'repair' in (68b). Grohmann (personal communication) points out the fact that *reparieren* can be used in a middle construction in German. Then, the NP can be moved to the subject position of the matrix passive formed verb.

d. [TP NP_i [_{VP} t_i [_{VP} NP_j [_{ModP} [_{VP} t_j [_{VP} ... V] v] *yooni*] V] v] T]

5 Mono-clausal control structures and scrambling

The structures in (69) indicate that these types of control construction are mono-clausal, in the sense that they involve just one TP. In this section, I will show how this mono-clausality explains the observation seen in scrambling out of control clauses, which has been a long-standing issue on scrambling (Mahajan, 1990; Saito 1992, 1994; Nemoto 1993; among others). Introducing a way of deriving scrambling under a phase-based approach, I propose to answer the question why 'long-distance' A-scrambling out of a control complement is possible. The fact that 'radical' restructuring (i.e. all heads end up being incorporated into the matrix C) takes place in the OC constructions, suggests that the heads (i.e. *v* and C in a relevant structure) do not qualify as a strong phase after it has incorporated into a higher head. Incorporation cancels a strong phase and makes the boundary of the originally strong phase transparent. Furthermore, Section 5.3 shows the same approach appropriately accounts for the fact that 'long-distance' A-scrambling out of a subjunctive clause is possible. In so doing, I point out that Uchibori's (1996, 2000) approach needs an additional assumption on defectiveness of T, which this analysis avoids.

5.1 Scrambling out of control clauses Let us confirm the facts in this section. Mahajan (1990) reports Hindi data which show that long-distance A-scrambling out of a finite clause is impossible, while 'long-distance' A-scrambling is possible in a control structure. Saito (1992) and Nemoto (1991, 1993) among others also confirm that Japanese scrambling exhibits the same pattern. That is, scrambling out of control clauses does not behave like long-distance scrambling out of a finite clause which is a species of A'-movement, but rather it displays the characteristics of A-movement. In effect, scrambling out of control clauses shows exactly the same pattern as clause-internal scrambling. The examples in (70)-(72) illustrate

this generalization.³⁹

- (70) a. *[[otagai_i-no sensei]-ga [Mary-ga karera-o hihansita
each other-Gen teacher-Nom Mary-Nom they-Acc criticized
to] itta] (koto).
that said fact
'Each other's teachers said that Mary criticized them.'
- b. *karera_i-o [[otagai_i-no sensei]-ga [Mary-ga t_i hihansita
they-Acc each other-Gen teacher-Nom Mary-Nom criticized
to] itta] (koto).
that said fact
'Them, each other's teachers said that Mary criticized'
- (71) a. *[John-ga [[otagai_i-no sensei]-ni [karera_i-o
John-Nom each other-Gen teachers-Dat they-Acc
homeru yooni tanonda]] (koto).
praise to asked fact
'John asked each other's teachers to praise them.'
- b. ?[John-ga [karera_i-o [[otagai_i-no sensei]-ni_j [t_j t_i
John-Nom they-Acc each other-Gen teachers-Dat
homeru yooni tanonda]]]] (koto).
praise to asked fact
'Them, John asked each other's teachers to praise.'
- c. ?[karera_i-o [John-ga [[otagai_i-no sensei]-ni_j [t_j t_i
they-Acc John-Nom each other-Gen teachers-Dat
homeru yooni tanonda]]]] (koto).
praise to asked fact
'Them, John asked each other's teachers to praise.'
- (72) a. *[John-ga [[otagai_i-no sensei]-ni karera_i-o

³⁹ *Koto* is added to the end of relevant examples to avoid the unnaturalness resulting from the lack of topic in the matrix sentence.

John-Nom each other-Gen teachers-Dat they-Acc
 syookaisita]] (koto).

introduced fact

'John introduced them to each other's teachers.'

- b. [John-ga [karera_i-o [[otagai_i-no sensei]-ni t_i
John-Nom they-Acc each other-Gen teachers-Dat
 syookaisita]]] (koto).

introduced fact

'Them, John introduced to each other's teachers.'

- c. [karera_i-o [John-ga [[otagai_i-no sensei]-ni t_i
they-Acc John-Nom each other-Gen teachers-Dat
 syookaisita]]] (koto).

introduced fact

'Them, John introduced to each other's teachers.'

In (70b), scrambling out of the finite clause cannot be A-movement, since the scrambled NP cannot bind the reciprocal dative NP. On the other hand, scrambling out of the control clause, as in (71b, c), can be A-movement, just as the clause-internal A-scrambling in (72b, c).⁴⁰ Since the scrambled NP properly binds the reciprocal dative NP, both cases in (71) and (72) show exactly the same locality effects as A-scrambling.

Furthermore, reconstruction effects arise when the reflexive pronoun, *zibunzisin*, is scrambled. Compare (71) and (73). In (71b,c), the scrambled phrase cannot be reconstructed. Otherwise, it would yield a violation of Principle A. In contrast, in (73a, b), the scrambled reflexive pronoun must be reconstructed at LF,

⁴⁰ The post-subject clause-internal movement in (72b) might be irrelevant to scrambling if we assume that the accusative NP is overtly moved to the Spec vP, due to Case-checking. This is in fact what we assume in Section 3.2. See Takano (1998) for the availability of scrambling and object-shift. Furthermore, if Miyagawa (1997) is right, it is not a scrambling case, either. He argues that the dative following the accusative NP is a base-generated postpositional phrase.

due to the violation of Principle A, with respect either to the dative name NP in (73a) or to both name NP's in (73b).

- (73) a. [John-ga [zibunzisin_i-o [Mary-ni_j [t_j t_i homeru yooni
John-Nom himself/herself-Acc Mary-Dat praise to
 tanonda]]] (koto).
asked fact
 'Himself/herself, John asked Mary to praise.'
- b. [zibunzisin_i-o [John-ga [Mary-ni_j [t_j t_i homeru yooni
himself/herself-Acc John-Nom Mary-Dat praise to
 tanonda]]] (koto).
asked fact
 'Himself/herself, John asked Mary to praise.'

The data as in (71) and (73) have been controversial in previous analyses, since they assume that control constructions involve an embedded clause, and scrambling out of an embedded clause should exhibit features of a 'long-distance' scrambling. However, it does not. As seen in (71) and (73), scrambling out of a control clause behaves like clause-internal A-scrambling. To solve this problem, for instance, Saito (1994) and Murasugi and Saito (1994), following Boskovic (1993), argue that control clauses are IP's, so that this scrambling can take place without going through a C projection. For them, this is why scrambling out of control clauses is different from that out of finite clauses. Saito (1994: 269) illustrates this as follows.

- (74) ... [VP XP_i [VP ... [IP t_i' [IP ... t_i ...

However, this solution does not straightforwardly explain the cases showing reconstruction effects. Notice that (74) still involves an embedded IP clause. As Saito assumes that A'-moved elements undergo reconstruction, an IP adjunction position is ambiguous between an A-position and an A'-position. When the IP

adjunction in (74) is the A-position, reconstruction is not relevant so that (71b) is predictable. On the other hand, when the IP adjunction in (74) is the A'-position, reconstruction from an A'-position is permitted. In this case, the appropriate binding interpretation is provided in (71c) and (73a,b). If it is an A'-position, however, the movement in (74) forms an improper chain; $\bar{A}A'-A$. This chain should exclude the possibility of scrambling out of control clauses.⁴¹

In this section, it has been confirmed that scrambling out of control clauses can be A-scrambling. The previous analyses fail to capture this fact straightforwardly. This is because they assume the IP position in the control clause, and reconstruction as an operation is only for A'-moved phrases. In the next section, taking a phase-based approach, I will show how scrambling out of control complement is derived and how reconstruction effects are predicted.

5.2 Scrambling by phase First, I show how the phase-based approach (Chomsky 1998, 1999) implements derivations of scrambling out of a control clause. The following assumptions are mainly adopted here. (75) is repeated from (45), and (76) to (78) are also Chomsky's assumptions on the Minimalist Program. (79) is a stipulation that scrambling can occur at a strong phase.⁴²

(75) a. *Strong Phases (PH): C and v.*

⁴¹ Saito (1994: 289) admits this problem, concluding, 'the problem discussed above with respect to the explanation of improper movement still remains.'

⁴² This stipulation is related to the debate whether or not scrambling is optional. Under the optional movement approach, scrambling can take place at any maximal projection (cf. Saito 1985, 1993, Saito & Fukui 1998, Takano 1998 among others). As pointed out by Boskovic and Takahashi (1998), this type of approach faces a serious problem that optionality is not welcome in the Minimalist Program due to Greed. In contrast, scrambling by phrase in (79) assumes that scrambling is not optional but motivated in terms of feature-checking (cf. Miyagawa 1998, Grewendorf & Sabel 1999 among others). When we assume that feature-checking is involved in scrambling and a relevant feature is a kind of focus or *aboutness* (Mihara 1992), we have to address a question which projection should be relevant to the scrambling feature of focus/aboutness. In this regard, it is less clear that T projection is related to focus/aboutness than C/v projection. Scrambling by phase predicts this, because the relevant features are assumed to be in C and v. This is a reason why (79) is assumed. However, more research is necessary to confirm (79).

- b. *Phase Impenetrability Condition (PIC)*
 In a strong phase HP, in the configuration [_{ZP} Z ... [_{HP} [α [H YP]]],
 ZP the next strong phase:
- i. The domain of H is not accessible to operations at ZP, but only H and its edge.
 - ii. Interpretation/evaluation for PH₁ is at PH₂.

(Chomsky 1998: 108, 1999:10-11)

- (76) Different from XP-movement, head-raising is a phonological process.

(Chomsky 1999: 31)

- (77) a. *Domain of a head **a***
 The set of nodes contained in Max (α) that are distinct and do not contain α, where Max (α) is the least full-category maximal projection dominating α.

- b. *Minimal Domain of **a***
 The smallest subset K of S (= the domain of α) such that for any γ ∈ S, some β ∈ K reflexively dominates α.

(Chomsky 1993: 12)

- (78) *Copy Theory*

The trace left behind is a copy of the moved element.

(Chomsky 1993: 35)

- (79) *Scrambling by phase*

- a. Scrambling XP can be applied at PH_i, only if XP holds a focus feature [+F] and it is an object accessible to interpretation/evaluation at PH_{i+1} for PH_i.
- b. C and v can obtain an uninterpretable feature [F].

For illustration, let us consider (81), which shows a step-by-step derivation of pre- and post-subject scrambling out of control clauses in (80a) and (80b), respectively. English gloss is used in (81) for convenience.

- (80) a. John-ga Bill_i-o Mary_j-ni [t_j t_i homeru] yooni itta (koto).

John-Nom Bill-Acc Mary-Dat praise to told fact
 'Bill_i, John told Mary to praise t_i.'

- b. *Bill_i-o John-ga Mary_j-ni [t_j t_i homeru] yooni itta (koto).*
Bill-Acc John-Nom Mary-Dat praise to told fact
 'Bill_i, John told Mary to praise t_i.'

- (81) a. [VP Bill-Acc praise]
 b. [_v' [VP Bill-Acc t_{praise}] praise]
 c. {PH1 [VP Mary-Dat [VP Bill-Acc t_{praise}] praise]}
 d. {PH1 [VP **Bill-Acc** [VP Mary-Dat [VP Bill-Acc t_{praise}] praise]}
 e. [ModP {PH1 [VP Bill-Acc [VP Mary-Dat [VP Bill-Acc t_{praise}] t_{praise}]}
 praise-to]
 f. [VP [ModP {PH1 [VP Bill-Acc [VP Mary-Dat [VP Bill-Acc t_{praise}] t_{praise}]}
 t_{praise-to}] praise-to-told]
 g. [VP Mary-Dat [VP [ModP {PH1 [VP Bill-Acc [VP Mary-Dat [VP Bill-Acc
 t_{praise}] t_{praise}]} t_{praise-to}] praise-to-told]]
 h. [VP John-Nom [VP Mary-Dat [VP [ModP {PH1 [VP Bill-Acc [VP Mary-Dat
 [VP Bill-Acc t_{praise}] t_{praise}]} t_{praise}]} t_{praise-to}]]] t_{praise-to-told}
 praise-to-told]
 i. {PH2 [VP John-Nom [VP Mary-Dat [VP [ModP {PH1 [VP Bill-Acc [VP Mary-
 Dat [VP Bill-Acc t_{praise}] t_{praise}]] t_{praise}]} t_{praise-to}]]] t_{praise-to-told}
 praise-to-told]}
 j. {PH2 [VP **Bill-Acc** [VP John-Nom [VP Mary-Dat [VP [ModP
 {PH1 [VP Bill-Acc [VP Mary-Dat [VP Bill-Acc t_{praise}] t_{praise}]] t_{praise}]}
 t_{praise-to}]]] t_{praise-to-told} praise-to-told]}
 k. [TP John-Nom {PH2 [VP **Bill-Acc** [VP John-Nom [VP Mary-Dat
 [VP [ModP {PH1 [VP Bill-Acc [VP Mary-Dat [VP Bill-Acc t_{praise}]]
 t_{praise}]] t_{praise}]} t_{praise-to}]]] t_{praise-to-told} t_{praise-to-told}] praise-to-told]
 l. {PH3 [CP [TP John-Nom {PH2 [VP **Bill-Acc** [VP ~~John-Nom~~ [VP Mary-Dat
 [VP [ModP {PH1 [VP ~~Bill-Acc~~ [VP ~~Mary-Dat~~ [VP ~~Bill-Acc~~ t_{praise}]] t_{praise}]]
 t_{praise}]] t_{praise-to}]]] t_{praise-to-told} t_{praise-to-told}] t_{praise-to-told} praise-to-told]}
 l'. {PH3 [CP Bill-Acc [CP [TP John-Nom {PH2 [VP ~~Bill-Acc~~ [VP ~~John-Nom~~

- (82) a. [John-ga [karera_i-o [[otagai_i-no sensei]-ni_j [t_j t_i John-Nom they-Acc each other-Gen teachers-Dat homeru yooni tanonda]]]] (koto).
praise to asked fact
 'Them, John asked each other's teachers to praise.'
- b. [karera_i-o [John-ga [[otagai_i-no sensei]-ni_j [t_j t_i they-Acc John-Nom each other-Gen teachers-Dat homeru yooni tanonda]]]] (koto).
praise to asked fact
 'Them, John asked each other's teachers to praise.'
- (83) a. [John-ga [zibunzisin_i-o [Mary-ni_j [t_j t_i homeru yooni John-Nom himself/herself-Acc Mary-Dat *praise to tanonda]]]] (koto).
asked fact
 'Himself/herself, John asked Mary to praise.'*
- b. [zibunzisin_i-o [John-ga [Mary-ni_j [t_j t_i homeru yooni himself/herself-Acc John-Nom Mary-Dat *praise to tanonda]]]] (koto).
asked fact
 'Himself/herself, John asked Mary to praise.'*

First, the conclusion from Section 3 and 4 provides a straightforward account for the fact that scrambling out of control clause can be A-scrambling. Consider the following schema.

- (84) ... [_{vP} XP_i [_{VP} ... [_{vP} XP_i [_{VP} ... XP_i ...

Recall that OC complements in Japanese lack a T projection. As a Spec *vP* is generally taken to be an A-position, scrambling out of control complements moves through A-positions. This scrambling forms a legitimate A-chain, which allows us to interpret the scrambled NP as being in an A-binding position.

If a T position exists in an embedded clause, the derivation would crash. Consider the following structure.

(85) {_{PH2} [_{vP} NP-Acc_i [_{VP} NP-Dat [_{TP} NP-Dat {_{PH1} [_{vP} NP-Acc_i ... }]]]]}

The scrambling from the first phase to the second phase violates the Minimal Link Condition. The assumption (77) does not rescue the movement from violating the MLC in this case. The dative NP is closer than the accusative NP from the matrix vP. Thus, the phase-based approach to scrambling confirms that OC constructions are mono-clausal.

Reconstruction effects can also be explained under this approach. Consider the following schemata which illustrate cases of post-subject scrambling in (82a) and (83a). NP_{ant} and NP_{ana} indicate an antecedent NP and an anaphor NP, respectively.

(86) a. {_{PH2} [_{vP} NP_{ant}-Acc_i [_{VP} NP_{ana}-Dat {_{PH1} [_{vP} ~~NP_{ant}-Acc_i~~ ... }]]]]} (82a)
 b. {_{PH2} [_{vP} ~~NP_{ana}-Acc_i~~ [_{VP} NP_{ant}-Dat {_{PH1} [_{vP} NP_{ana}-Acc_i ... }]]]]} (83a)

The post-subject scrambling case of (82a) corresponds to the structure in (86a). Copy Theory (cf. Hornstein 1995 for A-chain) allows the top most copy of the antecedent NP to remain at LF. Thus, an A-scrambled phrase can serve as the antecedent of a reciprocal anaphor, which forms a proper c-commanding relation between the antecedent and the reciprocal. (86b) shows the post-subject scrambling of an reflexive anaphor in (83a). In this case, the embedded copy is visible since the system sees it located in the edge of the first phase. When the embedded copy is available at LF, then the anaphoric interpretation with respect to the dative antecedent NP can be provided.^{43, 44}

⁴³ It is assumed that reconstructability of a moved element is a typical A'-property (Saito 1989, Chomsky 1993). In fact, it has been pointed out that reconstruction can take place in A-movement. In particular, Grewendorf & Sabel (1999) account for the well-formedness of (82b) and (83b) without referring to the question of whether or not the anaphor has undergone A or A'-movement, by

The following structures illustrate the cases of pre-subject scrambling, which are seen in (82b) and (83b).

- (87) a. $\{_{PH3} [CP \cancel{NP_{ant}-Acc_i} \dots \{_{PH2} [_{VP} NP_{ant}-Acc_i [_{VP} NP_{ana}-Dat$
 $\{_{PH1} [_{VP} \cancel{NP_{ant}-Acc_i} \dots]]]]]\}} \quad (82b)$
- b. $\{_{PH3} [CP \cancel{NP_{ana}-Acc_i} [TP NP_{ant}-Nom \{_{PH2} [_{VP} \cancel{NP_{ana}-Acc_i} [_{VP} NP_{ant}-Dat$
 $\{_{PH1} [_{VP} NP_{ana}-Acc_i \dots]]]]]\}} \quad (83b)$

Look at (87a), which illustrates a relevant structure for (82b). When the top most A-position of the antecedent NP is available at LF, it properly c-commands the anaphor. Given this approach, we do not need to assume that the landing A'-position is reanalyzed as an A-position, as Saito (1992) does. Recall now that (83b) shows anaphoric ambiguity between the subject and dative object as an antecedent of the reflexive. In order to interpret this ambiguity properly, the system must see the copy of accusative NP at the original position of the first phase, as shown in (87b). How can the system see an element inside the first phase after the third phase is formed? The PIC in (75b) disallows the system to do so, if these phases retain the status as a strong phase. However, the PIC is not relevant in a structure where phases are not strong. Hereby, I propose the following assumption (88).⁴⁵

assuming that Principle A of the Binding Theory can be fulfilled at any point of the derivation.

⁴⁴ I assume that the top-most of copy of dative NP is interpreted at LF. In addition, notice that the subject also c-commands the accusative NP. This relation properly predicts that the subject also can be an antecedent of the reflexive, as well as the dative NP.

⁴⁵ (88) proposes nothing special in the sense that it just paraphrases a relation between a barrier and incorporation into phase-based terms. In the GB frameworks, Uriagereka (1988) proposes that a barrier is eliminated by incorporating its head to another element. It is also roughly along the lines of Baker's (1988: 64) Government Transparency Corollary as defined below.

- (i) *The Government Transparency Corollary (GTC)*
 A lexical category which has an item incorporated into it governs everything which the incorporated item governed in its original structural position.

(88) *Cancellation of strong phases*

The status of head X as strong phase is cancelled when the head X is a trace.

- (89) a. {PH₂ [ZP [YP ... {PH₁ [XP ... X]] Y]]} PH₁ = strong
b. {PH₂ [ZP [YP ... {PH₁ [XP ... t_X]] X-Y]]} PH₁ ≠ strong

If Chomsky's (1999) proposal of (76) is on the right track, a head remains not as a copy but as a trace after it is incorporated to an upper head. According to (75a), if X in (89) are either C or *v*, it becomes strong phase. Compare (89a) and (89b). (89a) illustrates that the head X is not incorporated into an upper head Y at a derivation within the second phase. In this case, the first phase remains as a strong phase. In contrast, (89b) shows the structure where X is incorporated to another upper head, leaving a trace. This incorporation renders the boundary between XP and YP 'transparent' and the status of X as a strong phase is cancelled. In other words, (88) assumes that the status of X as a strong phase is cancelled in terms of restructuring.⁴⁶

Japanese control constructions indeed undergo this restructuring.^{47, 48} (90) shows evidence for this, in which all the NPs including the matrix subject may be clefted, with both verbs being combined and stranded.⁴⁹ This suggests that the

⁴⁶ Juan Uriagereka (personal communication) correctly points out that (21) is too permissibile in the case where *v* is involved as a phase. There are two possible modifications. One is that for some reason (21) is applicable only if a phase is C. The other is that *v* is not a phase, contrary to Chomsky's assumption. I do not have an answer which solution is plausible.

⁴⁷ Kikuchi, Oishi & Yusa (1994: 155-156) also point out the possibility for the embedded verb to be raised to the matrix Agr-S in the case of scrambling out of a infinitive clause. However, they do not show any evidence for it. In addition, they assume T in the control complement as a projection with [-Tense] that they assume reduces the opacity between the matrix clause and the control complement. What [-Tense] implies in their theory is not clear.

⁴⁸ Grewendorf & Sabel (1994) also argue that scrambling out of infinitives is possible in German if verb incorporation between the embedded and the matrix verb takes place at LF.

⁴⁹ Koizumi (1995 Chapter 7) uses this clefting diagnosis to show that T is incorporated to C in the following ditransitive sentence.

embedded heads are moved to the top head C through the matrix V, v and T.⁵⁰

- (90) Homeru yooni itta no-wa [John-ga Mary-ni zibunzisin-o] da.
praise to told NL-Top John-Nom Mary-Dat self-Acc Copula
 (Lit) 'It's [John, Mary, him/herself] that told to praise.'

Let us rethink (87b). Under (88) and the fact of restructuring witnessed by (90), the first and second phases are not strong phases when the derivation reaches the third phase. Then, the most embedded copy of accusative reflexive is available

-
- (i) Ageta no-wa [Mary-ga John-ni ringo-o 3-tu] da.
gave NL-Top Mary-Nom John-Dat apple-Acc 3-CL be
 Lit. 'It's [Mary three apples to John] that gave.'

Ueyama (1990), Tateishi (1991) and Mihara (1992) also provide independent evidence for T-to-C incorporation in Japanese.

⁵⁰ Using the cleft test, Uchibori (2000 Section 5.3) attempts to show a counter-example to this restructuring phenomenon. However, her argument is misleading. Consider her example.

- (i) Kau yooni [PRO ie-o deru maeni] kenmeinimo mejjita no-wa
buy subj aux home-Acc go before wisely ordered NL-Top
 John-ga Bill-ni ringo-o mittu da.
John-Nom Bill-Dat apples-Acc three-cl Copula.
 (lit.) 'It's John, Bill, three apples that wisely ordered to buy before he went out home.'

She argues that the temporal adverbial clause [*PRO ie-o deru maeni*] and the sentential adverb *kenmeinimo* intervene the embedded clause and the matrix predicate. She suggests that the head movement occurring in the embedded clause is overtly separated from that in the matrix clause.

Although she does not mention it, her argument above clearly implies that she assumes Kayne's (1994) LCA structure in Japanese. If Japanese is right-branching, however, those adverbial elements are not relevant to intervention. Even though it is supposed that she takes an LCA structure, I do not see those adverbials intervening the embedded and matrix heads. I assume that the embedded head can be scrambled to the Spec CP from the incorporated C head for some legitimate reason, say topicalization. (ii) illustrates the matrix CP structure after all heads are incorporated into C, and (iii) shows the embedded head is scrambled to the Spec CP.

- (ii) [_{CP} Temporal Adverbial [_{CP} Sentential Adverb [_C [_T [_v [_v [_{Mod} [_v V-v]-Mod] -V]-v]-T]-C]]]
 (iii) [_{CP} [_{CP} [_{Mod} [_v V-v]-Mod]_i [_{CP} Temporal Adverbial]] Sentential Adverb
 [_C [_T [_v [_v t_i -V]-v]-T]-C]]]

Given (iii), the separation of the embedded heads from the matrix heads occurs after restructuring. This does not suggest that head movement is not permitted.

at LF. In this structure, the anaphoric ambiguity is predictable since both the subject NP and the dative NP c-command the reflexive anaphor. Thus, reconstruction effects seen in A-scrambling out of control complements are predictable under Copy Theory and the assumption (88).

Furthermore, the phase-based approach can properly exclude post-subject long-distance A-scrambling out of a finite clause. Consider the scrambling of (91).

- (91) *John-ga zibuzisin_i-o Mary-ni [_{CP} Tom_i-ga t_i hometa to] itta (koto).
John-Nom himself-Acc Mary-Dat Tom-Nom praised that told fact
 (Lit) 'Himself_i, John told Mary that Tom_i praised t_i.'

(91) shows that the reflexive anaphor A-scrambled to the matrix vP position cannot be co-referential to the embedded subject. The PIC prevents the A-scrambled NP from reverting to the position c-commanded by the antecedent. This predicts that the embedded CP retains the status as a strong phase for the entire derivation. This prediction is borne out in (92), in which both verbs cannot be combined and stranded in the cleft structure.

- (92) *John-ga Mary-ni hometa to itta no-wa
John-Nom Mary-Dat praised that told NL-Top
 Tom_i-ga zibuzisin_i-o da.
Tom-Nom himself-Acc Copura
 (Lit) 'It's Tom_i himself_i that John told Mary that he praised.'

This proves that C-to-V restructuring does not occur in the indicative clauses. As a result, the CP phase remains strong. Thus, A-scrambling out of a finite clause is invalid since the CP strong phase prevents the system from undoing the reflexive NP to the embedded clause.⁵¹

⁵¹ Note, however, that acceptability of (91) is improved when the A-scrambled reflexive is co-referential to the matrix subject.

To sum up, A-scrambling out of control clauses is properly accounted for by the phase-based approach and the mono-clausal structure suggested in the previous sections. Since scrambling can take place phase by phase and a Spec ν P is generally taken to be an A-position, scrambling out of control complements moves through A-positions. This legitimate A-chain guarantees that this scrambling is an A-scrambling. If an embedded T existed, the derivation would crash due to the violation of the Minimal Link Condition. Thus, mono-clausality in OC constructions accounts for A-scrambling out of control clauses. Furthermore, from the fact of restructuring phenomenon in control constructions, I assume that the embedded strong phases are cancelled after restructuring occurs. Given this assumption, in the structure where the strong phases disappear, any copy is available at LF. Thus, reconstruction effects are predictable due to choices of the copies available at LF.⁵²

5.3 Restructuring and A-scrambling This section considers the interaction between restructuring and 'long-distance' A-scrambling in a bit more detail. In so doing, I examine A-scrambling out of subjunctive clauses. The purpose of

-
- (i) ^{??}John_i-ga zibuzisin_i-o Mary-ni [_{CP} Tom-ga t_i hometa to] itta (koto).
John-Nom himself-Acc Mary-Dat Tom-Nom praised that told fact
 (Lit) 'Himself_i, John_i told Mary that Tom praised t_i.'

This is also predictable under the phase-based approach. None of the assumptions taken here prevents the reflexive anaphor from moving up to the edge of the third phase as a destination. If the scrambled reflexive is available at the final position, it is properly c-commanded by the antecedent NP, which is the matrix subject. Marginality of the judgment seems to come from the difficulty in processing a series of four NP's any of whose argument is not discharged till the parser reaches the embedded verb (cf. Gibson 1998).

⁵² Juan Uriagereka (personal communication) points out that restructuring would destroy the contexts for long-distance anaphoric relation and *why* modification discussed in Section 3.1 and 3.3. This would provide another approach to explain OC constructions without claiming that they lack Tprojection in the complement. Long-distance anaphoric relation, for instance, can be accounted for by the assumption that the embedded (defective) T is incorporated into the matrix T after restructuring. I will leave this possible approach for a further investigation.

introducing subjunctive forms is as follows. Subjunctive constructions are similar to OC constructions in a sense that scrambling out of a subjunctive CP can be A-scrambling (Uchibori 1996, 2000). However, they are different from OC structures mainly in two respects: i) a main verb selects C,⁵³ ii) an overt nominative subject can occur in the embedded clause.⁵⁴ If T is responsible for checking a nominative Case, a subjunctive CP, whose head selects T, can potentially be a strong phase. Then, a question arises: how is opacity of subjunctive complements reduced if scrambling is A-scrambling? The answer is that C is not a strong phase due to restructuring, as we concluded with respect to the cases of OC constructions in the previous section.

First, let us confirm the data about scrambling out of a subjunctive complement. Uchibori (1996, 2000) provides an interesting observation that A-scrambling out of a subjunctive CP is possible. For instance, consider the following examples. (93a) and (93b) are cases of post-subject scrambling, and (93c) and (93d) are cases of pre-subject scrambling.⁵⁵

- (93) a. Koochyoo-ga karera_i-o [_{CP} otagai_i-no sensei-ga
Principal-Nom they-Acc each other-Gen teachers-Nom
 t_i homeru yooni/home-ro/-tekure to] inotta (koto).

⁵³ In Note 24, I exclude *persuade* type verbs from the set of verbs selecting a subjunctive CP complement. In this section, I use volitional verbs which clearly take a subjunctive CP complement.

⁵⁴ Subjunctive complements can appear with not only a nominative subject but also a nominative object, which is different from the case of OC complements, as examined in Section 3.4. This also confirms that subjunctive complements involve a T projection.

- (i) John-ga [_{CP} Mary-ga nihongo-o/ga motto umaku hanas-eru-yooni
John-Nom Mary-Dat Japanese-Acc/Nom much better speak-can-subj
 to] nenjita.
Comp prayed
 'John prayed that Mary could speak Japanese much better.'

⁵⁵ Recall that in Section 2 we tested whether or not the empty subject in (93) is an OC PRO, and judged it as a NOC PRO. Then, the embedded subject is assumed as a small pro. This is consistent with what Uchibori notes (1996: 401). See also Note 22.

praise modal aux/praise-subj Comp prayed fact
 ‘Them_i, the principal prayed that each other’s teachers would
 praise t_i.’

- b. John-ga zibunzisin_i -o [_{CP} Mary-ga/pro t_i homeru
John-Nom him/herself-Acc Mary-Nom praise
 yooni/home-ro/-tekure to] inotta (koto)
modal aux/praise-subj Comp prayed fact
 ‘Himself, John prayed that Mary would praise.’
- c. Karera_i-o otagai_i-no sensei-ga [_{CP} koochyoo-ga / pro
they-Acc each other-Gen teachers-Nom Principal-Nom
 t_i suisensuru yooni/suisensi-ro/-tekure to] inotta (koto).
recommend modal aux/recommend-subj Comp prayed fact
 ‘Them, each other’s teachers prayed that the principal would
 recommend.’ (Uchibori 1996: 410)
- d. Zibunzisin_i -o John-ga [_{CP} Mary-ga / pro t_i homeru
him/herself-Acc John-nom Mary-Nom praise
 yooni/home-ro/-tekure to] inotta (koto).
modal aux/praise-subj Comp prayed fact
 ‘Himself, John prayed that Mary would praise.’

Scrambling out of a subjunctive clause behaves like the case of a control construction. The scrambling in (93a, c) is A-scrambling, as the copy in the Spec ν P is available at LF. This permits the scrambled NP in (93a, c) to bind the reciprocal pronoun in the matrix subject. If the reflexive anaphor in (93b, d) can revert to the original position, the ambiguity of the antecedent between the matrix and the embedded subject can be captured appropriately.

In order to reconstruct the scrambled NP to the embedded object position, both of the embedded CP and the matrix ν P should not induce opacity. Recall the assumption of the cancellation of the status of strong phase (88). Given this, we predict that the embedded heads and the matrix V and ν are all incorporated into the matrix T. If it is proved, the C and ν are not a strong phase. This prediction is born

out. The following example shows that C is incorporated into V, and that the matrix v is incorporated into T. The embedded verb can be combined with the matrix verb and stranded in the cleft structure.⁵⁶

- (94) John-ga homeru yooni/home-ro/-tekure to inotta no-wa
John-Nom praise modal aux/praise-subj Comp prayed NL-Top
 [Mary-ga zibunzisin-o] da.
Mary-Nom him/herself-Acc Copula
 Lit. 'It's [Mary, him/herself] that John prayed to praise.'

This restructuring, along with (88), guarantees that the embedded C and the matrix v do qualify as strong phases. As a consequence, the scrambled NP can be undone to the original position. The LF structure of (93b, c) is illustrated as below.

- (95) {PH4 [CP ~~NP_{ana}-Acc_i~~ [TP NP_{ant}-Nom [T' {~~PH2~~ [vP NP_{ana}-Acc_i [vP NP_{ana}-Acc_i {~~PH2~~ [CP [TP NP_{ant}-Nom {~~PH2~~ [vP NP_{ana}-Acc_i ...]]]]]]]] V-v-T-C-V-v-T] C]]

Thus, A-scrambling out of subjunctive clauses can be accounted for in the same approach taken for the cases of OC constructions. The key is that the absence of C and v makes strong phases inert.

Lastly, I compare this approach with Uchibori's (2000). She proposes the following.

⁵⁶ The cleft test also shows that the incorporation of T to C does not occur in this case, unlike the case in OC constructions.

- (i) *homeru yooni/home-ro/-tekure to inotta no-wa
praise modal aux/praise-subj Comp prayed NL-Top
 [John-ga Mary-ga zibunzisin-o] da.
John-Nom Mary-Nom him/herself-Acc Copula
 Lit. 'It's [Mary would praise Bill] that John prayed.'

- (96) If a given C embeds defective/deficient T, the C is not qualified as a strong phase head. (Uchibori 2000 Chapter 5: 19)

Since she assumes that T in the non-past group of subjunctive CP complement is defective (Uchibori 2000 Chapter 4), (96) makes the subjunctive CP a non- strong phase. Clearly and crucially, this assumption needs a premise that the system has to recognize the completeness/defectiveness of T. If T is complete and C selects it, the system recognizes the head C as a strong phase head. On the other hand, if T is defective and C selects it, the system recognizes C as a non-strong phase head. Moreover, in the cases of OC construction, under her theory, the T exists and it is responsible for checking a null Case of PRO. This means that T must be more defective than that for the subjunctive complement, since an OC complement never takes an overt subject.⁵⁷ Thus, she needs an additional assumption that the syntax system must recognize various degrees of defectiveness of T.

In contrast, the approach taken in this paper does not need this additional assumption. When a strong phase head becomes absent during a derivation, the phrase is not a strong phase. Given this approach, it is unnecessary for the system to see whether or not the embedded T is defective and how defective it is.

Moreover, Uchibori's approach has difficulty in accounting for the anaphoric ambiguity seen in (93d). Notice that according to her approach, the matrix *v*P stays strong. Since the PIC allows a copy of the reflexive NP in the Spec *v*P available at LF, the matrix subject can properly c-command the reflexive NP. However, the PIC prevents the system from taking the more embedded copies of the reflexive NP as an LF copy. This predicts that the embedded subject cannot be interpreted as the antecedent of the reflexive, contrary to fact. Thus, to explain the ambiguity, she needs to make another assumption which disqualifies the head *v* as a strong phase in the relevant structure.

⁵⁷ In addition, as examined in Section 3.4, nominative objects rarely appear in OC complements, unlike in subjunctive complements (cf. Note 22). This also suggests that T in OC complements is more defective than that in subjunctive complements.

To sum up, this section applied the phase-based approach to A-scrambling out of subjunctive clauses. It is confirmed that absence of a phase head makes A-scrambling possible. In addition, Uchibori's approach needs an additional assumption that the system must know the defectiveness of T. In contrast, the approach this paper takes does not need such an assumption. If restructuring occurs in a relevant structure, the absence of strong phases makes A-scrambling possible.

6 Conclusion

This paper concludes that Japanese obligatory control constructions are mono-clause, in the sense that they retain only one T position. Empirical data in fact show that OC PRO constructions do not involve T in their control complement. This is unexpected on the assumption that T agrees with PRO and assigns it null Case. It crucially needs to assume T projection in the embedded clause, no matter what kind of status it has. However, there is no T projection in Japanese OC PRO complement. On the other hand, if PRO is a residue of NP movement, there arise no difficulties with deriving Japanese OC PRO constructions. Thus, mono-clausality of OC PRO constructions in Japanese supports Hornstein (1999, 2000)'s proposal.

This mono-clausality also provides a plausible account with the observation that scrambling out of control complements behaves like clause-internal scrambling. Deriving scrambling under a phase-based approach, I considered why 'long-distance' A-scrambling out of a control complement is possible. Since restructuring takes place in OC constructions, the head is not qualified as a strong phase after it is incorporated into the upper head. The cancellation of the strong phase makes the boundary of the originally strong phase transparent. Furthermore, it is confirmed that the same approach appropriately accounts for the fact that 'long-distance' A-scrambling out of a subjunctive clause is possible.

Acknowledgements

The earlier versions of Section 2 to 4 were presented both at the 2000 International

Workshop at Generative Grammar at Hansung University on July 6, 2000 and at University of Tsukuba on July 13, 2000. An earlier version of Section 5 was also presented at the Maryland Syntax Meeting on November 16, 2000. I would like to thank Norbert Hornstein for his comments and encouragement. Thanks also go to Kleanthes Grohmann, Max Guimarães, Masaaki Kamiya, Hirohisa Kiguchi, Mitsue Motomura, Fumikazu Niinuma, Yoshi Okamoto, Acrisio Pires, Cilene Rodrigues, Itziar San Martin, Hidekazu Suzuki, Peter Svenonius, Graciela Tesan, Takae Tsujioka, Juan Uriagereka, Akira Watanabe, Amy Weinberg, Jacek Witkos, and the participants at the above meetings, for discussions, comments, corrections and suggestions. Remaining errors and inadequacies are all my own.

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