Binding and Control: A Unified Approach

Tohru Uchiumi
Department of Linguistics
McGill University, Montreal

August 31, 2006
Revised: October 7, 2009

A thesis submitted to McGill University
in partial fulfilment of the requirements of the degree of
Doctor of Philosophy in Linguistics

Abstract

This thesis presents a theory that explains binding and control with common mechanisms. Although a unified account of the two phenomena was frequently attempted in the 1980's and early 90's, such an approach seems to have been unpopular due to certain problems since the late 90's. In this study it is shown that these problems are merely superficial and can be overcome with careful examination.

In chapter 2, I start with Reinhart & Reuland's (1993) assumption that the application of Condition A of binding theory is restricted to anaphors in argument positions of syntactic predicates. I then adopt Fox's (1993) modification to Reinhart & Reuland's (1993) theory, whereby Condition A is reduced to the Chain Condition. As the discussion proceeds, further revisions are suggested. In particular, the domain for A-chain formation is defined over syntactic predicates, which is called the A-Chain Projection Domain (ACPD).

With respect to anaphors that are not in argument positions of syntactic predicates, I entertain the hypothesis by the above authors that they are what are often called logophors, which are governed by a set of discourse conditions. I identify some of these conditions and explore some possibilities as to how such discourse conditions can be organized into a formalized theory.

In chapter 3, it is maintained that PRO in obligatory control (OC) contexts is licensed by the Chain Condition. Discussed also are some of the objections raised by a number of researchers to the idea that the same mechanism underlies OC PRO and anaphors (in argument positions of syntactic predicates). Furthermore, it is illustrated that PRO in non-obligatory control (NOC) environments is logophoric and is licensed by discourse conditions. Lastly, it is argued that there exist control constructions that look very much like OC but are, in fact, properly classified as NOC, which I term pseudo-obligatory control (POC).

In chapter 4, I deal with some of the residual issues in control theory. Here, three problems are taken up: the choice of controller with OC double complement verbs, partial control and the difference between predicates that exhibit raising and those that exhibit arbitrary control.

Résumé

Cette thèse présente une théorie qui explique le liage et le contrôle à l'aide de mécanismes communs. Bien qu'une explication unifiée des deux phénomènes ait été fréquemment tentée dans les années 80 et 90, une telle approche semble avoir été impopulaire à cause de certains problèmes depuis la fin des années 90. Dans cette étude il est démontré que ces problèmes ne sont que superficiels et qu'ils peuvent être surmontés par un examen attentif.

Dans le Chapitre 2, je commence avec la présomption de Reinhart & Reuland (1993) selon laquelle l'application de la Condition A de la théorie du liage est restreinte aux anaphores en position d'argument de prédicats syntaxiques. J'adopte ensuite la modification que Fox (1993) a apportée à la théorie de Reinhart & Reuland (1993), selon laquelle la Condition A est réduite à la Condition de Chaîne. Au cours de la discussion, d'autres révisions sont suggérées. En particulier, le domaine de la formation de la chaîne A est définie en termes de prédicats syntaxiques, que j'appelle le Domaine de Projection de la Chaîne A (DPCA).

En ce qui concerne les anaphores qui ne sont pas en positions de prédicats syntaxiques, je considère l'hypothèse des auteurs cités plus haut selon laquelle elles sont souvent appelées des logophores, lesquelles sont gouvernées par un ensemble de conditions discursives. J'identifie certaines de ces conditions et explore certaines possibilités selon lesquelles de telles conditions discursives peuvent être organisées en une théorie formalisée.

Au chapitre 3, je maintiens que PRO en contexte de contrôle obligatoire (CO) est licencié par la Condition de Chaîne. J'examine également certaines des objections à l'idée que le même mécanisme sous-tende PRO OC et les anaphores (en positions d'arguments de prédicats syntaxiques) soulevées par un nombre de chercheurs. De plus, je montre que PRO en environnements de contrôle non obligatoire (CNO) est logophorique et est licencié par des conditions discursives. Enfin, je propose qu'il existe des constructions de contrôle qui ressemblent beaucoup aux CO mais qui sont, en fait, mieux classifiées en tant que CNO, que je nomme contrôle pseudo obligatoire (CPO).

Au chapitre 4, je m'occupe de certaines questions résiduelles de la théorie du contrôle. Ici, j'aborde trois problèmes : le choix de contrôleur dans les constructions contenant des verbes à double complément CO, le contrôle partiel, et la différence entre les prédicats qui indiquent la montée et ceux qui indiquent le contrôle arbitraire.

Acknowledgments

When I look back now, writing this dissertation was such a challenging, as well as very enjoyable, experience for me. I have no doubt that this achievement could not have been made without the help of people around me. Thus, I would like to use this space to give a few words of appreciation to those people who supported me in various ways. Of course, all the errors that might be found in this thesis are solely my responsibility.

First and foremost, I would like to express my deepest gratitude to my supervisor, Lisa deMena Travis. She has been a great mentor for me since I first came to McGill. After Lisa agreed to be my supervisor in 2000, I consulted her about my research a number of times. She always read my works very carefully and gave me insightful comments very promptly.

I owe much as well to my second supervisor, Kyle Johnson, who is a professor at University of Massachusetts, Amherst. Although he stayed at McGill for only one year, he graciously agreed to act as my supervisor. After Kyle returned to UMass, he visited Montreal at every opportunity and devoted some time to discussions with me.

I am also grateful to the third member of my committee, Jon Nissenbaum, to Brendan Gillon and Junko Shimoyama, who served on my oral defense committee, and to Genoveva Puskas and Stanley Dubinsky, who served as external examiners. All of them pointed out important issues of this study.

I would also like to acknowledge the other faculty members of the department, past and present, to whom I owe my linguistic education. To mention a few names: Jonathan David Bobaljik (morphology & syntax), Nigel Duffield (syntax), Heather Goad (phonetics), Glyne Piggott (phonology), Benjamin Shaer (semantics & pragmatics), Lydia White (aquisition), and Susanne Wurmbrand (syntax). My thanks also go to Charles Boberg, Veena D. Dwivedi, Yosef Grodzinsky, Andrea Gualmini, Peter Hallman, Dawn MacLaughlin, Máire Noonan, Michel Paradis (thanks for the résumé), Bernard Schwarz and Alan Yu.

I was also greatly supported by my fellow students in the department. Before anything else, I would like to say thank you to Mikinari Matsuoka and Naoko Tomioka, who helped me enormously not only in terms of study but also in terms of life in general. Though I benefited from all the other students in the department some way or another, I will limit myself below to giving the names of people to whom I am particularly indebted. Among the graduate students, I was especially helped by Jozefien Akkermans, Kenichi Ariji, Alan Bale, Hela Ben Ayed, Gustavo Beritognolo, Lora Bolton, Kathleen Brannen,

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Abbreviations Used in the Glosses

In the glosses attached to non-English examples, the following abbreviations are used throughout the thesis.

1	1st person
2	2nd person
3	3rd person
Acc	accusative
Caus	causative
Comp	complementizer
Dat	dative
Fact	factual
fm	feminine
Fut	future
Gen	genitive
ms	masculine
NE	prenominal particle
Nom	nominative
Nonperf	nonperfective
ob	object
Opt	optative
Perf	perfective
pl	plural
Prog	progressive
Prt	particle
Punc	punctual
SE	SE (simplex expression) anaphor
sg	singular
su	subject
Subj	subjunctive
Top	topic

Chapter 1   Introduction

1.1 Background

In the field of linguistics, it is sometimes suggested that two or more phenomena originally viewed as unrelated should be governed by a single condition or, so to speak, a "super-condition".   For example, Rizzi (1990a) proposes a principle called Relativized Minimality, under which the ban on Super-Raising (Chomsky 1986a), the *Wh*-Island Constraint (Chomsky 1977) and the Head Movement Constraint (Travis 1984) are subsumed.   According to Relativized Minimality, in the configuration depicted in (1), the chain formation between X and Y is blocked by an intervenor Z, which is of the same type as X.

(1) [... X ... $\underline{Z}$ ... Y ...]

Therefore, an A-chain cannot be formed across an A-element, as shown in (2), an A'-chain cannot be formed across an A'-element, as shown in (3), and a head chain cannot be formed across a head, as shown in (4).[1]

(2)a. Mary_i[2] seems t_i to be intelligent.[3]

　　b. *Mary_i seems that $\underline{it}$ is likely t_i to be intelligent.   (Ban on Super-Raising)

(3)a. What_i did John buy t_i?

　　b. *What_i do you wonder $\underline{who}$ bought t_i?   (*Wh*-Island Constraint)

(4)a. Has_i Bill t_i been working?

　　b. *Been_i Bill $\underline{has}$ t_i working?   (Head Movement Constraint)

Turning to constructions with infinitives and gerunds, it has been recognized for a long time that their embedded subjects are often left unexpressed even in non-pro-drop languages like English.   Observe example (5a).

(5)a. Kevin hopes ＿＿＿ to win the game.

　　b. Kevin_i hopes that he_i will win the game.

In (5a), whereas the matrix subject is clearly *Kevin*, the embedded subject is apparently missing.   Since this sentence can be roughly paraphrased as in (5b), it is evident that at least semantically, the subject of *to win the game* is also *he* (=*Kevin*).   One fundamental

question then is how subjectless nonfinite clauses as in (5a) end up having the appropriate interpretations with respect to their subjects.   In the standard Principles and Parameters approach, a phonologically null element usually represented as PRO is assumed to occupy empty subject positions.   In (5a) then PRO is said to be controlled by *Kevin*, which is referred to as the controller or antecedent.

In the 1980's and early 90's, many researchers tried to achieve a unified account of PRO and anaphors in some way for their apparent overlap in characteristics (e.g. Manzini 1983, Koster 1984, Borer 1989, Clark 1990, Kawasaki 1993, to name a few). For example, as indicated by the contrast between (6a) and (6b), PRO must have a "local"[4] antecedent in certain cases.   Furthermore, as suggested by the ill-formedness of (6c), it often needs to be c-commanded[5] by its antecedent.

(6)a. Harry$_i$ tried [PRO$_i$ to speak his mind in public].
   b. *Harry$_i$ thinks [that Sarah tried [PRO$_i$ to speak his mind in public]].
   c. *Harry's$_i$ sister tried [PRO$_i$ to speak his mind in public].

As illustrated in (7), similar requirements can also be observed in certain instances of anaphors.

(7)a. Laura$_i$ loves herself$_i$ very much.
   b. *Laura$_i$ believes [that Jim loves herself$_i$ very much].
   c. *Laura's$_i$ father loves herself$_i$ very much.

However, since the late 90's, a unified approach seems to have been unpopular due to certain problems (see Mohanan 1985, Rizzi 1986, Sakaguchi (1990), Lasnik 1992 & Landau 2000).   In the present thesis I would like to reattempt a unified analysis of PRO and anaphors.   Specifically, I will argue that what is called obligatory control PRO and anaphors in argument positions of syntactic predicates[6] are both licensed by Reinhart & Reuland's (1993) version of the Chain Condition.   As for non-obligatory control PRO and anaphors that are not in argument positions of syntactic predicates, I will maintain that they are both governed by a set of discourse conditions.

By way of preface, I would like to mention a few important features that characterize the present dissertation.   First, while I readily adopt individual ideas from research conducted in the Minimalist Program (Chomsky 1995, 2000, 2001, etc), I am not necessarily committed to the framework itself.   In fact, this thesis is more or less written in the older framework of the Principles and Parameters approach.   This is

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because I feel that Minimalism has not yet passed the problematic stage, as there are still arguments both for and against it even amongst generative linguists. Note, however, that for the most part, the analysis presented here is easily translatable along the lines of the Minimalist Program for advocates of such a framework.

Second, as for other authors' data that I deem to be crucial to my analysis, I retest it myself whenever possible. Furthermore, when a newly obtained result is inconsistent with a previously reported one, I express disagreement without reserve. This is worthy of attention, since it is possible that such original data stems from an accidental error. According to the principles of the scientific method, a result lacking reproducibility is treated as invalid.

My third comment also concerns data handling. In the community of linguistics, it is often said that relative judgments (i.e. judgments of one sentence relative to another) are more important than absolute judgments (i.e. judgments of a sentence with reference to an absolute criterion). Although I do not deny the significance of relative judgments, I believe that absolute judgments are equally important. This is especially so in that they are useful to avoid what I call a "wild card problem". In order to illustrate my point, consider a concrete example as follows.

(8) *Mary$_i$ knew [that it disturbed John [PRO$_i$ to expose herself]].
      (adapted from Landau 2000 (2a) p.92)

Landau (2000) provides this example to support his claim that psychological predicates with their infinitival arguments "extraposed"[7] do not allow "long-distance" control. However, actually consulting informants about their judgments on (8), I found that its ill-formed status was somewhat subtle. Namely, for most speakers, it is indeed not perfect, but it is still not completely ruled out either.   Their consensus appears to be that (8) is less acceptable than (9a) but more acceptable than (9b).

(9)a. Mary$_i$ knew [that it disgraced John [PRO$_i$ to expose herself]].
      (adapted from Landau 2000 (2b) p.92)
   b. *Mary$_i$ knew [that John tried [PRO$_i$ to expose herself]].

Now suppose that just like Landau, one wanted to claim that psych-predicates prohibit "long-distance" control when their infinitives are "extraposed".   Then one might quote the contrast between (8) and (9a), saying that the former is worse than the latter,[8] which is only minimally different with respect to the psych/non-psych-parameter.   On the other

hand, suppose that one wanted to argue that such control is possible. Then one might contrast (8) with (9b), saying that the former is not as bad as the latter, which is a typical ungrammatical "long-distance" control example. That is, the same sentence can be used in support of exactly the opposite conclusions, which is what I mean by a wild card fallacy. As for the status of (8), based on the absolute judgments, it will be concluded in chapter 3 that the sentence is in the acceptable range.

Fourth, in this thesis I try my best to employ the simplest examples possible. Complicated examples have a greater chance of including confounding variables. Above all, lengthy sentences tend to result in performance errors on the part of the informant. Moreover, carelessly adding unnecessary elements may introduce unexpected factors. For instance, as briefly touched on above, it is well established in the area of binding that an anaphor in the object position requires a "local" antecedent. However, there are some contexts where a "long-distance" antecedent of such an anaphor is permitted. Consider example (10b) in comparison with (10a).

(10)a. *John$_i$ thinks [that Paul hates himself$_i$].
　　 b. John$_i$ thinks [that Paul hates himself$_i$ as well as Mary].
　　　 (Zribi-Hertz 1989 (78a) & (78b) p.719)

According to Zribi-Hertz (1989), an anaphor before a heavy adjunct can be used emphatically, which allows a "long-distance" antecedent, as can be seen in (10b). It would be highly unwise to employ such examples to make any argument about ordinary anaphors.[9] Thus, to reduce potential confounds, it is important to keep examples as simple as possible.

1.2 Organization of the Thesis

Let us have a quick overview of the thesis.[10] In chapter 2, I will discuss anaphors and related issues. I will start with Reinhart & Reuland's (1993) approach to binding with Fox's (1993) modification, where anaphors in argument positions of syntactic predicates are licensed by the Chain Condition. I will further revise this approach to make it a more secure theory. In particular, I will define the domain for A-chain formation over syntactic predicates, which is called the A-Chain Projection Domain (ACPD). I will also argue that CP is not a barrier for A-chain formation. In addition, I will reinterpret the Chain Condition as a derivational condition based on

certain examples. Furthermore, it will be suggested that for V that does not have a subject (e.g. passive verb, raising verb), an item in the Spec of the IP that is its extended projection in the sense of Grimshaw (2000 & 2005) is regarded as its subject. I will then maintain that the genitive DP in English possessive constructions is not a subject of the head noun nor even an argument of it.

In the second half of the chapter, I will deal with anaphors that are not in argument positions of syntactic predicates, often called logophors. First, it will be shown that logophors are licensed by a set of discourse conditions. Specifically, I will introduce Kuno & Kaburaki's (1977) theory of empathy in relation to logophor licensing. I will then suggest some modifications to Kuno & Kaburaki's approach. Next, I will propose non-empathy-related discourse factors, which have to do with processing. I will also explore some possibilities as to how discourse conditions can be organized into a formalized theory.

Towards the end of the chapter, I will concentrate on *picture*-noun anaphors. First, I will confirm that possessor-less *picture*-noun anaphors are indeed logophoric. I will begin by briefly reviewing Belletti & Rizzi's (1988) proposal that attributes backward *picture*-noun anaphora to the peculiar structure associated with object-Experiencer psychological verbs. Some objections will then be raised against Belletti & Rizzi's approach. In particular, it will be shown that an object-Experiencer psychological verb is not a sufficient condition nor a necessary condition for backward *picture*-noun anaphora. Furthermore, one section will be devoted to a response to the "mixed" approach by Fox & Nissenbaum (2004), where possessor-less *picture*-noun anaphors are licensed either by Condition A or by discourse conditions. Finally, I will consider the implications of the above discussion. In the last part of chapter 2, I will argue that there are two subtypes of so-called possessed *picture*-NPs: the *picture*-type and the *criticism* (in the process reading)-type.

In chapter 3, I will discuss PRO and related issues. My main concern here is how PRO is interpreted in control constructions. I will first briefly mention the observation made by Williams (1980) that broadly classified, there are two types of control relations: obligatory control (OC) and non-obligatory control (NOC). I will then sketch out my basic analysis of OC. Specifically, I will argue that in OC, PRO is licensed by the Chain Condition. Thus, in my approach, OC and anaphor binding are governed by the same mechanism. Some potential problems with such a unified approach will be discussed, which have been previously noted by a number of authors. Next, I will turn to the analysis of NOC. I will show that PRO in NOC contexts is logophoric and is licensed by discourse conditions. I will then present a concrete

mechanism by which NOC sentences are derived. I will also take up verbs with gerundive "complements" that exhibit the NOC effect, which can potentially be problematic for the analysis presented in this chapter.

In the last part of chapter 3, I will argue that there exist control constructions that look very much like OC but are, in fact, properly classified as NOC, which I call pseudo-obligatory control (POC).   First, I will explain what is exactly meant by "POC". Then I will give diagnoses with respect to four constructions as to whether they are POC or not.

In chapter 4, I would like to address some residual issues in control theory. First, I will shed some new light on how the controller is selected with OC double complement verbs, where the "local" domain of PRO contains more than one DP argument.   For instance, consider the following pair of examples.

(11)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].
   b. Peter$_i$ asked Amy$_j$ [PRO$_{*i/j}$ to leave].

In the above sentences, it appears that both the matrix subjects and the matrix indirect objects are within the "local" domain of PRO. Nevertheless, in (11a) it is only the subject *Peter* that can control PRO, whereas in (11b) it is natural to take the object *Amy* as the controller.[11]   I will argue that this difference comes from two distinct semantic features that the verbs, *promise* and *ask*, each inherently carry.

Next, I will investigate partial control. Partial control is a phenomenon in which the value of a controller is a proper subset of that of PRO.   The effect is typically induced by a control predicate that requires a "plural" subject combined with a singular controller, as in the following example.

(12) The chair$_i$ hated [PRO$_{i+j}$ gathering without a concrete agenda].
   (Landau 2000 (52a) p.45)

In (12) the referent of PRO has to be a plural of sorts because the control predicate is a collective one *gather*.   However, the controller is *the chair*, which does not exhaust the value of PRO.   I will argue that this effect arises as a result of PRO being lexically prespecified as plural in semantic number.

As the last problem in chapter 4, I will explore the puzzle of why, among one-place predicates that take an infinitive as an argument, some exhibit raising while others arbitrary control.   For example, while *seem* is a raising predicate and not a control

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predicate, as indicated in (13), the opposite is true of *(be) possible*, as can be seen in (14).

(13) a. John$_i$ seems [t$_i$ to underestimate costs].
   b. *When the numbers are so big, it seems [PRO$_{arb}$ to underestimate costs].
   (Uchiumi 2005b (1a) & (1b) p.1)

(14) a. *John$_i$ is possible [t$_i$ to underestimate costs].
   b. When the numbers are so big, it is possible [PRO$_{arb}$ to underestimate costs].
   (Uchiumi 2005b (2a) & (2b) p.1)

I will illustrate that the different behaviors of these two predicates can be attributed to the underlying structures to which each predicate is assigned.

Notes to Chapter 1

1. I accept Rizzi's account of the paradigms in (3) and (4) based on Relativized Minimality. However, with respect to A-chain formation as in (2), I assume that it is subject to Reinhart & Reuland's (1993) version of the Chain Condition, which is independent of Relativized Minimality (see the discussion in section 2.5).

2. In this thesis subscripted lower-case letters are used to indicate either coindexation or coreference. For the difference between coindexation and coreference, see Reinhart (1983 & 1986), Grodzinsky & Reinhart (1993) and Reinhart & Reuland (1993).

3. Example sentences whose sources are not specified are those constructed by myself for the present research. The Japanese examples are primarily based upon my judgments as a native speaker with occasional reference to other speakers. Those illustrative sentences that are not Japanese were collected by me by consulting native speakers of the relevant language. Also, with non-English examples cited from the literature, I take the liberty to make minor amendments to orthographies, glosses and translations so as to maintain consistency throughout the dissertation.

4. The rigorous definition of locality will be provided in section 3.4.1 with respect to PRO and in section 2.5.1 with respect to anaphors. For the moment, readers can roughly take "local" as 'being fairly close'. By the same token, "long-distance" can roughly be understood as 'being more or less far away'.

5. In this thesis I adopt the standard definition of c-command by Reinhart (1976), given in (i).

    (i) C-Command:

        Node A c(constituent)-commands node B if neither A nor B dominates the other and the first branching node which dominates A dominates B.

        (Reinhart 1976 (36) p.32)

6. As to what a syntactic predicate is, see section 2.3. See also Reinhart & Reuland (1993), who first introduced this notion into syntactic research.

7. "Extraposed" here is a descriptive term to indicate that the element at issue appears at the end of the sentence. In fact, Landau claims that the infinitive in (8) is not displaced at all but is base-generated sentence-finally. See Landau (2000 & 2001) for details. See also sections 3.3.4 & 3.6.2.1 on this issue.

8. As will be discussed in chapter 3, even (9a) is slightly degraded for some speakers.

9. Of course, if one is specifically investigating emphatic anaphors, then (10b) is the appropriate example to be using.

10. Chapters 2 and 3 of this thesis are a revised and extended version of Uchiumi (2003).

11. As mentioned in Chomsky (1981), Farkas (1988) and Landau (2000), some speakers can actually interpret sentences like (11b) as subject control as well. This will be discussed in section 4.2.3.2.

Chapter 2　Anaphors and Related Issues: Binding

2.1 Introduction

Reflexive elements like *myself*, *himself* and *yourselves* and reciprocal elements like *each other* and *one another* are called anaphors.　As Chomsky (1986b) and Keenan (1988) put it, anaphors are referentially defective.　This is borne out by the fact that they cannot be used exophorically like pronouns, directly picking up referents from the real world.　Thus, they require some formal licensing by which referential content for interpretation can be linguistically assigned to them.

In a perfect world, a single, simple licensing condition for anaphors would suffice.　It would perhaps be expressed in the form, 'An anaphor must have an antecedent within (the fixed domain of) α'.　However, with respect to this matter, the world does not appear to be perfect.　It has turned out that the properties of the licensing mechanism are seemingly beyond what such a simple formulation can describe.

As a result, theorists have mainly taken two kinds of approaches towards dealing with anaphors.　In the first type of approach, there exists only one condition, but the condition is carefully defined so that it may subtley change depending on the environment.　In such an approach, no matter what form the condition may ostensibly take, it can be expanded into a form something like, 'An anaphor must have an antecedent within α, and α is determined by A and B if ..., whereas α is determined by A, B and C if ...'.　Principle A, proposed by Chomsky (1981), is of this type.　It is so considered, because the accessibility clause that goes with this condition is postulated specifically for anaphors embedded in DPs (i.e. here, the accessibility clause corresponds to C above) (see Chomsky (1981) for details; see also section 2.2 for a brief summary).

The second type of approach admits that all anaphor occurrences are not a uniform phenomenon and posits more than one licensing condition.　The approach taken by Reinhart & Reuland (1993) belongs to this type.　They argue that anaphors in argument positions of syntactic predicates are regulated by Condition A, while anaphors that are not in such positions, called logophors, are governed by a set of discourse conditions (see Reinhart & Reuland (1993) for details; see also section 2.3 for a brief summary).

It seems that on conceptual grounds, the two kinds of approaches are almost even.　Thus, the decision of which is ultimately better is entirely an empirical one. Namely, the question is whether basically, one condition explains the behaviors of all anaphors, or two or more separate conditions are required.

In this chapter I will entertain Reinhart & Reuland's (1993) approach to binding with Fox's (1993) modification. Also, I will develop it into a more secure theory with further revisions. The rest of the chapter is organized as follows. In section 2.2, I will briefly review Chomsky (1981) as one of the standard approaches to binding. In section 2.3, I will introduce Reinhart & Reuland's (1993) approach to binding. In section 2.4, I will take up Fox's (1993) modification to Reinhart & Reuland's theory, whereby Condition A is reduced to the Chain Condition.

In section 2.5, I will further modify Reinhart & Reuland (1993)/Fox (1993)'s theory. In section 2.5.1, I will define the domain for A-chain formation over syntactic predicates, which is called the A-Chain Projection Domain (ACPD). In section 2.5.2, I will argue that CP is not a barrier for A-chain formation and provide some supporting evidence for this claim. In section 2.5.3, I will reinterpret the Chain Condition as a derivational condition based on certain examples. In section 2.5.4, it will be suggested that for V that does not have a subject (e.g. passive verb, raising verb), an item in the Spec of the IP that is its extended projection in the sense of Grimshaw (2000 & 2005) is regarded as its subject. In section 2.5.5, I will maintain that the genitive DP in English possessive constructions is not a subject of the head noun nor even an argument of it.

In section 2.6, it will be shown that logophors are licensed by discourse conditions. In section 2.6.1, I will introduce Kuno & Kaburaki's (1977) theory of empathy in relation to logophor licensing. In section 2.6.2, I will suggest some modifications to Kuno & Kaburaki's approach. In section 2.6.3, I will propose non-empathy-related discourse factors, which have to do with processing. In section 2.6.4, I will explore some possibilities as to how discourse conditions can be organized into a formalized theory.

In section 2.7, I will reconfirm that possessor-less *picture*-noun anaphors are indeed logophoric. In section 2.7.1, I will briefly go over Belletti & Rizzi's (1988) proposal that attributes backward *picture*-noun anaphora to the peculiar structure associated with object-Experiencer psychological verbs. In section 2.7.2, some objections will be raised against Belletti & Rizzi's approach. In section 2.7.3, it will further be shown that an object-Experiencer psychological verb is not a sufficient condition nor a necessary condition for backward *picture*-noun anaphora. Section 2.7.4 will be a response to the "mixed" approach by Fox & Nissenbaum (2004), where possessor-less *picture*-noun anaphors are licensed either by Condition A or by discourse conditions. In section 2.7.5, I will consider the implications of the discussion in this section.

In section 2.8, I will argue that there are two subtypes of so-called possessed

picture-NPs: the *picture*-type and the *criticism* (in the process reading)-type.   A summary of this chapter will be contained in section 2.9.

2.2 The Standard GB Approach to Binding

In Chomsky (1981) the theory of binding is developed within the theory of government.   Thus, this approach to binding crucially relies on what is called a governing category, given in (1).

(1) Governing Category:

β is a governing category for α if and only if β is the minimal category containing α, a governor of α, and a SUBJECT accessible to α.

(Chomsky 1981 (70II) p.211)

Since a governing category is a domain used in binding theory, α in (1) is necessarily NP[1]. Therefore, definition (1) can be understood as, 'The governing category for an NP is the smallest category containing this NP itself, a governor[2] of it and a SUBJECT accessible to it'.   A SUBJECT is a modified notion of the traditional subject, so that AGR, the subjects of nonfinite clauses/small clauses and the possessors of NPs are counted as such.[3]   A governing category is always S or NP, because it requires a SUBJECT as an essential element.   It is not the case that every NP has a governing category, however. Namely, when an NP does not have a governor, it simply lacks a governing category.   A SUBJECT is accessible to an NP only if the former c-commands the latter, and (hypothetically) giving the index that the former bears to the latter would not violate the so-called i-within-i condition.[4]

Chomsky assumes AGR to be a sort of PRO in INFL whose categorial status is N (not NP) and that accompanies [+Tense] in unmarked cases.   This element governs the subject NP, receiving an index from it.   This makes it possible to reduce the subject-verb agreement to the general phenomenon of coindexation.   It is also supposed that AGR somehow c-commands the subject NP in S.

In addition, the theory makes use of two other notions: "bound" and "free".   If element α is coindexed with element β, and the former is c-commanded by the latter, then α is said to be bound by β.   If β is in an A-position, then α is A-bound, and if β is in an A'-position, then α is A'-bound.   α is said to be A-free if α is not A-bound by anything, and α is said to be A'-free if α is not A'-bound by anything.

NPs are subdivided into three basic types. The first type are called anaphors and include lexical anaphors (e.g. *himself, yourselves, each other*), NP-trace and PRO. The second kind are called pronominals, to which pronouns and PRO[5] belong. The third class, called R-expressions, includes names, quantifiers and variables. Binding theory has one principle for each of these types of NPs. Also, it is assumed that these principles apply at the level of S-structure.

Anaphors are subject to Principle A, which requires that they are A-bound in their governing category. This condition immediately excludes anaphors in the subject position of a finite clause. For such anaphors, the finite S is their governing category with AGR as their governor and accessible SUBJECT. Since the subject is, by definition, the highest A-position in a clause (or some other designated phrase), there is no way that this anaphor can be A-bound in the designated domain. On the other hand, an anaphor is permitted in the subject position of a nonfinite clause/small clause, as shown in (2).

(2)a. [$_S$ They want for [$_S$ each other to win]]. (Chomsky 1981 (14ii) p.189)

    b. [$_S$ They would be happy for [$_S$ each other to win]].
      (Chomsky 1981 (14iii) p.189)

    c. [$_S$ They consider [$_S$ each other (to be) intelligent]].

In the first two sentences, *each other* is governed by the complementizer *for*, and in example (2c), by the verb *consider*. The matrix AGR is the SUBJECT accessible to it in all the three cases. Thus, the governing category for these anaphors is the minimal S or NP containing those two elements as well as the anaphors themselves. Such a constituent falls on the matrix S, within which the reciprocals are properly bound. That the specified part is indeed the governing category is evidenced by the fact that if the anaphors are not bound in this domain, then the sentences are ungrammatical, as can be seen in (3).

(3)a. *They believe that [$_S$ I want for [$_S$ each other to win]].

    b. *They believe that [$_S$ I would be happy for [$_S$ each other to win]].

    c. *They believe that [$_S$ I consider [$_S$ each other (to be) intelligent]].

Meanwhile, an anaphor can occur in the object position regardless of the clause type, so long as it is bound within its governing category. Consider first the finite examples in (4).

(4)a. [$_S$ John hates himself].
    b. [$_S$ John talked about himself].

With respect to *himself*, its governor is *hates* in (4a) and *about* in (4b). Also, its accessible SUBJECT is AGR in both sentences. Thus, the governing category for these anaphors is the root clause, because it is the minimal S or NP containing those elements. Since the reflexives are indeed bound within this domain, the examples are grammatical. If the anaphors are not bound in this range, then the sentences are ill-formed, as shown in (5).

(5)a. *John believes that [$_S$ Mary hates himself].
    b. *John believes that [$_S$ Mary talked about himself].

The situation is basically the same with nonfinite clauses except that the SUBJECTs accessible to the anaphors are not AGR but the subjects of those clauses. Therefore, an identical paradigm is obtained with such clauses, as indicated in (6) and (7).

(6)a. Mary expects [$_S$ John to hate himself].
    b. Mary expects [$_S$ John to talk about himself].
(7)a. *John expects [$_S$ Mary to hate himself].
    b. *John expects [$_S$ Mary to talk about himself].

Turning to anaphors embedded in NPs, the following four-way contrast can be observed.

(8)a. [$_{NP}$ Their stories about each other].   (Chomsky 1981 (57i) p.207)
    b. *[$_S$ They heard [$_{NP}$ my stories about each other]].
       (Chomsky 1981 (78) p.213)
    c. [$_S$ They heard [$_{NP}$ (the) stories about each other]].
       (Chomsky 1981 (78) p.213)
    d. *They believe that [$_S$ I heard [$_{NP}$ the stories about each other]].

In (8a) the governor of *each other* is the preposition *of*, and the SUBJECT accessible to it is genitive *their*. The minimal S or NP containing these elements is the whole NP, which is the governing category for this anaphor. Since the reciprocal is properly bound

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within this domain, the phrase is well-formed.   If the anaphor is not bound in this range, then the example is ungrammatical, as can be seen in (8b).

The situation is a little different in (8c).   That is, the NP does not have a SUBJECT.   Thus, the entire S is the minimal S or NP containing a SUBJECT accessible to the reciprocal as well as a governor of it.   Since this constituent is the governing category for the anaphor, the example is grammatical.   If the antecedent is outside this domain, then the sentence is ill-formed, as shown in (8d).

Now the examples in (9) are more interesting.

(9)a. [$_S$ They expected that [$_S$ [$_{NP}$ pictures of each other] would be on sale]].
   b. *They thought [$_S$ I expected that [$_S$ [$_{NP}$ pictures of each other] would be on sale]].
   (Chomsky 1981 (79ii) p.213 & (80) p.214)

In (9a), just as in (8c) and (8d), the bracketed NP lacks a SUBJECT.   The lower clause does have a SUBJECT, namely the embedded AGR.   However, this element is not accessible to *each other*, because the former being coindexed with the bracketed NP by subject-verb agreement, giving its index to the latter would violate the i-within-i condition.   Therefore, the governing category for the anaphor is expanded as far as the higher clause, where the matrix AGR is present.   Since the reciprocal is indeed bound within this domain, the example is well-formed.   If the antecedent is outside this range, then the sentence is ungrammatical, as can be seen in (9b).

An anaphor can also occur as the possessor of an NP, as shown in the following examples.

(10)a. [$_S$ They read [$_{NP}$ each other's books]].   (Chomsky 1981 (93) p.217)
    b. *They thought that [$_S$ I read [$_{NP}$ each other's books]].

In (10a) the governing category for *each other* is the matrix S, which is the minimal S or NP containing its governor, namely the head of the N', and its accessible SUBJECT, namely AGR.   Since the reciprocal is properly bound within this domain, the example is grammatical.   If the anaphor is not bound in this range, then the sentence is ill-formed, as can be seen in (10b).

Chomsky then adopts the proposal by Norbert Hornstein[6] that if a given element is governed but does not have a SUBJECT accessible to it, then its governing category is the root clause.[7]   This stipulation is needed to exclude examples like the following.

(11) *[$_S$ For [$_S$ each other$_i$ to win] would be unfortunate for them$_i$].[8]
   (Chomsky 1981 (98) p.220)

In (11) *each other* is governed by *for* but does not have a SUBJECT accessible to it. Thus, because of the added article, its governing category is the root S, within which the reciprocal is not bound. Without this rider, the anaphor would lack a governing category and hence should be able to be freely coindexed with the pronoun *them*, clearly an undesirable result.

   As mentioned above, Principle A covers NP-traces as well. Since by definition, an NP-trace is not Case-marked (a Case-marked trace being a variable), it only appears as the subject of a raising predicate or as the object of a passive verb.[9] Consider the examples below.

(12)a. [$_S$ John$_i$ is quite certain [$_S$ t$_i$ to win]]. (Chomsky 1981 (10ii) p.165)
    b. [$_S$ Bill$_i$ was teased t$_i$ by Sue].

In (12a) the governor of the NP-trace is the raising adjective *certain*,[10] and the SUBJECT accessible to it is the matrix AGR. Thus, the governing category for this anaphor is the matrix S, which is the minimal S or NP containing those elements. Since the trace is appropriately bound within this domain, the example is well-formed. Likewise, in (12b) the governing category for the NP-trace is the whole sentence, because it is the minimal S or NP containing its governor, namely the verb *teased*, and its accessible SUBJECT, namely AGR. Since the trace is properly bound within this domain, the example is again grammatical. As expected, if the traces are not bound in these domains, then the sentences are ruled out, as shown in (13).

(13)a. *John$_i$ seems that [$_S$ it is certain [$_S$ t$_i$ to win]].
    b. *Bill$_i$ seemed that [$_S$ it was teased t$_i$ by Sue].

   Next, pronominals are subject to Principle B, which requires that they are A-free in their governing category. This entails that a pronominal can have an antecedent only outside this domain. Since a governing category is the same for pronominals and anaphors, the two should display complementary distribution. Thus, as illustrated in (14), a pronoun is disjoint in reference from an NP by which an anaphor could be A-bound.

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(14)a. [$_S$ John$_i$ saw him$_{*i/j}$].   (Chomsky 1981 (16i) p.190)

   b. [$_S$ John$_i$ talked about him$_{*i/j}$].

   c. [$_S$ John$_i$ would prefer for [$_S$ him$_{*i/j}$ to win]].
      (Chomsky 1981 (16iv) p.190)

   d. [$_S$ John$_i$ considers [$_S$ him$_{*i/j}$ (to be) intelligent]].

By contrast, outside its governing category, a pronoun can freely be coindexed, as indicated in (15).

(15)a. [$_S$ John$_i$ expected that [$_S$ he$_{i/j}$ would catch Mary]].
      (Chomsky 1981 (17ii) p.191)

   b. [$_S$ John$_i$ expected [$_S$ that Mary would catch him$_{i/j}$]].

   c. [$_S$ John$_i$ expected [$_S$ Mary to catch him$_{i/j}$]].   (Chomsky 1981 (17i) p.191)

The same is true of pronouns embedded in NPs. Consider the following examples.

(16)a. *[$_S$ I saw [$_{NP}$ John's$_i$ picture of him$_i$]].

   b. [$_S$ John$_i$ saw [$_{NP}$ my picture of him$_i$]].
      (Chomsky 1981 (92ii) & (92i) p.217)

In (16) the governing category for *him* is the bracketed NP because of the existence of a SUBJECT accessible to it, namely the possessor. Thus, this pronoun cannot be coindexed with an element in this domain, as shown in (16a), whereas it can be done so outside of it, as can be seen in (16b). On the other hand, in the examples below, the governing category for *him* is not the bracketed NP but the matrix S, since the noun *picture* does not project a possessor.

(17)a. *[$_S$ John$_i$ saw [$_{NP}$ a picture of him$_i$]].[11]

   b. [$_S$ John$_i$ thought [$_S$ I saw [$_{NP}$ a picture of him$_i$]]].
      (Chomsky 1981 (92iii) & (92iv) p.217)

As a consequence, (17a) is awkward, because the pronoun is not free in the designated domain.   In (17b), by contrast, since the antecedent is outside this range, the sentence is perfectly well-formed.

However, one problem with this approach lies in genitive pronouns, which can be exemplified by the following pair of sentences.

(18)a. [$_S$ John$_i$ read [$_{NP}$ his$_i$ book]].
b. John$_i$ thought [$_S$ I saw [$_{NP}$ his$_i$ book]].
(Chomsky 1981 (92v) & (92vi) p.217)

In the above examples, the governor of *his* is the head of the N', and the SUBJECT accessible to it is the AGR of its own clause. Thus, the governing category for these pronouns is the bracketed S. This means that Principle B correctly rules in (18b) but incorrectly rules out (18a). Chomsky assumes that there exists some other condition overriding the requirements of binding theory, which makes the latter grammatical.

Principle B is also relevant to PRO. This element is like a pronoun in that it never has an antecedent within the clause or NP that immediately contains it. However, PRO resembles an anaphor as well in that it has no intrinsic referential content and must be assigned reference by an antecedent, or alternatively, is indefinite in interpretation without specific reference. Hence, PRO is considered to be a "pronominal anaphor", which is subject to both Principle A and Principle B. That is, this element needs to be simultaneously bound and free in its governing category, an obvious contradiction. The only way to resolve this dilemma is to ensure that PRO does not have a governing category, whereby it satisfies both principles vacuously. Consequently, PRO must be ungoverned, which is sometimes called the PRO Theorem. As a result, where PRO can occur is an ungoverned position, specifically, the subject position of a nonfinite clause as in (19).

(19)a. John tried [PRO to win].
b. John thinks that [PRO feeding himself] will be difficult.
(Chomsky 1981 (8) p.66 & (5ii) p.57)

The way in which PRO is construed, namely how its antecedent is selected or how it is assigned an arbitrary interpretation, is determined by another module of grammar, the theory of control, as it is commonly called.

Finally, R-expressions are subject to Principle C, which requires that they are A-free throughout. Consider the following examples.

(20)a. [$_S$ He$_{*i/j}$ saw John$_i$].

b. [_{NP} His$_{*i/j}$ picture of John$_i$].

c. [_S He$_{*i/j}$ said that [_S John$_i$ would win]].   (Chomsky (25i) p.193)

d. [_S John$_{*i/j}$ said that [_S John$_i$ would win]].   (Chomsky (25ii) p.193)

With no emphatic stress, in (20a)-(20c) the name *John* is understood as being disjoint in reference from *he/his*, and in (20d) the second *John* must be distinct from the first *John*. Note that in (20c) and (20d) the matrix subjects are outside the governing category for the subordinate *John*, but the requirement still holds.   Furthermore, the same condition also covers quantifiers, as shown in (21).

(21)a. [_S He$_{*i/j}$ kissed everyone$_i$].

b. He$_{*i/j}$ said [_S everyone$_i$ had kissed Mary].

(Chomsky 1981 (28) & (29ii) p.194)

Principle C also applies to variables such as Case-marked traces.   For instance, observe the following examples.

(22)a. Who$_i$ t$_i$ said Mary had kissed him$_{i/j}$?

b. Who$_i$ t$_i$ said he$_{i/j}$ had kissed Mary?

c. Who$_i$ did he$_{*i/j}$ say Mary had kissed t$_i$?

d. Who$_i$ did he$_{*i/j}$ say t$_i$ had kissed Mary?

(Chomsky 1981 (26iii), (26iv), (26i) & (26ii) p.193)

In the above sentences, the traces occupy Case-marked positions and thus are variables. In (22a) and (22b) the variables are not c-commanded by the pronouns *he*, and hence, the two may or may not be coindexed.   In (22c) and (22d), however, the pronouns do c-command the traces, and coindexation is impossible, because it would violate Principle C.   Therefore, the basic facts of strong crossover (Postal 1971 and Wasow 1972 & 1979) can be derived from this principle.

Regarding Principle C, there is one problem, however.   Consider the examples below.

(23)a. There is a man in the room.   (Chomsky 1981 (94i) p.218)

b. It is important that we do our best.

Chomsky supposes that in *there*-constructions like (23a), the expletive is coindexed with

the associate. Similarly, in (23b) expletive *it* is assumed to be coindexed with the extraposed clause. Then, since the two coindexed elements are in a c-commanding relation, the above sentences, which are, in fact, grammatical, should violate Principle C.

Chomsky suspects that the coindexations in these cases are of a different nature than is relevant to binding theory. He terms such a style of indexing that does not participate in binding as cosuperscripting. Thus, *John* and *a man* in (23a) and *it* and the *that*-clause in (23b) are cosuperscripted, which does not lead to a Principle C violation.

To sum up, in the GB framework, binding theory refers to the fundamental notion of government to determine the "local" domain, called the governing category. Anaphors must be bound in this domain, while pronouns must be free in the same range. R-expressions must be free regardless of their governing category.

2.3 Reinhart & Reuland's (1993) Approach to Binding

Reinhart & Reuland (1993) recast the theory of binding based on the view that the binding conditions are not about the distributions of anaphors, pronominals and R-expressions but about the interpretation and licensing of reflexivity.[12] In this approach, coindexation is clearly distinguished from coreference, and binding theory is only responsible for the former (see also Reinhart 1983 & 1986 and Grodzinsky & Reinhart 1993 for such a proposal). Furthermore, the three binding principles in GB theory are reduced to two: Condition A and Condition B.

In syntactic research, two types of anaphors are identified: morphologically compound ones (e.g. Dutch *zichzelf* and English *himself*) and morphologically simple ones (e.g. Dutch *zich* and Norwegian *seg*). Reinhart & Reuland refer to the first type as SELF anaphors and to the second as SE (simplex expression) anaphors. They assume that SELF anaphors, differ from SE anaphors in that they function as reflexivizers, the semantics of which are to impose identity with one argument upon another in a predicate.

In addition, the Chain Condition is invoked from chain theory in order to restrict the distribution of coindexed NPs. Reinhart & Reuland's version of the Chain Condition requires the head of an A-chain to be both +R and Case-marked and all the other links to be -R.[13] An A-chain is any sequence of coindexation headed by an A-position in which each link satisfies antecedent government.[14] R is a syntactic property of referential independence, and having the positive value of this property is a necessary condition for an expression to function as an independent argument. It is assumed that R-expressions, lexical pronouns, PRO, pro and A'-trace are +R and that

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SELF anaphors, SE anaphors and NP-trace are -R.

Reinhart & Reuland start the discussion by pointing out that the standard GB Principle B is too strong.   In standard GB theory, Principle A requires that anaphors are bound in their governing category, while Principle B requires that pronouns are free in the same domain (see section 2.2).   This entails that wherever an anaphor is possible, a pronoun is excluded.   This statement is indeed true in many instances, as shown in (24).

(24)a. Max_i criticized $himself_i$/*him_i.
    b. $Lucie's_i$ joke about $herself_i$/*her_i.
       (Reinhart & Reuland 1993 (6a) & (6c) p.661)

However, it is well known that there are some contexts where an anaphor and a pronoun are both permitted, as can be seen in (25).[15]

(25)a. $Lucie_i$ saw a picture of $herself_i$/her_i.
    b. $Lucie_i$ counted five tourists in the room apart from $herself_i$/her_i.
       (Reinhart & Reuland 1993 (8a) & (7b) p.661)

The difference between the above two cases is that in the former, the anaphors and their antecedents are coarguments, whereas in the latter, they are not.   That is, in (24a) the two NPs are arguments of the same predicate *criticized*,[16] and in (24b) *Lucie* and *herself/her* are thematic arguments of the noun *joke*.[17]   On the other hand, in (25a), while *Lucie* is an argument of *saw*, *herself/her* itself is not a θ-argument of this predicate but is embedded in an argument of it.   In (25b) *herself/her* is straightforwardly part of an adjunct and can by no means be treated as an argument of anything.   Thus, the correct generalization is that a pronoun is disallowed only if it is a coargument with its antecedent.[18]

Consequently, Reinhart & Reuland reformulate Condition B as given in (26), which takes the form of a condition on reflexive predicates.

(26) Condition B:
     A reflexive semantic predicate is reflexive-marked.
     (Reinhart & Reuland 1993 (41) p.678)

This principle should be read as a conditional to the effect that if a semantic predicate is reflexive, then it must be reflexive-marked.   A semantic predicate is defined as a head,

such as N, V, P, etc., with all of its θ-arguments at the post-LF semantic level. A predicate is called reflexive if and only if (at least) two of its arguments are coindexed. There are two ways to reflexive-mark a predicate. Some predicates are intrinsically reflexive, namely, their heads are marked as reflexive in the lexicon. For example, verbs like *behave* are inherently reflexive, and verbs like *wash* are listed twice in the lexicon, both as reflexive and as non-reflexive. Other predicates can be turned into reflexive-marked ones by using a SELF anaphor as one of their arguments.

Returning to the above examples, newly formulated Condition B[19] properly differentiates between the cases in (24) and those in (25). In (24a) the two arguments of the verb *criticized* are coindexed. Thus, the predicate formed of this verb is reflexive, which requires reflexive-marking. Since *criticize* is not lexically reflexive, it is not reflexive-marked unless a SELF anaphor is used. Hence, *himself* is grammatical, but *him* is not. Basically the same argument goes with the NP case of (24b). Meanwhile, in (25a) *herself/her* is an argument of the noun *picture*, whereas its antecedent is an argument of the verb *saw*. Therefore, coindexing the two does not yield a reflexive predicate. As a result, reflexive-marking is not required by Condition B, and the pronoun is not excluded. Similarly, in (25b) no reflexive predicate is formed, since *Lucie* and *herself/her*, which bear an identical index, are not coarguments. Therefore, Condition B is vacuously satisfied, or to put it another way, the condition does not apply.

It is worth mentioning that Condition B also rules out a subcase of standard Principle C violations such as the one below.

(27) *Max_i/*he_i criticized Max_i.   (Reinhart & Reuland 1993 (13c) p.663)

In the standard GB approach, (27) is ill-formed because the R-expression in the object position is bound by the subject NP. In the present system, however, the problem is the lack of reflexive-marking, though the predicate is reflexive.[20]

At this point, a remark on two types of PPs is in order. Consider the following examples.

(28)a. *Max_i speaks with him_i.
   b. Max_i put the gun near/under/on him_i.
      (Reinhart & Reuland 1993 (15a) & (16b) p.664)

In (28a) Condition B is at work, even though the coindexed pronoun is embedded in a PP (see also (24b)). However, in (28b), where the preposition is locative, the Condition B

effect appears to be absent.   Note that the PP is selected by the verb in both sentences.

The relevant difference is that a locative PP, unlike a PP as in (28a), projects its own predicate.   Thus, as Marantz (1984) argues, in structures like (28b), the verb simply selects for a location, which means that the whole PP rather than the NP in it carries a θ-role.   That verbs that take a locative PP do not bear a direct thematic relation with the complements of the prepositions can be evidenced by the fact that such verbs permit all locative Ps, as shown in (28b) (Marantz 1984).   By contrast, in (28a) the verb *speak* can select its argument only via one specific preposition *with*,[21] which suggests that there is no independent P predicate, and the complement of the preposition is just an argument of the verb.   When a preposition forms its own predicate, as in (28b), the NP inside the PP is not, itself, an argument of the verb.   Therefore, coindexing a pronoun in this position with an argument of the verb does not yield a reflexive predicate, and Condition B is not violated.

As indicated at the outset of this section, SE anaphors, which happen to be absent in English, lack the reflexivizing function.   As a result, they can only appear where no extrinsic reflexivization is necessary.   Thus, the Dutch SE anaphor *zich* is ungrammatical in reflexive environments like (29a) and (29b) but grammatical in locative contexts like (29c), which are not reflexive even if the NP inside the PP is coindexed with an argument of the predicate, as just discussed.

(29)a. *Max_i haat $zich_i$.
　　　Max_i hates SE_i
　　　'Max hates himself.'
　　b. *Max_i praat   met $zich_i$.
　　　Max_i speaks   with SE_i
　　　'Max speaks with himself.'
　　c. Max_i legt   het boek   achter $zich_i$.
　　　Max_i puts   the book   behind SE_i
　　　'Max puts the book behind himself.'
　　　(Reinhart & Reuland 1993 (17a), (17b) & (17c) p.665)

SE anaphors are also allowed as arguments of predicates whose heads are inherently reflexive, since they do not require extrinsic reflexive-marking.   Observe the examples in (30).

(30)a. Lucie$_i$ gedroeg   zich$_i$ (goed).

   Lucie$_i$ behaved   SE$_i$ (well)

   'Lucie behaved herself (well).'

   b. Max$_i$ wast   zich$_i$.

   Max$_i$ washes   SE$_i$

   'Max washes himself.'

   (Reinhart & Reuland 1993 (72a) p.691 & (19a) p.666)

As far as binding theory is concerned, pronouns are indistinguishable from SE anaphors, because they are both non-reflexivizers.   Hence, it is expected that the former can occur wherever the latter are permitted.   In locative PP environments, a pronoun can be used instead of an SE anaphor, as shown in (31a).   However, in intrinsically reflexive contexts, such a replacement by a pronoun is not possible, as can be seen in (31b).

(31)a. Max$_i$ legt   het boek   achter 'm$_i$[22].

   Max$_i$ puts   the book   behind him$_i$

   'Max$_i$ puts the book behind him$_i$.'

   (Akkermans pc)

   b. *Lucie$_i$ gedroeg   haar$_i$ (goed).

    Lucie$_i$ behaved   her$_i$ (well)

   'Lucie behaved herself (well).'

   (Reinhart & Reuland 1993 (72) p.691)

The same paradigm is obtained in English, as indicated in (32) (see also (28b) for a pronoun inside a locative PP in English).

(32)a. Max$_i$ puts the book behind him$_i$.

   b. *Lucie$_i$ behaved her$_i$ (well).

   (Reinhart & Reuland 1993 (72) p.691)

Here, Condition B has nothing to say about the ungrammaticality of the above two (b) sentences, because its requirement is met; the predicates are reflexive, and they are reflexive-marked by intrinsic reflexivization.   Now this is where the Chain Condition steps in.   In (31b) *Lucie* and *haar* are coindexed, and the latter is in the A-chain domain of the former; namely, there is no barrier[23] between the two. Consequently, in this context, an A-chain is formed.   However, this chain has a pronoun

as its tail, which is +R.   This is a violation of the Chain Condition.   In the same way, the A-chain <Lucie, her> in (32b) is also ill-formed.[24]

If that is the case, then the pronouns in (24a) and (24b), reintroduced below, violate not only Condition B but also the Chain Condition.

(24)a. *Max_i criticized him_i.
   b. *$Lucie's_i$ joke about her_i.

Still, the two conditions are far from redundant.   First, there are many ill-formed sentences that can only be excluded by one condition or the other such as (31b) and (32b). Second, once these two conditions are separated, it is apparent that generally speaking, the Chain Condition effect is stronger than the Condition B effect.   Thus, for example, Dutch speakers usually feel that (31b), which violates only the Chain Condition, is worse than (29a) and (29b), which violate Condition B alone.   The latter are reproduced below for ease of reference.

(29)a. *Max_i haat $zich_i$.
        Max_i hates SE_i
       'Max hates himself.'
   b. *Max_i praat   met $zich_i$.
        Max_i speaks   with SE_i
       'Max speaks with himself.'

Reinhart & Reuland's Condition B (and also their Condition A) does not refer to any configurational relation like c-command or argument hierarchy.   Therefore, it does not render examples like those in (33) ungrammatical.

(33)a. *$Himself_i$ criticized Max_i/him_i.
   b. *$Himself_i$ criticized $himself_i$.
       (Reinhart & Reuland 1993 (115a) & (115b) p.713)

Again, these sentences are ruled out by the Chain Condition.   In (33a) an A-chain is formed between *himself* and *Max/him*, but the unique +R and Case-marked link of this chain is at the tail rather than at the head, which is a violation of the Chain Condition. In (33b) the chain <himself, himself> is illicit, because it is not headed by a +R and Case-marked element, as required by the Chain Condition.

When Condition B was reformulated above, it was explicitly designed to target predicates at the semantic level.   However, as far as the previous examples are concerned, it does not really matter at which level the condition applies.   Now let us see why Reinhart & Reuland bother to have such a specification.   Consider the following examples.

(34)a. *The queen$_i$ invited both Max and her$_i$ to our party.
    b. The queen$_i$ invited both Max and herself$_i$ to our party.
      (Reinhart & Reuland 1993 (30b) & (30a) p.675)

Sentence (34a), as compared with (34b), seems to be a typical Condition B violation. However, here, the constraint on reflexive predicates is not violated at the surface level nor at LF.   The object of the verb is the entire *both Max and her*, and hence, coindexing *her* alone with *the queen* should not yield a reflexive predicate.   Nevertheless, the pronoun is disallowed in this context.   To simplify the argument somewhat, Reinhart & Reuland believe that the relevant sentence is translated into a representation as depicted in (35) at the abstract semantic level.

(35) The queen$_i$ invited Max to our party, and the queen$_i$ invited her$_i$ to our party.

Here, there is indeed a reflexive predicate as one of the conjuncts: *the queen$_i$ invited her$_i$ to our party*, which is not reflexive-marked.   Thus, Condition B is violated as expected. Therefore, it makes more sense to assume that Condition B operates on predicates at the semantic level.

Regarding this issue, the contrast in (36) is quite intriguing.

(36)a. *We voted for me.
    b. We elected me.
      (Reinhart & Reuland 1993 (32a) p.676 & (35a) p.677)

The distinguishing factor in the above sentences lies in the semantics that each verb denotes.   While in (36a) a distributive reading is strongly suggested, in (36b) a collective reading is forced.   Thus, at the semantic level, the former is translated as in (37).

(37) a voted for me, b voted for me, ..., I$_i$ voted for me$_i$.

(where a and b are some fixed individuals)

This representation does contain a reflexive predicate, namely I_i *voted for me*$_i$, which is not properly reflexive-marked. Hence, the example is ill-formed. By contrast, (36b) does not have a comparable representation due to the collective nature of the act of electing; its semantic representation remains, 'we elected me'. Therefore, for many speakers, (36b) is better than (36a).

Even more interesting is the following three-way contrast. Consider the examples in (38), bearing in mind that *strike* is a raising verb, while *promise* is a subject control verb.

(38)a. *Lucie$_i$ strikes her$_i$ [t$_i$ as clever].
    b. We$_i$ strike me$_j$ [t$_i$ as less happy than we used to be].
    c. *We$_i$ promised me$_j$ [PRO$_i$ to be more happy than we used to be].
    (Reinhart & Reuland 1993 (92a), (92c) & (92d) p.704)

In (38a), although *Lucie* and *her* are coindexed, they are not semantic coarguments, because the former is not a thematic argument of *strikes*. As a result, Condition B does not apply. Thus, this sentence is filtered out by the Chain Condition, which applies to syntactic representation. Indeed, the coindexation here makes an illicit A-chain <Lucie, her, t> with +R *her* as an intermediate link. That it is the Chain Condition rather than Condition B which is at stake in (38a) is evidenced by the grammaticality of (38b). In the latter, *we* and *me* have different indices and hence do not form an A-chain. Therefore, the Chain Condition is irrelevant. Furthermore, Condition B is vacuously satisfied. No reflexive predicate is formed at the semantic level, since *me* is an argument of the raising verb, whereas *we* is a semantic argument of the embedded predicate. This contrasts with (38c), where *we* and *me* are indeed semantic arguments of the matrix verb. This example yields a semantic reflexive predicate *I promised me ...*, which is not reflexive-marked, and thus is ruled out by Condition B.

Turning to Condition A, it too is rewritten as a condition on reflexive-marking, as given in (39).

(39) Condition A:
    A reflexive-marked syntactic predicate is reflexive.[25]
    (Reinhart & Reuland 1993 (41) p.678)

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This condition states that if a syntactic predicate is reflexive-marked, then it must be reflexive. A syntactic predicate is comprised of a certain head and all of its arguments analogously to a semantic predicate. However, unlike the latter, NPs Case-marked by the relevant head are also counted as arguments of the former type of predicate. Thus, in ECM constructions, for example, the embedded subject is not only an argument of the subordinate predicate but also an argument of the matrix verb, as far as the syntactic predicate is concerned.[26] Moreover, in order to be qualified as a syntactic predicate, the head must project a subject[27]. Therefore, it is possible that some head forms a semantic predicate but not a syntactic predicate due to lack of a subject.

To have a rough idea of how Condition A works, compare sentence (40) with the examples in (41).

(40) Lucie$_i$ praised herself$_i$.   (Reinhart & Reuland 1993 (28a) p.674)

(41)a. *Five tourists talked to myself in the room.

    b. *A famous physicist has just looked for yourself.

    c. *Max$_i$ boasted that the queen invited himself$_i$ for a drink.
       (Reinhart & Reuland 1993 (22b) p.669, (23b) p.669 & (26b) p.670)

In (40) one of the arguments of *praised* is *herself*, and thus, this predicate is reflexive-marked. Consequently, it is required by Condition A to be reflexive. The condition is satisfied because the anaphor is coindexed with the other argument. In (41), on the other hand, while the relevant predicates are also reflexive-marked, they are not reflexive, since no coindexation is found among their arguments. Hence, Condition A filters out these cases.

Consider next the following examples.

(42)a. A picture of myself would be nice on that wall.[28]
      (Reinhart & Reuland 1993 (45a) p.682)

    b. Physicists like yourself are a godsend.[29]
      (Reinhart & Reuland 1993 (23a) p.669)

    c. Clara found time to check that apart from herself there was a man from the BBC.[30]
      (Reinhart & Reuland 1993 (25c) p.670)

    d. Max boasted that the queen invited Lucie and himself for a drink.
      (Reinhart & Reuland 1993 (26a) p.670)

(43) ?/*Your picture of myself would be nice on that wall.

In (42a) and (42b) the anaphors do not have a linguistic antecedent at all. In (42c) and (42d) the antecedents of the anaphors are so-called "long-distance". Nevertheless, these sentences are well-formed. This is because in the above cases, the SELF anaphors do not make any syntactic predicate reflexive-marked. In (42a), though *myself* is part of the subject, it itself cannot be viewed as an argument of *(would be) nice*. Moreover, although this anaphor is indeed an argument of *picture*, it forms only a semantic predicate but not a syntactic predicate, because it does not have a subject. Thus, no syntactic predicate is reflexive-marked. Note that if *picture* projects a subject, whereby a syntactic predicate is formed, then the example is less acceptable, as can be seen in (43). In (42b) the anaphor is also embedded in the subject NP, and the predicate formed of the preposition *like*, of which this anaphor is an argument, cannot be syntactic due to lack of a subject. Hence, again, there is no reflexive-marked syntactic predicate. In (42c), since the anaphor is part of an adjunct, it cannot mark the embedded predicate (nor the matrix one) as reflexive. The complex preposition *apart from*, which does not have a subject, of course, does not form a syntactic predicate. Finally, in (42d) it is the whole coordinated phrase *Lucie and himself* that is an argument of *invited*, which means that the anaphor does not reflexive-mark the predicate. Therefore, in these instances, no reflexive-marked syntactic predicate exists, and Condition A is vacuously satisfied.

The anaphors in (42) may appear somewhat marked, or to put it another way, they may have to be motivated by some discourse considerations. The idea that there exist discourse-oriented anaphors, called logophors, was initially developed in research on "long-distance" anaphors (e.g. Maling 1982 & 1986, Hellan 1988 & 1991, Thrainsson 1991). This analysis is extended to certain instances of SELF anaphors in Reinhart & Reuland (1989 & 1991 and Reuland 1990). Following this tradition, Reinhart & Reuland refer to the use of SELF anaphors that does not lead to reflexive-marking as logophoric. All SELF anaphors that do not reflexive-mark a predicate are logophors even if they have a "local" antecedent. Thus, a *picture*-noun anaphor as in (25a) and an anaphor in an adjunct as in (25b), repeated below, are both logophors.

(25)a. Lucie saw a picture of herself.
     b. Lucie counted five tourists in the room apart from herself.

The logophoric anaphors in (42) have to do with the notion of "point of view" in the sense of Clements (1975), which Reinhart & Reuland call perspective logophors. In

addition, there is yet another type of discourse-oriented anaphor, which they label as focus logophors (see also Kuno 1987 & Zribi-Hertz 1989).   Observe the examples below.

> (44)a. This letter was addressed only to myself.
>   b. Bismarck's impulsiveness has, as so often, rebounded against himself.[31]
>   (Reinhart & Reuland 1993 (27a) & (27c) p.672)

In (44) the SELF anaphors occupy argument positions of syntactic predicates, but these predicates do not seem to be reflexive.   Evidently, the sentences appear to violate Condition A.

The grammaticality of the above examples can be explained in the following manner.   The anaphors in (44) are focused and thus can be assumed to have undergone movement to the sentence-initial position at LF, as depicted in (45).

> (45)a. [myself$_i$ [this letter was addressed only to t$_i$]].
>   b. [himself$_i$ [Bismarck's$_i$ impulsiveness has, as so often, rebounded against
>   t$_i$]].

Let us further suppose that unlike Condition B, which operates on semantic representation, Condition A applies at LF.   Then at the level where Condition A is relevant, the SELF anaphors in (44) are no longer in argument positions of predicates. Therefore, the predicates at issue are not reflexive-marked, and Condition A does not require them to be reflexive.   It should be noted, however, that sentences like these are highly marked, since the context must clearly signal the focus or contrastive reading of the anaphor.

As for logophors in general, there is residual work to do.   In their logophoric use, anaphors syntactically stand on their own, as evidenced by the fact that they do not necessarily require an antecedent.   Thus, it is expected that even if they have an antecedent, an A-chain is not formed between them.   Then it follows that since anaphors are -R, logophors are always headed by a -R element, which is a violation of the Chain Condition.   Therefore, in order to exempt the logophoric use of anaphors from the Chain Condition, Reinhart & Reuland assume that the condition does not apply to singleton chains, namely chains that consist of only one link.

Finally, it should be recalled that Reinhart & Reuland's system makes an explicit distinction between coindexation and coreference.   It is only an element involving the

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former that is interpreted as a bound variable.   Technically, coreference can be obtained only where coindexation is absent.   That is, when two NPs bear an identical index, it is coindexation, and it is not possible that they are interpreted as coreferential.   SELF anaphors that reflexive-mark a syntactic predicate are necessarily required to be coindexed with an antecedent by Condition A.   Thus, (46), for example, is generally judged to have just one reading.

(46) Only Lucie praised herself.
    interpretation: 'People other than Lucie did not praise themselves.'
    interpretation: *'People other than Lucie$_i$ did not praise her$_i$.'
(Reinhart & Reuland 1993 (28d) p.674)

The sentence clearly entails that people other than Lucie did not praise themselves, where *herself* functions as a variable.   But it does not entail or at least is very difficult to construe as, 'People other than Lucie did not praise her', where the reflexive functions as a constant.   As for logophors, on the other hand, nothing forces coindexation -- it is totally optional.   As a result, their relation with antecedents may be either that of coindexation (if those logophors are c-commanded by their antecedents) or that of coreference.   Correspondingly, they may be interpreted as variables or constants. Therefore, (47), for instance, is easily construed as ambiguous, where the entailment is that people other than Lucie do not buy pictures of themselves or pictures of her.

(47) Only Lucie buys pictures of herself.
    interpretation: 'People other than Lucie do not buy pictures of themselves.'
    interpretation: 'People other than Lucie$_i$ do not buy pictures of her$_i$.'
(Reinhart & Reuland 1993 (i) fn.18)

To summarize, in Reinhart & Reuland (1993) the tasks of binding in the standard GB approach are divided between two linguistic modules.   Binding theory only takes care of the reflexivizing function.   The two conditions ensure that reflexivity and reflexive-marking are appropriately matched on predicates.   All other aspects of anaphors, such as the hierarchical effect, fall under chain theory.   The Chain Condition checks whether the R-requirement on A-chains is properly observed.

2.4 Fox's (1993) Modification to Reinhart & Reuland's (1993) Theory

Fox (1993) questions Reinhart & Reuland's (1993) analysis of anaphors on conceptual grounds. As discussed in the preceding section, Reinhart & Reuland's Condition A applies at LF, whereas their Condition B applies at some abstract semantic level. Nevertheless, both of them are assumed to be part of the same module of grammar, namely binding. On the other hand, while Condition A and the Chain Condition both operate on syntactic representation, it is supposed that they belong to different modules. This is, Fox argues, an unnatural way of cutting the pie. He suggests that Condition A should be reduced to the Chain Condition, whereby not only can the grammar be simplified, but also the labor can be divided between linguistic modules in a more natural manner.

First of all, let us begin by observing why (48) is ill-formed in Reinhart & Reuland's framework.

(48) *You$_i$ showed myself$_j$ to yourself$_i$.   (Fox 1993 (10a) p.5)

In the above sentence, two of the three arguments of *showed*, namely *you* and *yourself*, are coindexed, and thus, the predicate is reflexive. Furthermore, this predicate is reflexive-marked by *myself* as well as by *yourself*. At first glance, both Condition A and Condition B appear to be satisfied.

The problem lies in the fact that *myself* does not partake in the reflexive relation. In their rigorous formulations, Reinhart & Reuland's binding conditions are relativized with respect to an index (see endnotes 19 & 25). Condition A requires an i-reflexive-marked syntactic predicate to be i-reflexive, and Condition B requires an i-reflexive semantic predicate to be i-reflexive-marked. In (48) the predicate is j-reflexive-marked by *myself*, but it is not j-reflexive. Therefore, it violates (the accurate version of) Condition A.

Consider next the following pair of examples.

(49)a. *Himself sneezed.
   b. *Himself washed.
      (Fox 1993 (11a) & (11b) p.6)

In (49a) the predicate *sneezed* is reflexive-marked but not reflexive, and hence, the sentence is appropriately ruled out by Condition A. In (49b), by contrast, *washed* is reflexive by intrinsic reflexivization, and thus, Condition A is satisfied.[32]   The Chain

Condition does not apply, because the sentence contains only a single-member chain <himself>, which is exempt from the condition.   Nonetheless, the example is ungrammatical.[33]

As a clue to understanding what goes on in (49b), let us see what Reinhart & Reuland have to say about the ill-formedness of the sentence below.

(50) *Himself$_i$ washed himself$_i$.   (Fox 1993 (11c) p.6)

Example (50) is excluded by the Chain Condition, since it contains an illicit chain <himself, himself>, which is headed by a -R link.   Fox's intuition is that (49b) is ungrammatical in the same way.   Under this view, (48) and (49a) are also ill-formed for the same reason.   Moreover, in order to rule out sentences like (48), the two binding conditions need not be complicated by being relativized to an index.

However, in order to make such an analysis possible, it is necessary to depart from Reinhart & Reuland's (1993) definition of A-chain and acknowledge the existence of singleton chains.   As mentioned in section 2.3, the reason why they disallow chains that consist of only one member has to do with the fact that logophors do not form A-chains.   Since anaphors are -R, if we recognize singleton chains, then all logophors would be single-member chains whose heads would be -R, which violate the Chain Condition.   Fox solves this problem by assuming that A-chains are restricted to argument positions of syntactic predicates.   By definition, logophors are anaphoric expressions that do not reflexive-mark a predicate.   Hence, they can only occur in what are not counted as argument positions of syntactic predicates (at LF).   Consequently, with the proposed assumption, logophors never constitute A-chains and thus never violate the Chain Condition.

Still, one might point out that if the modified notion of A-chain is adopted, then the system would become superfluous.   That is, a sentence like (49a) would be doubly excluded by Condition A and by the Chain Condition.   However, this redundancy can easily be eliminated.   Namely, once singleton chains are admitted, Condition A is no longer needed.   Whenever a SELF anaphor reflexive-marks a predicate, the Chain Condition requires it to have a "local" antecedent, and the predicate is inevitably reflexive.

Now let us see how the Chain Condition induces the Condition A effect with some concrete examples.

(51)a. John hates himself.   <John, himself>   (Fox 1993 (16a) p.8)

b. *John hates myself.   <John>, *<myself>   (Fox 1993 (2a) p.2)

c. *John thinks that Mary hates himself.   <John>, <Mary>, *<himself>

(Uchiumi 2005a (3c) p.2)

In (51a) there is just one A-chain: <John, himself>.   The head of this chain is +R because it is the R-expression *John*, and the other link is -R because it is the anaphor *himself*.   Thus, the Chain Condition is appropriately observed.   Meanwhile, (51b) contains two single-member chains.   While <John> abides by the Chain Condition, <myself> does not, since it is -R despite being a head.   Example (51c) is a case in which the "locality" requirement is violated.   An A-chain cannot be formed between *John* and *himself* because they are too far apart.   Consequently, the sentence has three chains: <John>, <Mary> and <himself>.   Although the first two chains are licit, the last one is not, since it is headed by a -R element.

Therefore, Condition A is successfully reduced to the Chain Condition.   As a result, the grammar has become much neater.   On the one hand, there is one syntactic condition, namely the Chain Condition, which operates on syntactic representation.   On the other hand, there is one semantic condition, namely Condition B, which applies at the semantic level.

2.5 Further Modifications to Reinhart & Reuland (1993)/Fox (1993)'s Theory

In section 2.3, we saw an alternative to the standard GB binding theory proposed by Reinhart & Reuland (1993).   In this approach, the distributions of different types of DPs are governed not only by the binding conditions but also by the Chain Condition.   Furthermore, in section 2.4, we took up Fox's (1993) suggestion that Reinhart & Reuland's Condition A should be reduced to the Chain Condition.   In the present thesis I will adopt Reinhart & Reuland's approach to binding with Fox's modification.   Condition B will be accepted as it appears in Reinhart & Reuland (1993).[34]   As for the Chain Condition, however, additional modifications will be made, which is the topic of this section.   The discussion of the logophoric use of anaphors will be deferred until section 2.6.

2.5.1 A Syntactic Predicate Is the Domain for A-Chain Formation

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2.5.1.1 The Local Antecedent Requirement on Anaphors and
the A-Chain Projection Domain (ACPD)

One of the core properties of anaphors, NP-trace included, is that they, apart from their logophoric use, need to have an antecedent in their so-called "local" domain.[35] Let us start this subsection by giving some consideration to this "locality" condition. Since the system that I am assuming does not have Condition A, the "locality" requirement on anaphors must come from the Chain Condition. To quickly review, the Chain Condition requires the head of an A-chain to be both +R and Case-marked and all the other links to be -R, where R-expressions, pronouns, including pro, and A'-trace are +R, and lexical anaphors and NP-trace are -R.[36]

In such a framework, it can be said that the "local" domain of anaphors is the domain in which these anaphors can form licit A-chains with antecedents. Let us call such a domain the A-Chain Projection Domain (ACPD). Following Fox (1993), I restrict the formation of A-chains to syntactic predicates. Therefore, it is probably most natural to define ACPD in terms of this linguistic object. This line of approach is effectively taken in Uchiumi (2003). In that paper I try redefining A-chain domain over syntactic predicates, which can be converted into the definition of ACPD as shown in (52).[37]

(52) A-Chain Projection Domain (ACPD) (to be modified):
   Let P_1 and P_2 be argument positions of syntactic predicates, then
   P_2 is in the A-Chain Projection Domain of P_1, iff P_2 c-commands P_1, and
   a. P_1 and P_2 are arguments of the same syntactic predicate, or
   b. P_1 is at the A-edge (i.e. in the highest A-position) of a syntactic predicate
      that is immediately contained by the syntactic predicate of P_2.

At first sight, the above definition may seem a bit complicated, but the concept behind it is, in fact, very simple. It is generally agreed that the A-chain relation, which is the converse of the ACPD relation, is a subset of the c-command relation. When an A-chain is formed, one A-position is fully visible to another if they belong to the same syntactic predicate, but only the highest A-position can be seen from the next syntactic predicate up.[38] Thus, in order for P_2 to be in the ACPD of P_1, they must be in either of the following two configurations

(53)a. [$_{SP}$ ... P_2 ... P_1 ...]

b. [$_{SP}$ ... P$_2$ ... [$_{SP}$ ... (*P$_3$) ... P$_1$ ...]]
   where SP stands for syntactic predicate.

Namely, as in (53a), P$_2$ is an argument of the same syntactic predicate as P$_1$.   Or as in (53b), P$_2$ is an argument of the syntactic predicate immediately superordinate to that of P$_1$, where there is no A-position P$_3$, which is an argument of the latter predicate and c-commands P$_1$.

In this thesis I adopt (52) as the formal definition of ACPD, though I will make a minor amendment to it in section 2.5.1.2.   As a corollary, it is my definition of locality for anaphors.   This is my first modification to Reinhart & Reuland (1993)/Fox (1993)'s Chain Condition.

Now let us see with some examples how the locality requirement on anaphors is derived from the Chain Condition together with the above definition of ACPD. Consider first the following sentences.

(54)a. Mary expects [$_{IP}$ John and Bill to blame each other].
    b. *John and Bill expect [$_{IP}$ Mary to blame each other].

Example (54a) contains *each other* in the embedded object position.   This element, being -R, is not allowed by the Chain Condition to head an A-chain and hence is required to take an antecedent link.   Since it is not in the highest A-position of the subordinate IP, its ACPD is restricted to this syntactic predicate.   The anaphor has *John and Bill* in this domain as its antecedent.   Thus, the sentence is grammatical.   In (54b), on the other hand, though *each other* is in the same position as in the previous example, it is *Mary* that is within its ACPD.   An A-chain cannot be formed between them because a reciprocal needs a plural antecedent.   Therefore, the sentence is ruled out.

Meanwhile, in the following examples, anaphors appear in the embedded subject position.

(55)a. [$_{IP}$ John believes [$_{IP}$ himself to be wrong]].
    b. *John expects that [$_{IP}$ Sue will believe [$_{IP}$ himself to be wrong]].
    c. *John expects [$_{IP}$ Sue to believe [$_{IP}$ himself to be wrong]].

In the above sentences, since *himself* is at the A-edge of the lowest IP, its ACPD is the next syntactic predicate up.   In (55a) the reflexive has *John* in this domain as its antecedent, and thus, the example is well-formed.   In (55b) and (55c), by contrast, the

domain contains only *Sue* as a potential antecedent, the gender of which does not match that of *himself.*   Therefore, these sentences are excluded.

2.5.1.2 The Selection Condition of the ACPD

As hinted at in the preceding subsubsection, the definition of ACPD in (52) needs some modification.   In order to set up the problem, consider first the following example.

(56) That many kids live on the street without a home degrades our society.

As can be seen in (56), the verb *degrade* can take a clausal element as its subject.   I believe that the underlying structure of the above sentence is as depicted in (57).   (For ease of reference, the inside of the embedded clause is simplified.   Also, starting here, I will adopt the VP-internal subject hypothesis.)

(57) [$_{IP}$ e [$_{VP}$ [$_{CP}$ that many kids live ...] degrades our society]]

Namely, the *that*-clause is in the Spec of VP, which raises perhaps to the Spec of IP at the surface level.[39]

Let us suppose next that the construction is modified so that the embedded clause is replaced by its infinitival counterpart.   In addition, suppose further that the complementizer *for* is absent.   The resulting underlying structure is provided below.

(58) [$_{IP}$ e [$_{VP}$ [$_{IP}$ many kids to live on the street without a home] degrade our
          society]]

In (58) *many kids* is required to have some Case by the Case Filter (Chomsky 1981). Since *for* is missing, if it remains in the Spec of the embedded IP, then it would end up having no Case.   The only available Case position is the Spec of the matrix IP.   Yet the movement to this position violates my version of the Chain Condition.   Observe the following structure.

(59) *[$_{IP}$ many kids$_i$ [$_{VP}$ [$_{IP}$ t$_i$ to live on the street without a home] degrade our

society]].

According to the definition in (52), when an element is at the A-edge of a syntactic predicate, its ACPD is the next syntactic predicate up.   Thus, the ACPD of the trace in (59) is the matrix VP, which does not contain its antecedent *many kids*.   Therefore, the obtained sentence in (60) is ruled out.[40]

(60)a. *Many kids to live on the street without a home degrade our society.

However, there is an alternative derivation for underlying structure (58).   That is, the infinitival clause is first extraposed to adjoin to the VP, as shown in (61a), and then *many kids* subsequently raises to the matrix subject position, as depicted in (61b).

(61)a. [$_{IP}$ e [$_{VP}$ [$_{VP}$ t_i degrade our society] [$_{IP}$ many kids to live ...]$_i$]]
    b. [$_{IP}$ many kids$_j$ [$_{VP}$ [$_{VP}$ t_i degrade our society] [$_{IP}$ t_j to live ...]$_i$]]

In (61b), assuming that a phrase Chomsky-adjoined to a projection is not dominated by that projection (May 1985 and Chomsky 1986a), the ACPD of the embedded subject trace, namely the syntactic predicate immediately superordinate to that of this trace, is the matrix IP.   Since the antecedent *many kids* is within this domain, the example is predicted to be grammatical.   Nevertheless, it is ill-formed under the relevant reading, as indicated in (62).   (The sentence is syntactically well-formed in a funny interpretation where *many kids* is the thematic subject of *degrade* with the infinitive being a rationale clause.)

(62) #Many kids degrade our society to live on the street without a home.

Obviously, it seems that extraposition cannot save the derivation.
    According to my version of the Chain Condition, when a -R element is in the highest A-position of a syntactic predicate, it should be able to form an A-chain into the next syntactic predicate up.   However, this is not the case, when the lower predicate is in an adjoined position.   There are a number of possible ways to reflect this fact in the present system.   I suspect that the relevant difference between adjuncts, including adjoined elements, on the one hand and complements on the other, from inside which a

licit A-chain can be formed, is that unlike the former, the latter are selected by the head of the higher syntactic predicate.   Thus, I will modify the definition of ACPD so that it may include this selection condition.[41]   The revised final version of the definition is given in (63).

(63) A-Chain Projection Domain (ACPD) (final version):
Let P_1 and P_2 be argument positions of syntactic predicates, then
P_2 is in the A-Chain Projection Domain of P_1, iff P_2 c-commands P_1, and
a. P_1 and P_2 are arguments of the same syntactic predicate, or
b. P_1 is at the A-edge (i.e. in the highest A-position) of a syntactic predicate that is immediately contained by the syntactic predicate of P_2, and the former predicate is selected by the head of the latter.

Returning to (61b), the trace in question is at the A-edge of the embedded IP, and its antecedent is in an argument position of the matrix IP, which immediately contains the former predicate.   However, the embedded IP is not selected by the head of the matrix IP, because it is adjoined to the matrix VP by extraposition.   Thus, the antecedent is not in the ACPD of the trace, and sentence (62) with the relevant reading is excluded by the Chain Condition.

2.5.1.3 Small Clause Constructions vs. Double Complement Constructions

One indication that the modification to the Chain Condition suggested in the preceding subsubsections is a real improvement lies in the fact that it provides a simple account of the three-way contrast discussed in Fox (1993).   Consider the examples in (64).

(64)a. John heard himself criticize Mary.
    b. *John heard Mary criticize himself.
    c. John explained Mary to himself.
      (Fox 1993 (20a), (20b) & (21) p.9)

Reinhart & Reuland (1993) argue that in small clause constructions, the embedded subject is a syntactic argument of the matrix predicate because the former is assumed to be assigned Case by the latter.   Sentence (64a) straightforwardly abides by their

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Condition A in (39) in this respect, repeated below, since the two arguments of the matrix verb, *John* and *himself,* are coindexed.

> (39) Condition A:
>   A reflexive-marked syntactic predicate is reflexive.

However, the subordinate subject is also a syntactic argument of the lower predicate, since after all, the former is the subject of the latter.   In (64a) then the embedded verb is reflexive-marked but not reflexive, which seems to violate Condition A.   Reinhart & Reuland's explanation is as follows.   The embedded verb in small clause constructions can optionally adjoin to the matrix verb at LF to form a new complex predicate. Consequently, their LF representation of (64a) would be as shown in (65).

> (65) John$_i$ criticize$_j$-heard [himself$_i$ t$_j$ Mary]

Therefore, *himself* is no longer an argument of the lower verb but of the complex predicate *criticize-heard*, which is appropriately reflexive.   (Recall that Reinhart & Reuland's Condition A applies at LF.)
    Indeed, for (64a), no further stipulation is needed.   But the problem with this analysis is that, as Fox (1993) points out, it is not easy to rule out sentence (64b), the LF representation of which is given in (66).

> (66) John$_i$ criticize$_j$-heard [Mary t$_j$ himself$_i$]

If the newly formed predicate takes three arguments, including the subordinate object, then it is reflexive-marked and reflexive.   Thus, the example should be grammatical. Suppose, on the other hand, that the embedded object is not an argument of the complex predicate.   Then (64b) is predicted to be well-formed so long as the reflexive is properly licensed as a logophor.   Replacing *himself* by *myself* would ensure that the licensing condition is met, because, as will be discussed in section 2.6.1, a first person logophor is relatively easily licensed so that it even may not require a linguistic antecedent. However, as shown in (67a), the sentence is ill-formed even with such a replacement. Compare this example with (67b) where *myself* is clearly not an argument of a syntactic predicate.

> (67)a. *John heard Mary criticize myself.   (Fox 1993 (i) fn.8)

b. There were five tourists in the room apart from myself.

  (Reinhart & Reuland 1993 (22a) p.669)

Therefore, Reinhart & Reuland (1993: fn.49) exclude sentences like (64b) by maintaining that the raised verb itself, despite the lack of a subject, remains a syntactic predicate thanks to its eventhood[42], which is reflexive-marked but not reflexive.

  Meanwhile, as mentioned in section 2.4, Fox (1993) proposes that Reinhart & Reuland's Condition A should be reduced to the Chain Condition. In his approach, (64b) is ungrammatical, since by Relativized Minimality (Rizzi 1990a), *Mary* blocks the formation of a licit A-chain between *John* and *himself*. Furthermore, in order to rule in (64c), he invokes the notion of equidistance (Chomsky 1993). Observe the structure in (68).

(68) IP
- DP
  - $John_i$
- I'
  - I
  - VP
    - DP
      - t_i
    - V'
      - V
        - $explained_j$
      - VP
        - DP
          - Mary
        - V'
          - V
            - t_j
          - PP
            - to $himself_i$
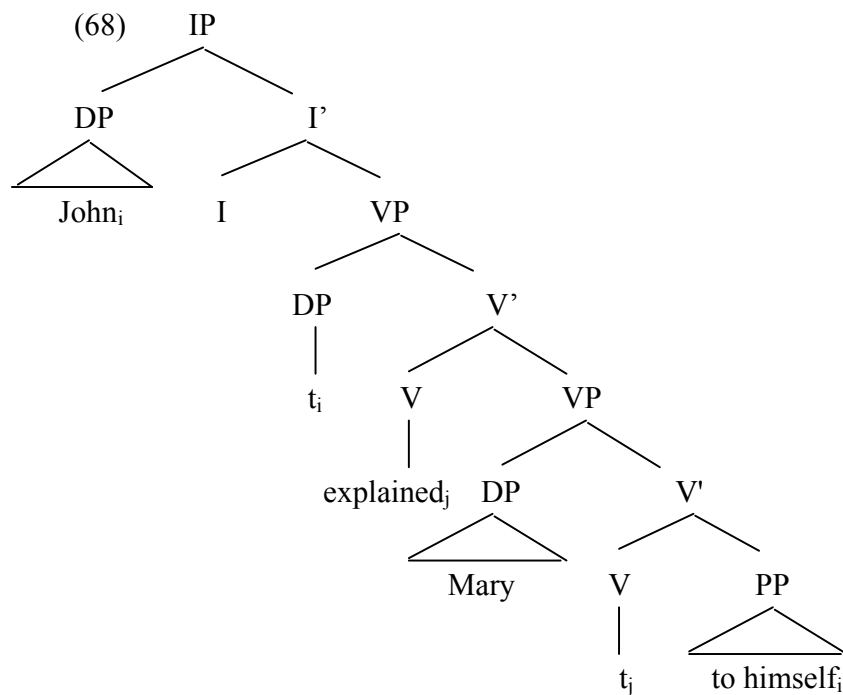
Fox assumes, following Larson (1988), a shell structure for double complement constructions. He argues that verb raising in the Larsonian shell makes *John* and *Mary* equidistant from *himself*. In other words, it extends the domain for binding and hence cancels the Relativized Minimality effect.

  The present system is not only as descriptively adequate as the two alternatives but also much simpler. In (64a) *himself* is the embedded subject, and its antecedent is the matrix subject. The latter is in the ACPD of the former according to (63),[43] and thus,

the example is well-formed.   In (64b), by contrast, the anaphor is the subordinate object, whose ACPD is its own clause.   The sentence is excluded, since the antecedent is not in this domain.   On the other hand, (64c) is grammatical, because it consists of a single syntactic predicate, which contains both the anaphor and its antecedent.

2.5.2 CP Is Not a Barrier for A-Chain Formation

As the data is expanded, it immediately becomes evident that my version of the Chain Condition together with the ACPD in (63) is not powerful enough to exclude some ungrammatical sentences that the standard GB binding theory does.   The relevant examples are what Chomsky (1980) treats as violations of the Nominative Island Condition (NIC) as in (69).

(69)a. *John$_i$ seems [$_{CP}$ that t$_i$ is intelligent].   (Uchiumi 2006 (2c) p.1)
　　b. *You guys expect [$_{CP}$ that yourselves will win the game].
　　c. *John and Bill expect [$_{CP}$ that themselves will be wrong].
　　　(Uchiumi 2006 (2a) p.1)

In the above sentences, the governing category for the anaphors is the subordinate clause, because it is the minimal S or NP containing the anaphors themselves and the embedded AGR, which is their governor and accessible SUBJECT.   Their antecedents are not within this domain, and thus, these examples are excluded by Principle A.

Meanwhile, Chomsky (1986a) and Reinhart & Reuland (1993) argue that CP constitutes a barrier for A-chain formation.   Indeed, if it is postulated that CP is a barrier, then the Chain Condition filters out the sentences in (69).   However, this is rather against the spirit of my proposal that the domain in which an A-chain can be formed is solely determined in terms of syntactic predicates.   Ideally, those examples should be rendered ungrammatical on other grounds.   In fact, there are a number of benefits to assuming that A-chain formation is, in principle, possible across a CP boundary.   In what follows, I will discuss these advantages and then come back to the ill-formedness of the NIC instances.

2.5.2.1 Nominative Anaphors in Other Languages

As is well known, there are some languages with anaphors that bear nominative Case, such as Chinese, Japanese and Korean. For example, the Japanese reflexives *zibun-zisin* 'self-self' and *kare-zisin* 'him-self' and the reciprocal *otagai*[44] 'each other' are true anaphors that require a local antecedent (cf. *zibun* 'self', which can take a long-distance antecedent).   Examples are provided below.

(70)a. Tarou$_i$-wa   zibun-zisin$_i$-/kare-zisin$_i$-o kenasi-ta[45].
       Tarou$_i$-Top   self-self$_i$/him-self$_i$-Acc   run.down-Perf
       'Tarou ran himself down.'
   b. Keiko-to   Yosie-wa   otagai-o   karakat-ta.
      Keiko-and   Yosie-Top   each.other-Acc   make.fun.of-Perf
      'Keiko and Yosie made fun of each other.'
(71)a. *Tarou$_i$-wa   [Hanako-ga   zibun-zisin$_i$-/kare-zisin$_i$-o
        Tarou$_i$-Top   [Hanako-Nom   self-self$_i$/him-self$_i$-Acc
       kenasi-te-i-ru]-to   omot-ta.
       run.down-Prt-Prog-Nonperf]-Comp   think-Perf
       'Tarou$_i$ thought that Hanako was running him$_i$ down.'
   b. *Keiko-to   Yosie-wa   [kare-ga   otagai-o
      Keiko-and   Yosie-Top   [him-Nom   each.other-Acc
      karakat-te-i-ru]-to   omot-ta.
      make.fun.of-Prt-Prog-Nonperf]-Comp   think-Perf
      'Keiko and Yosie each thought that he was making fun of the other.'

In the above sentences, the anaphors at issue are in the object position. As shown in (70), when they have an antecedent in their own clause, which is their ACPD, they are well-formed.   However, if the antecedents are not within this domain, then such anaphors are ruled out, as can be seen in (71).

These local anaphors, as demonstrated in (72), can bear nominative Case, in which case their antecedents are beyond the CP boundary.

(72)a. Itirou$_i$-wa   [$_{CP}$ zibun-zisin$_i$/kare-zisin$_i$-ga
       Itirou$_i$-Top   [$_{CP}$ self-self$_i$/him-self$_i$-Nom
       tukare-te-i-ru-to]   omot-ta.
       become.tired-Prt-Prog-Nonperf-Comp]   think-Perf
       'Itirou$_i$ thought that he$_i$ was tired.'

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b. Karera-wa [$_{CP}$ otagai-ga   sore-o   nusun-da-to]

   they-Top   [$_{CP}$ each.other-Nom   it-Acc   steal-Perf-Comp]

   niran-de-i-ta.

   suspect-Prt-Prog-Perf

   'Each of them was suspecting that the other had stolen it.'

In the present framework, the locality condition on the above anaphors is satisfied.   That is, since they are at the A-edge of the lower IP, their ACPD is the higher IP, which properly contains their antecedents.[46]   As expected, if the antecedents are outside this domain, then such anaphors are ungrammatical, as indicated in (73).[47]

(73)a. *Itirou$_i$-wa   [kantoku-ga   [zibun-zisin$_i$/kare-zisin$_i$-ga

     Itirou$_i$-Top   [manager-Nom   [self-self$_i$/him-self$_i$-Nom

     tukare-te-i-ru]-to   omot-te-i-ru]-to

     become.tired-Prt-Prog-Nonperf]-Comp   think-Prt-Prog-Nonperf]-Comp

     kanzi-ta.

     feel-Perf

     'Itirou$_i$ felt that the manager thought that he$_i$ was tired.'

   b. *Karera-wa   [keisatu-ga   [otagai-ga   sore-o   nusun-da]-to

      they-Top   [police-Nom   [each.other-Nom   it-Acc   steal-Perf]-Comp

      niran-de-i-ru]-to   mi-te-i-ta.[48]

      suspect-Prt-Prog-Nonperf]-Comp   see-Prt-Prog-Perf

      'Each of them understood that the police were suspecting that the other had stolen it.'

   If A-chain formation is impossible across a CP boundary, then it must be supposed that the above anaphors are logophors or that they are permitted by some special mechanism.   As far as I know, neither of such assumptions is well documented.

2.5.2.2 A *For ... To*-Infinitive as a Complement

   Some predicates select for a *for ... to*-infinitive as their complement.   This structure is usually observed with desiderative predicates, as shown in (74), but it is not necessarily restricted to such a type of predicate.   As can be seen in (75), a few other kinds of predicates like *arrange* and *intend* can also take a *for ... to*-infinitive as their

complement.

(74)a. I would prefer very much for my son to take over this business.[49]

    b. I long for my son to take over this business.[50]

(75)a. We have arranged for Mike to pick you up.[51]

    b. I intend for my son to take over this business.[52]

In the above sentences, since *for* is a complementizer, the infinitival clauses are clearly CPs rather than IPs.[53]

       A point relevant to the present discussion is the fact that in these constructions, the embedded subject position can be filled with an anaphor, as demonstrated in (76).[54]

(76)a. We would prefer very much [$_{CP}$ for each other to get a job].

    b. Allen and his wife long [$_{CP}$ for each other to be famous].

    c. They arranged [$_{CP}$ for each other to meet the President].

    d. Mary and Sue intend [$_{CP}$ for each other to play that role].

The above examples are grammatical, though the A-chains between the anaphors and their antecedents cross a CP boundary. Therefore, in the approach where CP is a barrier for A-chain formation, it is not obvious how these sentences are derived.

2.5.2.3 English Nominative Anaphors[55]

       In section 2.5.2.1, we observed that in some languages, anaphors are capable of bearing nominative Case. In fact, though much less widely acknowledged, English also has nominative anaphors in a restricted way.

       A number of works note that anaphors, including reciprocals, never occur in the nominative position in English (Chomsky 1981 & 1986b, Fisher 1988, Rizzi 1990 and Woolford 1999). However, it has been anecdotally reported once in a while that even in English, some speakers use a reciprocal as the subject of a finite clause.[56] For instance, the examples below are from actual language use, all of which contain *each other* in the nominative position.

(77)a. Since the academic year has begun, and there are a lot of new faces, I'd

       like to suggest a brief meeting next week so that we can all be sure we

know who each other is and what everyone does research-wise etc.

(Uchiumi 2006 (3a) p.2, quoted from Sadie Fowler's e-mail dated September 9, 2003)

b. When the second person enters the schedule both people get notified that each other is working there, giving them a chance either to use the system's Notes facility or communicate some other way about what they are doing.

(Uchiumi 2006 (3b) p.2, quoted from the BBC website, http://www.bbc.co.uk/rd/projects/eca/technology/t3.shtml)

c. Twenty-year-old identical twins Adriana Scott and Tamara Rabi were separated at birth and were unaware that each other existed.

(Uchiumi 2006 (3c) p.2, quoted from *Cosmopolitan* July 2003 l.2 p.187)

Sentence (77a) is taken from a geniune e-mail written by a native speaker of English. Sentence (77b) is extracted from the website provided by the British Broadcasting Corporation (BBC), which is a public broadcaster in the UK.   Sentence (77c) is excerpted from the women's magazine *Cosmopolitan*.

What is remarkable about these examples is that their mode of use was not speech but writing.   Generally speaking, people make fewer grammatical mistakes when they write than when they speak.   Besides, if they realize that they have made one, then they usually correct it in writing, though they may not bother to do so in speech.   So it is very difficult to put aside the sentences in (77) as being simple errors of sorts.

Furthermore, the above report agrees with the result obtained in my survey using grammaticality judgments.   Consider the following examples.

(78)a. %You guys expect that each other will win the game.

b. %John and Bill expect that each other will be wrong.

(Uchiumi 2006 (4) p.2)

While there were a handful of speakers who rejected the examples in (78) as being completely ungrammatical, well over half of my informants judged them to be in the acceptable range, and the remainder accepted them only marginally.   Note that the second group gave a full check to the sentences, which is distinct from the third group who said that they were just marginal.   Therefore, although the fact that a class of English speakers permits nominative reciprocals has been ignored as being a marginal phenomenon, it appears that this phenomenon is much more robust than generally

believed.

In the standard approach to binding, anaphors in finite clauses must be A-bound within these clauses. For nominative anaphors, this requirement is unsatisfiable under normal circumstances, since the nominative is usually the highest A-element in a tensed clause. Thus, in such an analysis, the source of the awkwardness in nominative reciprocals that some English speakers feel is the same as that of the ungrammaticality of English nominative reflexives. However, this is not a logical inevitability. In fact, there are a few pieces of evidence that cast doubt on it. First, even people who fully accept reciprocals in the nominative position as in (78) judge their reflexive counterparts as in (69b) and (69c), reintroduced below, to be quite bad.

(69)b. *You guys expect that yourselves will win the game.
　　c. *John and Bill expect that themselves will be wrong.

Moreover, for most of the speakers who do not feel nominative reciprocals to be perfect, the degree of ill-formedness in (69b) and (69c) is significantly stronger than that in the sentences in (78). In the standard approach, these differences between nominative reciprocals and nominative reflexives are rather puzzling.

I suggest that the reason why nominative reflexives are ungrammatical is distinct from why for some speakers, nominative reciprocals are degraded in English. This opens up a brand new view on nominative anaphors. As mentioned in section 2.5.2.1, languages like Japanese allow nominative anaphors. Standardly, it is supposed that the English-type languages, where nominative anaphors are prohibited/restricted, have the default status, and for the Japanese-type languages, there is some special mechanism whereby such anaphors are made possible. But we can turn this way of thinking around. That is, the Japanese-type is the default, and in principle, there is nothing wrong with an anaphor in the subject position of a finite clause being bound from outside this clause. However, if binding theory does not prohibit nominative anaphors, then why are English nominative reflexives ungrammatical and for some speakers, nominative reciprocals awkward?

So far, I have noted that reflexives and reciprocals somehow display an asymmetry in English when occupying the nominative position. However, such a reflexive-reciprocal asymmetry is not restricted to just nominative environments but can also be found elsewhere with a sharper distinction. Observe the pair of sentences in (79).

(79)a. *We understand ourselves' problems.

    b. We understand each other's problems.

      (Uchiumi 2006 (6a) & (6b) p.4)

The above examples indicate that while reciprocals can be marked as genitive, reflexives do not have this option available. Hence, combined with the preceding data, it is safe to say that the latter are restricted to the accusative position. Based on this observation, I suspect that reflexives are lexically prespecified as accusative in English (see also Brame (1977), who holds a similar idea about English anaphors in general). Then examples (69b) and (69c) can be ruled out on the same grounds as the sentences in (80).

(80)a. *Us will win the game.

    b. *Them will be wrong. (Uchiumi 2006 (7) p.4)

Namely, in both (69b) and (69c) and also in (80), though INFL requires the subject to be nominative, it actually bears prespecified accusative Case.[57] Such a Case mismatch leads to strong ungrammaticality.

Let us now turn to nominative reciprocals in English. As discussed above, the judgments split on them from perfectly acceptable to totally unacceptable. However, since the number of people who judge the examples in (78) to be completely ungrammatical is very small, I will put those speakers aside in the present discussion. The emerging picture then is that there are two classes of speakers: (i) those who fully accept the sentences in (78), and (ii) those who accept them only marginally. Therefore, my ultimate task is to explain why these two variations exist with respect to nominative reciprocals.

Following Chomsky (1995), I assume that φ-features on verbs are uninterpretable, and uninterpretable features must be erased at the interface. The φ-features on V are checked and erased by φ-features on N. My proposal is that while class (i) speakers allow a singular number feature to be added to reciprocals, class (ii) speakers cannot exercise this option. Consequently, for the former, a reciprocal in the nominative position can check and erase an uninterpretable number feature on the verb, whereas for the latter, it fails to do so and lead to awkwardness. One piece of evidence to support this line of analysis is that while class (i) speakers also accept sentence (81a), class (ii) speakers reject it strongly.

(81)a. John and Bill believe that each other is intelligent.

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(class (i) √/class (ii) *)
b. John and Bill believe that each other are intelligent.
(class (i) ??/class (ii) ??)
(Uchiumi 2006 (10a) p.5 & (10b) p.6)

That is, if a speaker judges nominative reciprocals to be fully grammatical, then she likes the embedded verb to be singular, as in (81a) (see also (77a) and (77b)).   On the other hand, if a speaker judges such reciprocals to be only marginal, then she dislikes singular verbs and instead prefers them to be plural, as in (81b).   Since class (i) speakers fully accept nominative reciprocals paired with singular verbs, it is natural to suppose that their reciprocals are associated with a singular feature to check off the coinciding feature on the verb.

However, one question still remains.   Namely, if for class (ii) speakers, checking off the uninterpretable number feature on the verb is impossible, then why do they not judge sentences (78) and (81b) to be totally ungrammatical?   The key to solving this problem is that even for class (i) speakers, example (81b) is marginal, not to say perfect.   Since it has been determined that class (i) speakers have a singular feature associated with their reciprocals, it is unlikely that their *each other* in (81b) can also check a plural feature on the verb.   Thus, it should be doubted that in (81b) and for class (ii) speakers, in (78) as well, the verb really agrees with the reciprocal.   Now it is often assumed that with English present-tense verbs, the form without an *-s* (or in the case of the copula, *are*) is the default (Jonathan D. Bobaljik: class lecture, McGill University, Winter 2000).[58]   Based on this assumption, I propose that in the cases at hand, no number feature is added to the reciprocal and that the verb is in default mode without an uninterpretable number feature.   This is not ungrammatical, because no uninterpretable number feature is present, which causes the derivation to crash at the interface.   Nonetheless, it is marginal, since the employed form is a default, replacing the authorized one.[59]

As a quick summary, let us go over the derivations of (81a) and (81b) for each type of speaker.   They are briefly schematized in (82) and (83), where *isg* stands for interpretable singular feature, and *uisg* for uninterpretable singular feature.

(82)   Class (i) Speakers:
a. John and Bill believe that each other$_{[isg]}$ is$_{[uisg]}$ intelligent.

The uninterpretable singular feature on the verb is checked.

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b. ??John and Bill believe that each other[ ] are[ ] intelligent.

No uninterpretable number feature is present on the verb.

(83)   Class (ii) Speakers:

a. *John and Bill believe that each other[ ] is[uisg] intelligent.
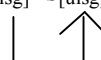
The uninterpretable singular feature on the verb is unchecked.

b. ??John and Bill believe that each other[ ] are[ ] intelligent.

No uninterpretable number feature is present on the verb.

For class (i) speakers, (81a) is grammatical, because the uninterpretable singular feature on the verb is erased by the interpretable singular feature on *each other*. For them, (81b) is not ill-formed, since the reciprocal is not associated with a number feature, and the verb does not contain any uninterpretable number feature. Still, it is not perfect either, because it uses the default form in place of the authorized one. For class (ii) speakers, on the other hand, (81a) is ungrammatical, because *each other* lacks a singular feature, and the uninterpretable feature on the verb cannot be checked off. Sentence (81b), however, is marginal, since the verb is a default, which does not have an uninterpretable singular feature.

Finally, I will close this subsubsection by taking up an interesting question. Kyle Johnson (pc) points out that cross-linguistically, two asymmetries are observed in the binding system. That is, there are languages with both nominative anaphors and accusative anaphors and those with accusative anaphors but no nominative ones. And yet as far as we know, there are no languages with nominative anaphors but no accusative ones. Furthermore, there are languages that have both nominative anaphors and nominative pronouns and those that have nominative pronouns but no nominative anaphors. But again, as far as we know, no languages are attested that have nominative anaphors but no nominative pronouns. So until a reasonable account of these asymmetries can be provided, the picture would remain incomplete.

I do not think that the existence of such asymmetries is merely accidental. Still, nor do I believe that it is a reflection of binding theory. Rather, I would prefer to explain these asymmetries from the functionalistic point of view. To begin with, let us acknowledge two basic facts. First of all, in nominative-accusative languages, the unmarked Case marking is as depicted in (84).

(84) SUBJ.Nom V (OBJ.Acc).

Namely, it is either an intransitive verb with a nominative subject or a transitive verb with

a nominative subject and an accusative object. Secondly, while a pronoun can be referentially independent, an anaphor is referentially dependent upon some other element. In other words, an anaphor must have an antecedent within the same sentence. Thus, an accusative anaphor typically appears in a monoclausal sentence, as in (85a),[60] whereas a nominative anaphor appears in a biclausal sentence, as in (85b) or (85c).

(85)a. [$_{CP}$ SUBJ.Nom$_{ante}$ V OBJ.Acc$_{ana}$].
   b. [$_{CP}$ SUBJ.Nom$_{ante}$ V (OBJ.Acc) [$_{CP}$ SUBJ.Nom$_{ana}$ V (OBJ.Acc)]].
   c. [$_{CP}$ SUBJ.Nom V OBJ.Acc$_{ante}$ [$_{CP}$ SUBJ.Nom$_{ana}$ V (OBJ.Acc)]].

That is, a nominative anaphor tends to occur in a more complex environment than an accusative one does. If that is the case, then it is not surprising that the latter is always developed over the former in the evolution of language. Moreover, since a pronoun can referentially stand on its own, it can appear in the nominative position of a monoclausal sentence, as in (86).

(86) [$_{CP}$ SUBJ.Nom$_{pron}$ V (OBJ.Acc)].

Then again, it does not come as a surprise that a nominative pronoun exists in all languages. Therefore, the two asymmetries do not have to be directly linked to binding theory.

In this subsubsection I have shown that English also has nominative anaphors in a limited sense. While reflexives are ungrammatical in the nominative position in English, since they are lexically prespecified as accusative, English nominative reciprocals are, in principle, possible. The latter are still awkward for some speakers because their reciprocals lack a singular feature, and the corresponding verbs must be default forms, containing no uninterpretable number feature. If the analysis sketched here is on the right track, then the view that an A-chain can never be formed across a CP boundary is too strong.

2.5.2.4 Regarding the NIC Instances

So far, we have seen some evidence that an A-chain can be formed across a CP boundary. Thus, it would be wiser not to say that when there is a CP, it constitutes a barrier for A-chain formation. If that is so, then what renders the NIC instances in (69)

ungrammatical?

　　With respect to (69b) and (69c), reproduced below, the answer has already been provided.

　　　　(69)b. *You guys expect that yourselves will win the game.
　　　　　c. *John and Bill expect that themselves will be wrong.

To reiterate, as argued in the preceding subsubsection, English reflexives like *yourselves* and *themselves* are lexically prespecified as accusative.　Therefore, they cannot occur in the subject position of a finite clause, where nominative Case is required by INFL.

　　The remaining question then is why (69a), repeated below, is ill-formed.

　　　　(69)a. *John$_i$ seems that t$_i$ is intelligent.

Consider first the licit case in (87), where the embedded clause is nonfinite.

　　　　(87) John$_i$ seems t$_i$ to be intelligent.　(Uchiumi 2006 (14) p.8)

In the example immediately above, the DP *John* is base-generated in the embedded clause and then raises to the matrix clause to get Case.　Otherwise it would remain Caseless, and the Case Filter would not be satisfied.　In (69a), on the other hand, *John* already receives Case in the lower clause.　This fact makes its movement to the higher clause superfluous.　As a result, the sentence violates the principle of "movement as a last resort" (Chomsky 1991),[61] which is why it is ungrammatical.

　　Summarizing section 2.5.2, there are instances where A-chains are formed across a CP boundary.　Moreover, the NIC cases are excluded independently of the Chain Condition.　Thus, as the second modification to Reinhart & Reuland (1993)/Fox (1993)'s chain theory, I suggest that CP is not a barrier for A-chain formation.

2.5.3 The Chain Condition as a Derivational Condition

　　Another weakness in Reinhart & Reuland (1993)/Fox (1993)'s Chain Condition is revealed by topicalization constructions such as the sentence below.

　　　　(88) *Myself$_i$, she really hates t$_i$.

In (88) the reflexive *myself* is moved by topicalization to some non-argument position, perhaps the IP-adjoined position, and the example is ill-formed. The problem lies in the fact that the anaphor lacks an antecedent. This is evidenced by the grammaticality of (89), where *myself* is replaced by *herself,* which can take the subject *she* as its antecedent.

(89) Herself$_i$, she really hates t$_i$.

Unfortunately, the Chain Condition, as stated in Reinhart & Reuland (1993)/Fox (1993), cannot exclude (88). Since the movement of *myself* is of A'-type, its trace in the object position is an A'-trace. Thus, this element should be the head of an A-chain. As a result, the sentence has two singleton chains: <she> and <t>, neither of which violates the Chain Condition.[62] The topicalized anaphor, on the other hand, is outside the scope of the Chain Condition, because it is no longer in an A-position. As will be discussed in section 2.6.1, a first person anaphor that is not in an argument position of a syntactic predicate can be licensed as a logophor without a linguistic antecedent with relative ease (vid. (42a) & (67b)). Then it is rather puzzling that this example is not well-formed.

Regarding the ungrammaticality of (88), I think that the intuition is clear. That is, *myself* first merges with *hates*, which, in turn, merges with *she*. At this stage, *myself*, which is -R, is in an argument position of a syntactic predicate with *she* as a subject. The structure at this point is shown in (90.

(90) [$_{SP}$ she hates myself]

Since the anaphor is not at the A-edge of the syntactic predicate, its ACPD is this predicate itself. However, it cannot find an appropriate antecedent in this domain (with *she*, its φ-features do not match those of *myself*). Therefore, the sentence is ruled out. Although the anaphor subsequently moves to an A'-position to break the configuration in question, it is too late.

In order to embody this intuition, I would like to suggest as the third modification to Reinhart & Reuland (1993)/Fox (1993)'s chain theory that the Chain Condition is a derivational condition. Namely, A-chains are created as the derivation proceeds, and the Chain Condition checks the structure at each step. If this proposal is adopted, then the structure in (90) is checked and properly filtered out by the Chain Condition. The derivational version of the Chain Condition can be formalized as in (91).[63]

(91) The Derivational Condition on A-Chains:

A maximal A-chain link α_r, when its ACPD is determined, must either

a. itself be -R and have an antecedent link α_s in this domain, or

b. itself be both +R and Case-marked

Some might oppose the derivational version of the Chain Condition on the basis of an example involving a double object construction like (92).

(92) John$_i$ showed Bill$_j$ himself$_{i/j}$ in the picture.

As is well known, when an anaphor is the direct object of a double object construction, its antecedent can be construed either as the subject or as the indirect object (so long as their φ-features match that of the anaphor). They might argue that this ambiguity cannot be implemented in the derivational approach.

Now the derivation of the above sentence is given in (93). (The adjunct *in the picture* is omitted for simplification. Also, though I assume that *Bill* moves to the Spec of some functional projection to get structural accusative Case, and *showed* raises past this functional head, these movements are not depicted.)

(93) The Derivation of *John Showed Bill Himself*:

1. H himself

2. Bill H himself

3. showed Bill H himself

4. John showed Bill H himself

At the first step, *himself* is perhaps merged with some head, represented as H. At the next step, this complex is merged with *Bill*. Is the anaphor forced to take the latter as its antecedent at this point? The answer is no. Let us mechanically apply the Chain Condition in (91) to derivation (93). Since *himself* is -R, it must have an antecedent link in its ACPD. According to the definition in (63), reproduced below, the ACPD of this anaphor is its own syntactic predicate because it is obviously not at the A-edge.

(63) A-Chain Projection Domain (ACPD) (final version):

Let P_1 and P_2 be argument positions of syntactic predicates, then

P_2 is in the A-Chain Projection Domain of P_1, iff P_2 c-commands P_1, and

54

a. P$_1$ and P$_2$ are arguments of the same syntactic predicate, or

b. P$_1$ is at the A-edge (i.e. in the highest A-position) of a syntactic predicate that is immediately contained by the syntactic predicate of P$_2$, and the former predicate is selected by the head of the latter.

As discussed in section 2.3, a syntactic predicate requires a subject as an essential element. Thus, it is not until the fourth step that the ACPD of *himself* is determined in (93).[64] Since both *John* and *Bill* are within this domain, either of them can be chosen as the antecedent.[65] Therefore, sentence (92) is ambiguous. Actually, at steps 2 and 3, it is even not clear whether *himself* here is a true anaphor or a logophor, since it is logically possible that *showed* will not form a syntactic predicate due to lack of a subject.

Finally, let us consider the following contrast. First, when an anaphor is within a *wh*-phrase extracted from the lower clause in a biclausal structure, it can usually be coindexed either with the subordinate subject, as in (94a), or with the matrix subject, as in (94b).

(94)a. Which picture of herself$_i$ did Bill and his brother say that the teacher$_i$ liked?

b. Which picture of themselves$_i$ did [Bill and his brother]$_i$ say that the teacher liked?

However, in certain contexts, such as when the head of the *wh*-phrase is an adjective, the anaphor must necessarily be coindexed with the embedded subject, as shown in (95) (Cinque 1984, Barss 1986 and Huang 1993).

(95)a. How proud of herself$_i$ did Bill and his brother say that the teacher$_i$ was?

b. *How proud of themselves$_i$ did [Bill and his brother]$_i$ say that the teacher was?

Under the derivational view of the Chain Condition, the reason for this non-optionality is evident. Observe the derivations of (95a) and (95b), given in (96a) and (96b), respectively. (T*he teacher* and *Bill and his brother* are treated as single units for simplification. Also, I use numbers for indices here in order to avoid the confusion with the index assigned in the sentences in (95).)

(96)a. The Derivation of *How Proud of Herself$_i$ Did Bill and His Brother Say*

That the Teacher$_i$ Was?:

  1. of herself

  2. proud of herself

  3. how proud of herself

  4. the teacher how proud of herself

  5. was the teacher how proud of herself

  6. the teacher$_1$ was t$_1$ how proud of herself

  7. that the teacher$_1$ was t$_1$ how proud of herself

  8. [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  9. say [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  10. Bill and his brother say [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  11. did Bill and his brother say [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  12. [Bill and his brother]$_3$ did t$_3$ say [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  13. did$_4$ [Bill and his brother]$_3$ t$_4$ t$_3$ say [how proud of herself]$_2$ that the teacher$_1$ was t$_1$ t$_2$

  14. [how proud of herself]$_2$ did$_4$ [Bill and his brother]$_3$ t$_4$ t$_3$ say t$_2$ that the teacher$_1$ was t$_1$ t$_2$

b. The Derivation of *How Proud of Themselves$_i$ Did [Bill and His Brother]$_i$ Say That the Teacher Was?*:

  1. of themselves

  2. proud of themselves

  3. how proud of themselves

  4. *the teacher how proud of themselves

In both derivations, at step 4, when *the teacher* and how proud of herself/themselves are merged, a small clause syntactic predicate is formed, which is the ACPD of the anaphor. In (96a) *the teacher* can be taken as its antecedent, whereas in (96b) it cannot because their numbers do not match. Therefore, the former is grammatical, but the latter is not.[66] On the other hand, as will be argued in section 2.8, I assume that nouns like *picture* never form syntactic predicates. Thus, in (94a) and (94b) the anaphors are logophoric, and the Chain Condition is irrelevant. The sentences are well-formed insofar as the discourse requirement is satisfied (see section 2.6).

    To summarize, in this subsection I have suggested that the Chain Condition

should be reinterpreted as a derivational condition based on a sentence involving topicalization. Furthermore, it has been shown that the proposal is also fully consistent with facts about double object constructions and long-distance *wh*-questions.

2.5.4 VP Needs a Subject

As declared in section 2.5.1.2, unlike Reinhart & Reuland (1993)/Fox (1993), the present system adopts the VP-internal subject hypothesis. Thus, in a simple transitive sentence like (97), there are two syntactic predicates involved, as indicated in (98).

(97) John kissed Mary.
(98) [$_{IP}$ John$_i$ INFL [$_{VP}$ t$_i$ kissed Mary]]

That is, in addition to the IP, whose subject is *John*, the VP also stands as a syntactic predicate with the trace of *John* as its subject.

Let us consider next (99), which is the passive counterpart of the above example. The structure of this sentence is given in (100).

(99) Mary was kissed by John.
(100) [$_{IP}$ Mary$_j$ was$_i$ [$_{AspP}$ t$_i$ [$_{VP}$ kissed t$_j$ by John]]][67]

Here, the situation is a little different. Although it is true that the IP is a syntactic predicate, neither the AspP nor the VP is, since they do not have a subject. In passives, the VP subject is suppressed or demoted to a *by*-phrase. If that is the case, then it makes an important prediction. Namely, if an anaphor is an argument of a passive verb, then it should behave as a logophor. As far as sentences such as (99) are concerned, there is no way to check this prediction, because no argument slot is left for an anaphor.[68] However, it is indeed testable with a certain type of passive. A case in point is a double complement construction like (101), the structure of which is given in (102).

(101) *This task was assigned to myself.
(102) [$_{IP}$ This task$_j$ was$_i$ [$_{AspP}$ t$_i$ [$_{VP}$ assigned t$_j$ to myself]]]

In the above structure, the verb has the anaphor *myself* as one of its arguments.

Contrary to the prediction, the sentence is ill-formed. This is odd, considering that, as will be discussed in section 2.6.1, a first person logophor can be licensed without an antecedent with relative ease (vid. (42a) & (67b)). It appears that an anaphoric element in this context is a true anaphor. Thus, we wish to say that a passive VP makes a syntactic predicate somehow.

A similar problem arises with one-place verbs that select for a clausal argument (semantic type $<<e, t>, t>$) such as *seem*. Observe the examples in (103).

(103)a. It seems that the explanation makes no sense.
    b. The explanation seems to make no sense.

These sentences have the structures depicted in (104a) and (104b), respectively.

(104)a. [$_{IP}$ It INFL [$_{VP}$ seems that [$_{IP}$ the explanation$_i$ INFL [$_{VP}$ t$_i$ makes no sense]]]].
    b. [$_{IP}$ The explanation$_i$ INFL [$_{VP}$ seems [$_{IP}$ t$_i$ to [$_{VP}$ t$_i$ make no sense]]]].

Both sentences consist of three syntactic predicates: the embedded VP, the embedded IP and the matrix IP. But crucially, the matrix verb does not form a syntactic predicate, because again, it does not have a subject. However, as indicated in (105), an anaphor projected as an additional argument of this verb does not display logophoric properties.

(105)a. *It seems to myself that this proposal makes no sense.
    b. *This proposal seems to myself to makes no sense.

As a solution to these problems, I would like to suggest the hypothesis in (106), which is the fourth modification to Reinhart & Reuland (1993)/Fox (1993)'s framework.

(106)a. VP requires a subject.
    b. If it does not have a subject of its own, then an item in the Spec of the IP that is an extended projection of the verb is regarded as its subject.

That is, VP differs from other phrases in that it inherently needs a subject, and if its specifier is unprojected, then whatever is in the Spec of the IP that is an extended projection of the verb is counted as its subject (see Baker (2003) for the view that the requirement of a subject is an essential property of a verb). For instance, in sentence

(99), the IP, as well as the AspP, is an extended projection of the verb. Therefore, *Mary*, which is the subject of the IP, is also regarded as the subject of the VP. This is briefly schematized in (107).

(107) $[_{IP}$ Mary$_j$ was$_i$ $[_{AspP}$ t$_i$ $[_{VP}$ kissed t$_j$ by John]]]

SYNTACTIC PREDICATE

SYNTACTIC PREDICATE
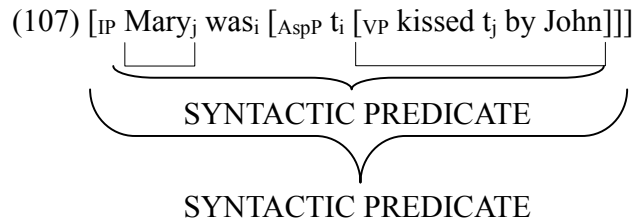
If this hypothesis is adopted, then the verbs in question all form syntactic predicates. As a consequence, the reflexives in (101) and (105) are true anaphors, and the sentences are properly ruled out by the Chain Condition.

2.5.5 The Genitive DP in Possessive Constructions Is Not a Subject of the Head Noun

In this subsection let us give a little consideration to the status of the genitive DP in possessive constructions. I will start with a well-known paradigm represented by the pair of examples below (Chomsky 1982 & 1986b, Huang 1982, Fox 1993, etc.).

(108)a. The children like each other's friends.
b. The children$_i$ like their$_i$ friends.
(Chomsky 1986b (229i) & (229ii) p.170)

The two sentences are exactly identical except that in (108a) the genitive DP is a reciprocal, while in (108b) it is a pronoun. Crucially, both examples are grammatical. Therefore, anaphors and pronouns are not in complementary distribution in the genitive position in possessive constructions.

Second, observe example (109).

(109) Lucas and Spielberg thought that $[_{IP}$ the media would severely criticize $_{DP}$ [each other's films]].[69]

Suppose, as is standard, that a genitive DP is a subject of a possessed noun. Then the reciprocal in the above sentence is at the A-edge of the DP predicate. Thus, its ACPD is

the syntactic predicate immediately containing this predicate, which is the embedded IP. Although the antecedent *Lucas and Spielberg* is not within this domain, the example is not ruled out, contrary to expectations (see Pollard & Sag (1992) for a similar report, but see Chomsky (1981) for a different claim).

Third, consider the following examples.

(110)a. In John and Mary's pockets were each other's pictures.
  b. The arguments that John and Mary presented were the basis for each
   other's articles.[70]
  (Fox 1993 (i) & (ii) fn.11)

In the above sentences, the c-command requirement on *each other* in the genitive position is clearly unsatisfied. The antecedent *John and Mary* is deeply embedded in the PP in (110a) and in the subject DP in (110b). Nevertheless, the examples are well-formed.

Based on these three facts, I conclude that an anaphor in the genitive position is licensed as a logophor. In section 2.3, we saw that a logophor typically occurs where the complementarity between an anaphor and a pronoun breaks down. Moreover, it is not subject to the locality requirement nor to the c-command condition, because, as discussed in section 2.4, it is not regulated by the Chain Condition.

However, in order to analyze the above reciprocals as logophors, it must be the case that the genitive position in possessive constructions is not an argument position of a syntactic predicate, which is not obvious. Fox (1993) argues that the genitive DP in possessive constructions is indeed a subject of the head noun, but having a subject is not sufficient for something to be counted as a syntactic predicate. He proposes, taking a hint from Reinhart & Reuland (1993), that an event role is also a requirement. To put it simply, among all the heads, it is only V, which is eventive, that can potentially form a syntactic predicate. Then in (108a), (109), (110a) and (110b), though the reciprocals are arguments of the head nouns, they are *not* arguments of s*yntactic predicates,* because nouns never form such predicates due to lack of an event role.

Although Fox's suggestion could offer a potential answer to the question just posed, it does not solve the problem on the fundamental level. In fact, the above data merely reflects one aspect of a more pervasive problem. Namely, the odd behavior of a genitive DP is not restricted to nominal environments. First, observe the sentences below.

(111)a. Tom and Mark don't mind each other's backing out of the job.

b. [Tom and Mark]$_i$ don't mind their$_i$ backing out of the job.

c. *[Tom and Mark]$_i$ don't mind them$_i$ backing out of the job.

In (111a) and (111b) the phrase the genitive position of which an anaphor or a pronoun occupies is gerundive (=verbal). Nonetheless, both examples are grammatical. Thus, anaphors and pronouns are not in complementary distribution in the genitive position, even in verbal contexts. Note that if genitive *their* in (111b) is replaced by accusative *them*, then the sentence is ungrammatical in the intended interpretation, as indicated in (111c).

Consider next the pair of examples in (112), discussed in Uchiumi (2005a).

(112)a. *Holmes and Poirot believe that [Scotland Yard will appreciate [each other investigating the case]].

b. ?/*Holmes and Poirot believe that [Scotland Yard will appreciate [each other's investigating the case]].[71]

(Uchiumi 2005a (5a) & (5b) p.3)

In the above sentences, the verb *appreciate* selects for a gerundive complement. As can be seen in (112a), when *each other*, which is its semantic subject, is marked as accusative, a long-distance antecedent is absolutely prohibited. By contrast, as shown in (112b), when the reciprocal is marked as genitive, it can marginally take such a antecedent, at least for some speakers. Note that the source of the contrast is not that the semantic subject of a gerundive clause is better in genitive than in accusative, since usually both variants are well-formed, as indicated in (113).

(113)a. Holmes and Poirot believe that Scotland Yard will appreciate Miss Marple investigating the case.

b. Holmes and Poirot believe that Scotland Yard will appreciate Miss Marple's investigating the case.

(Uchiumi 2005a (6a) & (6b) p.3)

Furthermore, as shown in (114b), a genitive reciprocal attaching to a gerund does not have to be c-commanded by its antecedent. Note that this is not the case with accusative reciprocals in the same environment, as can be seen in (114a).

(114)a. *The letters from John and Bill interfered with each other getting the job.

b. The letters from John and Bill interfered with each other's getting the job.

Evidently, genitive reciprocals display logophoric behavior in verbal environments as well. Fox's account cannot extend to these instances, since verbs have an event role. Therefore, as the fifth modification, I propose that a genitive DP is not a subject of the head noun or verb[72].[73] Instead, I assume that the genitive position, in which such a DP appears, is a non-argument position.[74]

One piece of evidence that the suggested approach is on the right track comes from data on wh-extraction. Namely, a genitive DP makes a domain opaque to wh-extraction (Uchiumi 2005a). This is true when the relevant domain is a nominal as in (115) or a gerund as in (116).

(115)a. Who$_i$ did you see [a picture of t$_i$]?
    b. (?)Who$_i$ did you see [the picture of t$_i$]?[75]
    c. *Who$_i$ did you see [a girl's picture of t$_i$]?
    (Uchiumi 2005a (7a), (7b) & (7c) p.4)
(116)a. What$_i$ did Holmes appreciate [PRO doing t$_i$]?
    b. What$_i$ did Holmes appreciate [Poirot doing t$_i$]?
    c. *What$_i$ did Holmes appreciate [Poirot's doing t$_i$]?
    (Uchiumi 2005a (8a), (8b) & (8c) p.4)

Many researchers suggest that for nominals, it is definite/specific/existence-presupposing DPs that constitute islands (e.g. Fiengo & Higginbotham 1981, Bowers 1987, Stowell 1989, Diesing 1992, Mahajan 1992). However, although this claim probably has some truth to it, it cannot be the whole story for two reasons. First, in (115c) the DP in which extraction is blocked is not definite.[76] In English, there is a phenomenon called (in)definiteness spread (see Fassi Fehri 1989 & 1993, Siloni 1994, Longobardi 1996 among others). To illustrate the phenomenon, observe the following pair of existential sentences.

(117)a. There was a girl's dog in the park.
    b. *There was the girl's dog in the park.
    (Uchiumi 2005a (9a) & (9b) p.4)

The two examples are minimally different from each other -- in (117a) the possessor of

the associate is indefinite, while in (117b) it is definite.   Now *in there*-constructions, the associate is required to be what Milsark (1977) terms a weak NP.   Thus, in the former, where the possessor is weak, the associate itself should also be a weak NP because the sentence is grammatical.   By contrast, in the latter, where the possessor is strong, the associate itself should also be a strong NP because the sentence is ungrammatical.   That is, the (in)definiteness of a possessed DP is dependent on that of the possessor. Returning to (115c), since the possessor of the *picture*-noun is indefinite, the *picture*-NP itself should also be weak or indefinite.[77]   Second, as shown in (116), the condition is clearly extendable to gerunds, in which the contrast is not specific versus nonspecific but the presence versus absence of a possessor.   Thus, the definiteness effect cannot elucidate the paradigms in (115) and (116).

If, on the other hand, it is supposed that a genitive DP is in an A'-position, then the above data can be explained by some form of Relativized Minimality (Rizzi 1990a). Namely, in (115c) and (116c) the *wh*-phrase moves to an A'-position across the possessor, which is the closer A'-position, as depicted in (118).[78, 79]

(118)a. *... who$_i$ ... a girl's$_j$ ... t$_i$

b. *... what$_i$ ... Poirot's$_j$ ... t$_i$
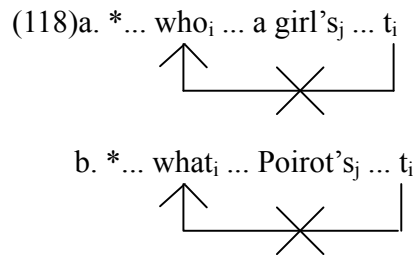
Lastly, as a summary of this section, let us consider two sets of examples: one that further supports my version of the Chain Condition and the other that shows that the genitive position must absolutely be exempt from the Chain Condition.   Observe first the following sentences.

(119)a. *John and Bill are afraid that [$_{SP}$ [$_{SP}$ each other being dishonest] might hurt their relationship].

b. ??/*John and Bill are afraid that [$_{SP}$ [$_{SP}$ for each other to be dishonest] might hurt their relationship].

The structures of these two sentences are almost identical.   The matrix clause takes a finite clause as its complement, which , in turn, has a nonfinite clause as its subject.   The only difference is that in (119a) the nonfinite clause is gerundive, while in (119b) it is

infinitival.   Moreover, in both examples, *each other* is the subject of the most deeply embedded clause, and its antecedent *John and Bill* is the subject of the highest clause. The examples are ill-formed,[80, 81] which is predicted by the present system.   That is, since the reciprocal is at the A-edge of the nonfinite clause, its ACPD is the next syntactic predicate up, namely the middle clause.   However, this domain does not contain the antecedent.   In fact, this is strong evidence against the view that the local domain of an anaphor extends infinitely until it may include at least one potential antecedent, as in Chomsky (1986b).   After all, in both (119a) and (119b), *John and Bill* is undisputedly the closest c-commanding DP to the reciprocal.

Turn next to (120), where the subject of the gerundive clause in (118a) is replaced by its genitive counterpart.

(120) John and Bill are afraid that each other's being dishonest might hurt their
relationship.

Despite the fact that the basic configuration between the anaphor and its antecedent is not altered, the sentence is grammatical.   Therefore, this is yet another argument to show that genitive reciprocals are not subject to the Chain Condition.

2.6 Logophors and Discourse Conditions

In the last few sections we have seen that the Chain Condition is the means of formal licensing for anaphors in argument positions of syntactic predicates.   In this section let us consider how anaphors are licensed that do not occupy such positions.

As stated above, anaphoric elements that are not in argument positions of syntactic predicates are called logophors.   According to Reinhart & Reuland (1993), the use of logophors is governed by discourse conditions.   Although they suspect that "point of view" or "consciousness report" is somehow relevant, they do not discuss what these conditions are exactly like.   In the remainder of this section, I would like to reveal some specific discourse factors without the intention of making the enumeration exhaustive.

Before anything else, it should be noted that discourse conditions are different from grammatical constraints, like the Chain Condition, in one important way.   Namely, discourse conditions are not absolute.   For example, one discourse condition might be allowed to be violated by having some other condition satisfied.[82]   Also, discourse conditions are not universal.[83]   They may vary from language to language and from

dialect to dialect. Furthermore, they are sometimes even subject to speaker variations as well.[84] As a result, the quality of data might be called into question. It is unavoidable that in some cases, not all speakers necessarily agree with judgments. Therefore, the data presented in this section should be taken as one based on average judgments.

It appears that Reinhart & Reuland's term "discourse" overlaps to a large degree with what Kuno & Kaburaki (1977) call empathy. Thus, in section 2.6.1, I will start off the discussion by roughly sketching out their theory of empathy. In section 2.6.2, I will make a few amendments to Kuno & Kaburaki's approach. In section 2.6.3, I will investigate non-empathy-related discourse factors, which have to do with processing. Finally, in section 2.6.4, I will briefly discuss how discourse conditions can be organized into a formalized theory.

2.6.1 Kuno & Kaburaki's (1977) Theory of Empathy and the Licensing of Logophors

Let us consider the situation that Kuno & Kaburaki (1977) take up, which is that a man whose name is John hit his wife called Mary. Then one might report this state of affairs, using one of the sentences below.

(121)a. John hit Mary.
   b. John hit his wife.
   c. Mary's husband hit her.
   (Kuno & Kaburaki 1977 (1a), (1b) & (1c) p.627)

Although these three sentences are truth-conditionally equivalent, they differ from one another with respect to, so to speak, the "camera angle" from which each sentence is depicting the situation. In (121a) the speaker is describing the event from a more or less neutral perspective. In (121b), on the other hand, it is being described from John's perspective rather than Mary's, which is evidenced by the fact that the speaker has referred to John as *John*, and to Mary as *his wife*. By contrast, in (121c) it can be seen that the speaker is taking Mary's standpoint rather than John's.

The above set of examples demonstrates that the choice of descriptors shifts the perspective from which the situation is being depicted in the sentence. Kuno & Kaburaki call such a perspective "empathy". To put it another way, empathy is the degree to which the speaker identifies herself with a certain participant in the event

described by a given sentence. There are a number of other ways to control how the speaker's empathy is distributed among the participants in the event. In what follows, I will show that empathy plays an important role in logophor licensing.[85]

First, observe the following three-way contrast.

(122)a. (?)/??That Mary had hit John depressed the teacher and herself.
    b. ??/?*That John had hit Mary depressed the teacher and herself.
    c. *That John had been hit by Mary depressed the teacher and herself.

Some feel that (122a) is almost perfect, while for others, it is somewhat awkward. Sentence (122b) is from somewhat awkward to very awkward depending on the speaker. Example (122c) is completely unacceptable to virtually everyone. This discrepancy can be accounted for in terms of the speaker's empathy. The basic assumption is that the more empathy the referent of a certain DP obtains, the more likely this DP is to serve as a logophoric antecedent. According to Kuno & Kaburaki's Surface Structure Empathy Hierarchy, it is easiest for the speaker to empathize with the referent of a subject and then next easiest for her to empathize with that of an object, and it is most difficult for the speaker to empathize with the referent of an oblique[86]. Thus, (122a) is best, because the antecedent of the logophor is a subject, whose referent receives a decent amount of the speaker's empathy. On the other hand, (122c) is worst, where the antecedent is an oblique, whose referent can atttract little empathy. Lastly, (122b) is worse than (122a) but better than (122c), since the antecedent is an object, which is middle in the Surface Structure Empathy Hierarchy.

Next, consider the following set of examples.

(123)a. The queen invited Lucie and myself for a drink.
    b. ?The queen invited Lucie and yourself for a drink.
    c. *The queen invited Lucie and himself for a drink.

In (123a), although the first person logophor *myself* does not have a linguistic antecedent, it is well-formed. In (123b) the logophor is shifted to second person *yourself*, and it is a little awkward. In (123c) the logophor is third person *himself*, and it is completely ill-formed. This contrast again can be explained in terms of the speaker's empathy. Namely, according to Kuno & Kaburaki's Speech-Act Participant Empathy Hierarchy, the first person is easiest to be empathized with, the second person is next easiest, and the third person has the most difficulty in drawing the speaker's empathy. Therefore, as

shown in (123a), a first person logophor can be used without a linguistic antecedent with relative ease, because the first person can usually attract enough empathy to serve as a logophoric antecedent without being linguistically expressed.[87] On the other hand, as indicated in (123b), a second person logophor without a linguistic antecedent is generally somewhat awkward, unless the scarcity of the empathy towards it is somehow made up. As for third person logophors, it is quite difficult to dispense with a linguistic antecedent, as can be seen in (123c).

Nevertheless, it is not the case that a third-person logophor without a linguistic antecedent is absolutely prohibited. Such a logophor is possible if the want of the speaker's empathy towards the referent of the unexpressed antecedent is compensated in some other way. For example, Kuno & Kaburaki argue that the speaker's empathy easily goes to the referent of the theme of the sentence (viz. what the sentence is about). Thus, the sort of third person logophor at issue may be well-formed provided that the construction clearly signals that the unexpressed antecedent is the theme. Perhaps (124a), adapted from Fiengo (1977), is a case in point.

(124) a. Physicists like themselves are rare.
        (adapted from Fiengo 1977 (47a) p.50)
    b. ??Rats like themselves are rare.
    c. *Rocks like themselves are rare.

In (124a) the antecedent of *themselves*, which is not linguistically expressed, is the theme of the sentence.   That is, the interpretation of this sentence is equivalent to, 'As for those people, physicists like themselves are rare'.   Indeed, the example is well-formed. However, on close examination, it can be seen that this construction too is subject to a restriction; namely, the unexpressed antecedent must be human.   If the antecedent is an animal, as in (124b), then the sentence sounds rather coerced.   Furthermore, if the antecedent is a thing, as in (124c), then coercion comes up to the level at which the sentence sounds unacceptable.   This makes sense, since according to Kuno & Kaburaki's Humanness Hierarchy, the referent of a human DP attracts more empathy than that of an animate nonhuman DP, which, in turn, draws more empathy than that of an inanimate DP.

Finally, consider the pair of examples below.

(125) a. Pictures of herself pleased the woman.
     b. *Pictures of herself pleased a woman.

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In (125a) the logophor *herself* has a definite antecedent, and the example is well-formed. By contrast, in (125b) the antecedent is indefinite, and the sentence is ill-formed. This phenomenon can be understood in the following way. Kuno & Kaburaki argue that it is easier for the speaker to empathize with the referent of what has already been talked about than that of what has just been introduced into the discourse for the first time. To put it simply, the referent of a definite DP is more easily empathized with than that of an indefinite DP. Meanwhile, as will be discussed in section 2.6.3, logophors prefer to have an antecedent to their left rather than to their right. In the above examples, the antecedents appear to the right of the logophors. Consequently, in order to cancel out this directionality disadvantage, they are required to be definite,[88] which is why (125a) is fine, but (125b) is ruled out.

In the present subsection I have briefly sketched out Kuno & Kaburaki's (1977) theory of empathy. As is clear from the discussion, empathy plays an crucial role in the formal licensing of logophors. Namely, the more empathy the referent of a certain DP obtains, the more likely this DP is to serve as a logophoric antecedent.

2.6.2 Some Modifications to Kuno & Kaburaki's (1977) Theory

In this subsection I would like to modify Kuno & Kaburaki's (1977) theory of empathy in two respects. The first point that I would like to bring up is the treatment of sentences with object-Experiencer psychological verbs. Consider the examples below.

(126)a. John greatly amuses me.   (Kuno & Kaburaki 1977 (ia) fn.23)
　　　b. ??I greatly amuse John.   (Kuno & Kaburaki 1977 iia) fn.23)
　　　c. John greatly amuses Mary.   (Lisa Travis pc)

Kuno & Kaburaki (1977: fn23) note that verbs like *amuse* sound best when they are used with a first person object based on the fact that (126b) is not as acceptable as (126a). Although they admit that this phenomenon is somehow related to empathy, they do not simply make a direct link between the two. However, as evidenced by the well-formedness of (126c), where third person *Mary* is the object, the problem with (126b) is not necessarily that its object position is not occupied by a first person element. On the other hand, Reinhart & Reuland (1993: fn.27) remark that this construction constitutes a prototypical consciousness report from the viewpoint of the

referent of the object.   That is, they argue that in sentences like those in (126), contrary to the Surface Structure Empathy Hierarchy, the speaker's empathy readily goes to the referent of the object rather than that of the subject.   (If that is the case, then (126b) is ambivalent in terms of empathy, because the third person, which is ranked lowest in the Speech-Act Participant Empathy Hierarchy, is the object of *amuse*, while the first person, which is at the top of the hierarchy, is the subject of the same verb.)   I agree with Reinhart & Reuland's view on this issue.

However, a question still remains.   Namely, why does the Surface Structure Empathy Hierarchy not hold here?   I suspect that it is because of the θ-role. Specifically, I would like to suggest that the referent of an Experiencer is more easily empathized with than that of a Theme or Goal.   Thus, with object-Experiencer psych-constructions, the referent of the object, which is an Experiencer, is more empathized with than that of the subject (aside from the issue of exactly what θ-role it bears) against the Surface Structure Empathy Hierarchy.

If the above proposal is on the right track, then the following contrast can also be straightforwardly explained.[89]

(127)a. That the queen invited Lucie and himself for a drink pleased Max.
   b. ??That the queen invited Lucie and himself for a drink helped Max.

That is, (127a) is well-formed, since the antecedent of the logophor, *Max* is an Experiencer, the referent of which is easily empathized with.   By contrast, (127b) is very awkward, because the same DP is a Goal,[90] which cannot attract very much empathy.

Next, while Kuno & Kaburaki argue that the referent of a generic DP draws less empathy than that of a non-generic DP, I claim exactly the opposite.   Compare the previous example (125b) with the newly introduced one (128).

(125)b. *Pictures of herself pleased a woman.
(128) Pictures of herself can usually please a woman.

As already discussed in the preceding subsection, (125b) is ill-formed, since being indefinite, the antecedent of the logophor receives little empathy.   However, minimally different (128) is acceptable, though the antecedent is still indefinite.   This is thought to be because in the latter, *a woman*, though indeed indefinite, is used generically, in which case it attracts a fair amount of the speaker's empathy.[91]

In fact, there is independent evidence to suggest that more empathy is directed to

the referent of a generic DP than to that of a non-generic DP.   According to Kuno &
Kaburaki, aside from the sarcastic reading, a subjective expression like *one's beloved* is
degraded unless the speaker can empathize with the referent of its antecedent.   Namely,
since it contains an adjective that describes an internal feeling but does not usually have
an external manifestation, such an expression is most natural when it is used about the
speaker's own feeling, as in *my beloved wife*.   If the speaker is not expressing her own
inward feeling but someone else's, then that person must be close enough to the speaker
for her to be able to tell what is going on in his mind.   Now observe the set of examples
below.

(129)a. The man supported his beloved wife.
b. ??A man supported his beloved wife.
c. A man should always support his beloved wife.

Sentence (129a) is fine, whereas (129b) is awkward.   This is expected, because, as
discussed in section 2.6.1, the referent of an indefinite DP is not as much empathized
with as that of a definite DP.   However, what is interesting is the well-formedness of
(129c), which shows that the referent of a generic indefinite DP attracts at least more
empathy than that of a non-generic indefinite DP.

The reason why Kuno & Kaburaki conclude that the referent of a generic DP is
less empathized with than that of a non-generic DP is to explain the following contrast.

(130)a. *Then John's wife$_i$ criticized her$_i$ husband.
(Kuno & Kaburaki 1977 (91a) p.655)
b. An alcoholic's wife$_i$ should not criticize her$_i$ husband.
(Kuno & Kaburaki 1977 (91b) p.655, repeated from (42a) p.640)

As mentioned in the preceding subsection, the use of the expression *John's wife* in (130a)
signals that the speaker's empathy lies more with John than with his wife.   This
contradicts the use of the expression *her husband* in the same sentence, which suggests
the opposite, and thus, the example is excluded.   By contrast, in (130b), Kuno &
Kaburaki claim, such a conflict is neutralized, since *an alcoholic* being generic, its
referent attracts little of the speaker's empathy.

In the above argument, however, Kuno & Kaburaki seem to miss the point that
with respect to the expression *an alcoholic's wife*, it is not just *an alcoholic* but also the
entire phrase that is generic.   Then provided that the empathy that the referent of a

generic DP receives is really conservative, (130b) still embraces the contradiction that while the expression *an alcoholic's wife* indicates that this woman is fairly empathized with, the expression in the same sentence *her husband* suggests otherwise.

In fact, I suspect that empathy has nothing to do with the ill-formedness of (130a). Rather, I would like to explain the above phenomenon in terms of semantics. That is, in (130a) what the pronoun *her* refers to is *John's wife*, and thus, the object DP means "John's wife's husband". This is semantically redundant, because John's wife's husband is actually John, which is why the sentence is odd. On the other hand, (130b) does not have this problem. Although *her* indeed refers to *an alcoholic's wife*, the generic expression *an alcoholic's wife's husband* is not redundant, since the typical specimen of the class "alcoholics' wives' husbands" is not equal to the typical specimen of the class "alcoholics" (e.g. the latter does not necessarily have to be a married man). If this line of approach is correct, then the type of sentence in (130a) should be acceptable so long as the object DP is not redundant. This prediction is indeed confirmed by the following example, where simply, one adjective is added to (130a).

(131) Then John's wife$_i$ criticized her$_i$ violent husband.

In (131) *John's wife's violent husband* is not semantically redundant, because it means more than "John" (i.e. he is violent). Therefore, the sentence is well-formed. This phenomenon cannot be accounted for by Kuno & Kaburaki's analysis. To conclude, it appears that nothing argues against my claim that the referent of a generic DP attracts more empathy than that of a non-generic DP.

2.6.3 Non-Empathy-Related Discourse Conditions

So far in this section I have discussed some empathy-related discourse conditions relevant to the licensing of logophors. However, I believe that there exists a different kind of discourse factor, which also plays an important role in logophor licensing. This second type of discourse condition is more related to processing rather than empathy. The basic assumption is very simple. Namely, with respect to a given logophor, the more readily the environment allows a certain DP to be processed as its antecedent, the more likely this DP is to actually become that way. In what follows, I will propose four processing-related discourse conditions along the lines of this assumption and offer some supporting evidence for each.

First of all, let us start with the following contrast.

(132)a. It was reported by him$_i$ that the queen invited Lucie and himself$_i$ for a
    drink.

b. *It was reported φ_{by} pro$_i$ that the queen invited Lucie and himself$_i$ for a
    drink.

As discussed in section 2.6.1, according to the Surface Structure empathy Hierarchy, the
referent of an oblique is least empathized with. Still, as shown in (132a), a passive
by-Agent can serve as a logophoric antecedent under certain circumstances. However,
as can be seen in (132b), this is not possible when such a *by*-phrase is implicit[92]. Based
on this fact, I propose as the first processing-related discourse condition that logophors
favor an explicit antecedent over an implicit one.[93]

Second, consider the pair of examples below.

(133)a. *Peggy thought that Dan sold pictures of herself.

b. Dan sold, Peggy thought, pictures of herself.

Sentence (133a) is ill-formed, presumably because the antecedent is too distant from the
logophor.[94] This intuition is supported by the fact that (133b) is acceptable, in which the
antecedent is made closer by parenthesizing *Peggy thought* just before the *picture*-noun
anaphor.[95] Therefore, I suggest as the second processing-related discourse condition
that logophors prefer a closer antecedent. Note that the antecedent in (133b) does not
c-command *herself*, no matter what the exact structure of the parenthetical may turn out
to be like. Thus, "closeness" here means 'proximity in the linear order' and not 'locality
in the hierarchical structure'.

However, as Lisa Travis (pc) points out, one problem arises at this point. That
is, how do we measure distance? It is obvious that what we are looking for is not
physical distance (i.e. how many words apart). Observe the following pair of examples.

(134)a. *Dan, Peggy thought, sold pictures of herself.

b. ??Dan sold, Peggy thought, millions and millions of pictures of herself.
    (Lisa Travis pc)

In (134b) the antecedent is physically more distant from the logophor (7 words apart)
than in (134a) (4 words apart). Still, the former is not as bad as the latter. Thus, I

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would like to suggest instead that distance is measured by phrasal categorial boundary. In particular, if it is assumed that for the purpose of the Closeness Effect, only major categories such as NP (=DP in the current terminology), lexical VP[96] (LVP) and AP are counted as boundaries (and all the other categories are transparent), then the above four sentences each can be represented with relevant labels with respect to distance as in (135).

(135)a. *Peggy [$_{LVP}$ thought that Dan [$_{LVP}$ sold [$_{DP}$ pictures of herself]]]].
     b. Dan [$_{LVP}$ sold, (Peggy [$_{LVP}$ thought)[97], [$_{DP}$ pictures of herself]].
     c. *Dan, (Peggy [$_{LVP}$ thought), [$_{LVP}$ sold [$_{DP}$ pictures of herself]].
     d. ??Dan [$_{LVP}$ sold, (Peggy [$_{LVP}$ thought), millions and [$_{DP}$ millions of [$_{DP}$ pictures of herself]]].

Suppose that an LVP-boundary makes half as much distance again as a DP-boundary (i.e. DP-boundary=1 vs. LVP-boundary=1.5). Then the whole paradigm in (135) can be nicely explained. Representation (135b) is well-formed, because *Peggy* and *herself* are separated by just one DP-boundary plus one LVP-boundary (1+1.5=2.5). On the other hand, (135a) and (135c) are ruled out, since the antecedents and the logophors are as far as one DP-boundary plus two LVP-boundaries ($1+1.5\times 2=4$).[98] The status of (135d) is very marginal, because the two elements are at the distance of two DP-boundaries plus one LVP-boundary ($1\times 2+1.5=3.5$), assuming that the sequence *DP and DP* is some projection other than DP.

Furthermore, the proposed approach provides a straightforward account as to why an anaphor coordinated with another DP, unlike a *picture*-noun anaphor, can have a so-called "long-distance" antecedent. Consider again Reinhart & Reuland's (1993) example introduced in section 2.3 as (42d). Its relevant representation is given in (136).

(42)d. Max boasted that the queen invited Lucie and himself for a drink.
(136) Max [$_{LVP}$ boasted that the queen [$_{LVP}$ invited Lucie and himself for a drink]].

This representation is fine, because the antecedent and *himself* are separated by two LVP-boundaries ($1.5\times 2=3$), which distance is less than that of marginal (135d).

Regarding this issue, however, another factor must be taken into account. Compare (133b) above to (137), whose representation with relevant labels is shown in (138).

(137) *Dan sold pictures of herself, Peggy thought.

(138) *Dan [$_{LVP}$ sold [$_{DP}$ pictures of herself]], (Peggy [$_{LVP}$ thought).

In (138), just as in (135b), the antecedent appears across only one NP-boundary plus one VP-boundary from the logophor.　Nevertheless, the sentence is unacceptable.　I think that this is due to the directionality of the antecedent.　Namely, logophors prefer an antecedent to their left rather than to their right, which is my third processing-related discourse condition.

　　　　Finally, consider the sentences in (139) as compared with (42d), reintroduced above.

(139)a. Max$_i$ showed up at Buckingham Palace.　*Lucie and himself$_i$ were
　　　　invited for a drink by the queen.
　　b. ??Max$_i$ showed up at Buckingham Palace, and Lucie and himself$_i$ were
　　　　invited for a drink by the queen.

As observed in (42d), an anaphor coordinated with another DP generally allows a "long-distance" antecedent.　However, even such an anaphor is likely to be excluded with an antecedent beyond a sentence boundary, as can be seen in (139a).　This indicates that even for logophors, it is difficult to have an intersentential antecedent.[99]　As shown in (139b), the sentence slightly improves if the two separate sentences are assembled into a single compound sentence.　Thus, my fourth processing-related discourse condition is that an antecedent in the same independent clause is favored over an antecedent in the conjugate coordinate clause, which, in turn, is favored over an intersentential antecedent.

　　　　In this subsection we have seen four discourse conditions that have to do with processing.　These conditions are complexly intertwined with each other and also with empathy-related discourse conditions to license logophors.　In the next subsection it will be briefly considered how such discourse conditions can be organized into a formalized theory.

2.6.4 Organizing Discourse Conditions Into a Formalized Theory

　　　　In the preceding subsections we have seen a number of discourse conditions that license logophors.　These conditions can be summarized as in (140).

(140) The Summary of Discourse Conditions:

The Surface Structure Empathy Hierarchy	subject > object > oblique
The Speech-Act Participant Empathy Hierarchy	first person > second person > third person
The Sentence Theme Condition	theme > non-theme
The Humanness Hierarchy	human > nonhuman
The Definiteness Condition	definite > indefinite
The θ-Role Condition	Experiencer > Theme/Goal
The Genericness Condition	generic > non-generic
The Explicitness Condition	explicit antecedent > implicit antecedent
The Closeness Condition	close antecedent > distant antecedent
The Directionality Condition	antecedent to the left > antecedent to the right
The Intrasentential Requirement Condition	antecedent in the same independent clause > antecedent in the conjugate coordinate clause > intersentential antecedent

Although the existence of the above conditions is virtually undeniable from the discussion so far, it would be more desirable to show in a strict form how they interact with each other in logophor licensing.   In the present subsection I will briefly explore some possibilities as to how such discourse conditions can be organize into a formalized theory.

As mentioned at the outset of this section, one of the characteristics of discourse conditions is that they are violable under certain circumstances.   For instance, once again observe the previous example (125a).

(125)a. Pictures of herself pleased the woman.

As discussed in section 2.6.1, although this sentence violates the Directionality Constraint, it is still acceptable.   The justification for this phenomenon is that it abides by other conditions, including Humanness, Definiteness, θ-Role, Explicitness, Closeness and Intrasentential Requirement.   Perhaps the most straightforward way to induce such an effect is to assume a ranking of conditions just as OT does regarding grammatical constraints.   Namely, in the above case, it can be supposed that at least one of the

satisfied conditions is ranked higher than the Directionality Requirement, which eliminates all the other candidates for the antecedent except *the woman*.[100]

Another important trait of discourse conditions is that they are subject to dialectal/idiolectal variations.   For example, consider the following sentence.

(141) (*)Mary said that a picture of myself would be nice on that wall.

While some people thoroughly accept (141), there are a few speakers who feel that it is quite degraded.   This is especially evident when it is compared with example (42a), reintroduced below, which is fine for everyone.

(42)a. A picture of myself would be nice on that wall.

With respect to this sort of issue, OT provides a solution.   In the framework of OT, though the set of constraints is universal, their ranking itself is language/dialect-specific. Therefore, the above data can be explained, say on the following assumption.   For those who reject (141), the Explicitness Condition is ranked relatively high, and hence, the first person, which is not linguistically expressed, loses to *Mary* in being the antecedent.   On the other hand, for those who rule in the same sentence, this constraint is ranked lower, and thus, the first person wins out in the competition.

However, one potential problem with such an approach lies in an example like (142).

(142) John told Bill that there was a picture of himself in the morning paper.
        (Kuno 1987 (11.85b) p.98)

The above sentence is ambiguous between the reading in which the antecedent of the reflexive is the subject and that in which it is the indirect object.   However, as alluded to by Kuno (1987), the former is more or less the dominant interpretation.   It is not easy for an OT-like methodology to deal with such a phenomenon in which multiple antecedents are acceptable, but some are preferable over the others.[101]

Another possible way to handle dialectal/idiolectal variations is to assume a system like the following.   Each discourse condition is allotted certain values, one of which is added to the score depending on how it is satisfied.   The score is calculated with respect to individual potential antecedents of a logophor.   Variations come from different assignments of values to discourse conditions depending on the dialect/speaker.

In this way, the above "more than one antecedent but some are preferred over the others" problem is trivial.   Namely, although the element that obtains the highest score is the most desirable antecedent, there is a "critical score" at which or above every potential antecedent is judged to be acceptable.   For instance, suppose that the critical score is set at 100.   Furthermore, let us assume for the purpose of the discussion that the assignment of values to discourse conditions is as shown in (143).

(143) The Provisional Assignment of Values to Discourse Conditions:

The Surface Structure Empathy Hierarchy	subject (=30) > object (=10) > oblique (=0)
The Speech-Act Participant Empathy Hierarchy	first person (=30) > second person (=20) > third person (=0)
The Sentence Theme Condition	theme (=30) > non-theme (=0)
The Humanness Hierarchy	human (=30) > nonhuman (=0)
The Definiteness Condition	definite (=30) > indefinite (=0)
The θ-Role Condition	Agent[102]/Experiencer (=30) > Theme/Goal (=0)
The Genericness Condition	generic (=30) > non-generic (=0)
The Explicitness Condition	explicit antecedent (=30) > implicit antecedent (=0)
The Closeness Condition[103]	across a DP-boundary (=-20), across a LVP-boundary (=-30)
The Directionality Condition	antecedent to the left (=30) > antecedent to the right (=0)
The Intrasentential Requirement Condition	antecedent in the same independent clause (=30) > antecedent in the conjugate coordinate clause (=10) > intersentential antecedent (0)

Then in example (142), *John* scores 130 as the antecedent of the reflexive (Surface Structure Empathy (30) + Speech-Act Participant Empathy (0) + Sentence Theme (0) + Humanness (30) + Definiteness (30) + θ-Role (30) + Genericness (0) + Explicitness (30) + Closeness (-20$\times$1 + -30$\times$2) + Directionality (30) + Intrasentential Requirement (30)). On the other hand, the score of *Bill* is 110 (Surface Structure Empathy (10) + Speech-Act Participant Empathy (0) + Sentence Theme (0) + Humanness (30) + Definiteness (30) + θ-Role (0) + Genericness (0) + Explicitness (30) + Closeness (-20$\times$1 + -30$\times$1) + Directionality (30) + Intrasentential Requirement (30)).   Therefore, either of the two is the legitimate antecedent, because their scores both reach 100, but the former is preferred, since it scores more than the latter.

Nevertheless, the second approach has a problem of its own.   That is, there is

some evidence to suggest that the evaluation of whether a given element is a possible antecedent of a certain logophor or not is not done against an absolute criterion like a critical score.   For example, consider the previous sentence (133a), reproduced below.

(133)a. *Peggy thought that Dan sold pictures of herself.

In the above example, as discussed in section 2.6.3, the matrix subject *Peggy* cannot serve as the antecedent of the logophor, not even marginally.   This indicates that not only does it lose to *Dan* in the competition, but also it fails to attain a critical score. However, such a sentence becomes acceptable if the subordinate subject is made a less ideal potential antecedent.   For instance, observe example (144).

(144) Peggy thought that this covered pictures of herself.

Here, it appears that the absolute qualification of the matrix subject as the antecedent is not at all different from that in (133a).   Still, the sentence is well-formed, because the embedded subject *this* is not an optimal potential antecedent[104] (i.e. it is not human, nor is it an Agent/Experiencer).   Therefore, the criterion that determines whether something is an acceptable antecedent or not is relative rather than absolute (see also endnotes 69, 71 & 99 for similar phenomena).   Possibly, provided that the scores of all the potential antecedents of a given logophor fall short of a critical point, they are curved so that at least one of the scores may come up to the critical point.   In an OT-like approach, on the other hand, this sort of phenomenon can be handled rather gracefully, say by having the θ-Role Condition outrank the Closeness Condition.

In this subsection I have discussed how discourse conditions can be woven into a formalized theory.   Specifically, I have proposed two plausible approaches.   In the first approach, discourse conditions are ordered in the form of ranking as in OT, and the candidate that incurs the fewest violations of higher constraints is selected as the antecedent.   The second approach allots certain values to each condition, according to which, every candidate that runs up to a critical score is acceptable, while the one that gets the highest score is most favored.   I recognize that each of these approaches has its imperfections and have not yet come to the conclusion as to which one is better.   Further research is desired on this subject, including the search for a third possibility.

2.7 Possessor-less *Picture*-Noun Anaphors Are Indeed Logophoric:

Against Belletti & Rizzi's (1988) Proposal

In the present thesis I take the stance in agreement with Reinhart & Reuland (1993) that possessor-less *picture*-noun anaphors are logophoric and are governed by discourse conditions. However, this is not necessarily the mainstream approach in current syntactic research. In their influential work, Belletti & Rizzi (1988) argue that possessor-less *picture*-noun anaphors are, in essence, not different from anaphors in argument positions of syntactic predicates and thus are regulated by Condition A. Such an analysis has been the standard one up until today. In this section I will raise some objections against Belletti & Rizzi's proposal and consider the implications thereof.

2.7.1 Belletti & Rizzi's (1988) Proposal

One interesting property of possessor-less *picture*-noun anaphors is, as already discussed in the previous section, that their anaphoric relation can sometimes be backward. For example, while in (145a) backward *picture*-noun anaphora is possible, in (145b) it is awkward or at least not as good as in the former.

(145)a. Pictures of herself pleased Mary.
b. (?)Pictures of herself fell on Mary.

Belletti & Rizzi (1988) explain such a contrast by assuming that with object-Experiencer psychological verbs, the object is structurally higher than the subject at the underlying level. Their suggested structure of (145a) is depicted in (146).
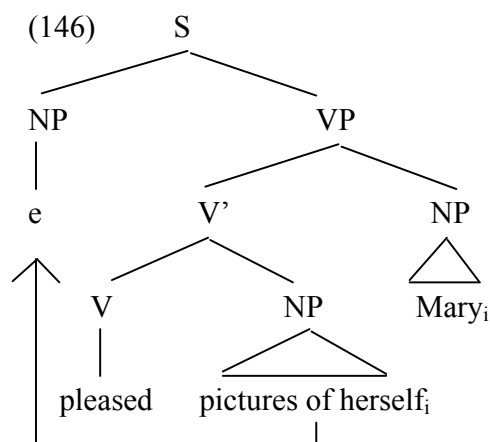
In (146) the subject is base-generated below the object, and at S-structure, it raises to [NP, S] or the Spec of IP in the more recent terminology.[105]

Belletti & Rizzi assume that Condition A is an "anywhere" principle, which can apply at any level of representation (see also Lebeaux (1988 & 1995) for a similar claim). Thus, sentence (145a) is fine, because at D-structure, the antecedent *Mary* c-commands the *picture*-noun anaphor.   On the other hand, (145b) is ill-formed, since the verb being non-psychological, the anaphor is not c-commanded by its antecedent at any level of representation.

To sum up, according to Belletti & Rizzi's proposal, possessor-less *picture*-noun anaphors abide by Condition A just like ordinary anaphors.   With respect to backward *picture*-noun anaphora, it is attributed to the peculiar structure associated with object-Experiencer psych-verbs.

2.7.2 Some Weaknesses of Belletti & Rizzi's (1988) Proposal

One of the weaknesses of Belletti & Rizzi's (1988) proposal is that the contrast in (145) is not as sharp as it should be.   Namely, granted that a contrast is indeed there, (145b) is not so bad for some speakers,[106] and some feel that (145a) is not perfect either. The gist of Belletti & Rizzi's idea is that in the latter, the anaphor is properly c-commanded by its antecedent at some point of the derivation, whereas this is not the case in the former.   This hierarchical difference is embodied at the surface level in the following sentences with ordinary anaphors.

(147)a. Mary and Sue will arrange for each other to meet the chair.
b. ?*I believe that for each other to meet the chair will help Mary and Sue.[107]

In the above pair of examples, the contrast is very clear.   Virtually everyone agrees that (147a) is fully grammatical and that (147b) is quite degraded.   It is not obvious then in Belletti & Rizzi's framework why the contrast in (145) is not as distinct.   Worse still, even if the verb in (147b) is replaced by a psychological one, the sentence does not improve dramatically, as shown in (148).[108, 109]

(148) ?*/??I believe that for each other to meet the chair will please Mary and Sue.

Furthermore, restricting the discussion to non-psych-examples, the degree of awkwardness in backward *picture*-noun anaphora is not uniform. Observe the following triplets (the head noun is *book* instead of *picture* for pragmatic reasons).

(149)a. A book about himself bothered the politician.
      b. (?)A book about himself reached the politician.
      c. ??A book about himself defended the politician.

Compare first (149a) and (149b). As discussed in the preceding subsection, while psych-examples like (149a) are nearly perfect, sentences whose verbs are not psychological are a little awkward (at least for some speakers), as can be seen in (149b). Consider then another non-psych-sentence (149c), which is strikingly worse than (149b). The difference between the two non-psych-sentences seems to lie in the θ-role. Namely, in the former, the object assumes a Theme role, whereas in the latter, it is a Goal. Such a contrast is quite puzzling to Belletti & Rizzi's analysis, since both of them fail to satisfy Condition A in the same way.[110]

On the other hand, in the logophoric approach, the above phenomenon can be explained by revising the θ-Role Condition, discussed in section 2.6.2, as in (150).

(150) The θ-Role Condition (revised):
      Agent/Experiencer > Goal > Theme

That is, the referent of an Agent/Experiencer is more empathized with than that of a Goal, which still attracts more of the speaker's empathy than that of a Theme. (145a) and (149a) are more acceptable than (145b) and (149b), respectively, because in the former, the θ-role of the antecedent is an Experiencer, while in the latter, it is a Goal. Example (149c) is even worse than (145b) and (149b), since in the former, the antecedent is a Theme, which is ranked lowest in the hierarchy. For some speakers, an Experiencer antecedent is not quite sufficient to override the directionality disadvantage, which is why (145a) and (149a) are not completely comfortable for them. Also, for some people, the referent of a Goal attracts relatively enough empathy, which makes (145b) and (149b) practically well-formed for them.

Perhaps a more serious problem is that possessor-less *picture*-noun anaphors appear to be very different from ordinary anaphors in possible antecedent choice, which is not compatible with Belletti & Rizzi's approach. As noted by Zribi-Hertz (1989),

possessor-less *picture*-noun anaphors can take split antecedents, as shown in (151a).

(151)a. Mary$_i$ showed Paul$_j$ a nice picture of themselves$_{i+j}$.
(Zribi-Hertz 1989 (49b) p.710)
b. *Mary$_i$ showed Paul$_j$ themselves$_{i+j}$ in a picture.

However, as can be seen in (151b), split antecedents are strictly prohibited with anaphors in argument positions of syntactic predicates.   Such a difference cannot be captured by Belletti & Rizzi's analysis, since in their system, the two types of anaphors are essentially of the same kind.

2.7.3 An Object-Experiencer Psych-Verb Is Not a Sufficient Condition nor a Necessary Condition for Backward *Picture*-Noun Anaphora

Let us further evaluate Belletti & Rizzi's (1988) proposal in relation to backward *picture*-noun anaphora.   Basically, they claim that psych-verbs like *please* are structurally different from other transitive verbs, which makes backward *picture*-noun anaphora possible.   However, there are some pieces of evidence to suggest that it is not appropriate to directly link such anaphora to object-Experiencer psych-verbs.   In what follows, I will take up these arguments and reconfirm that possessor-less *picture*-noun anaphors are indeed discourse-governed.

First, it is not the case that an object-Experiencer psych-verb always licenses backward *picture*-noun anaphora.   For example, as mentioned in section 2.6.1, backward binding is impossible with indefinite antecedents even in psych-contexts.   Example (125b) is repeated below.

(125)b. *Pictures of herself pleased a woman.

This is because, as already discussed, the referent of an indefinite DP does not attract much of the speaker's empathy.   As evidenced by the grammaticality of (152), this sort of definiteness restriction is not observed with ordinary anaphors.

(152) A woman blamed herself.

Therefore, an object-Experiencer psych-verb is not a sufficient condition for licensing

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backward *picture*-noun anaphora.

Moreover, there are also cases where backward *picture*-noun anaphora is possible in non-psych-environments.   For instance, consider example (153a).

(153)a. The picture of herself proved that the woman was left-handed.

b. *The picture of herself proved that a woman was left-handed.

According to the Surface Structure Empathy Hierarchy, the referent of a subject is more easily empathized with than that of an object or oblique.   In (153a), the antecedent being a subject, *prove* allows backward *picture*-noun anaphora, even though it is not a psych-verb.[111]   Interestingly enough, the Definiteness Restriction, just mentioned above, can also be observed here, as evidenced by the ill-formedness of (153b).   Therefore, an object-Experiencer psych-verb is not a necessary condition for licensing backward *picture*-noun anaphora either.

In conclusion, it seems that it is not a psych-verb such as *please* itself that licenses backward *picture*-noun anaphora.   At the same time, it is further confirmed that possessor-less *picture*-noun anaphors are indeed sensitive to discourse factors.

2.7.4 Fox & Nissenbaum (2004): The "Mixed" Approach

In their recent LI paper, Fox & Nissenbaum (2004) propose a sort of "mixed" approach to possessor-less *picture*-noun anaphors, which combines both syntactic and discourse analyses.   They maintain that anaphors embedded in possessor-less DPs can be licensed either syntactically by Condition A or pragmatically by discourse conditions. This possibility is worth considering, and I will devote this subsection to a response to their idea.

First of all, Fox & Nissenbaum (2004) suppose that with verbs like *ask, explain* and *tell* (aside from their use with a Causer subject), the object is not salient enough in the discourse to serve as a logophoric antecedent.[112]   Furthermore, they claim that when a possessor-less *picture*-noun anaphor takes such an object as its antecedent, its position at LF is critical.   They argue that this must be an effect of Condition A, assuming that Condition A is strictly an LF condition.   For example, Fox & Nissenbaum report that while (154a) is well-formed, (154b) is not.   The LF representation of each sentence is depicted in (155).

(154)a. I asked John how many books about himself Mary thinks are in the library.
(Fox & Nissenbaum 2004 (20b) p.480)

b. *I asked John how many books about himself Mary thinks there are in the library.
(Fox & Nissenbaum 2004 (20b) p.480)

(155)a. [$_{IP}$ I asked John [$_{CP}$ how many books about himself Mary thinks [$_{CP}$ are in the library]]].

b. *[$_{IP}$ I asked John [$_{CP}$ t$_i$ Mary thinks [$_{CP}$ there are [how many books about himself]$_i$ in the library]]].

In these examples, the antecedents of *himself* are the indirect objects of *asked*, and thus, licensing by discourse is irrelevant. The anaphor in (154a) can still be licensed by Condition A, since its antecedent is indeed in its "local" domain, as shown in (155a). However, Condition A cannot save (154b). As illustrated in (155b), the DP containing the anaphor must be reconstructed in its base position, because *there*-constructions require a weak NP to be present in the expletive's c-command domain at LF (Heim 1987 and Frampton 1991). Therefore, the anaphor is no longer "local" to its antecedent.

This data would be very interesting if it could be substantiated. But unfortunately, it does not seem to be very robust. My informants at least judged both (154a) and (154b) to be within the acceptable range (see also Hicks (2006), who reports similar judgments on these sentences).[113] On the other hand, they properly rejected (156), in which the anaphor is "long-distance" in overt syntax.

(156) *I told John that Mary thinks there are many books about himself in the library.

The result that I obtained brings about the suspicion that contrary to Fox & Nissenbaum's claim, a logophor does not interact with reconstruction, which is my basic position in this thesis.

Another piece of evidence that Fox & Nissenbaum provide to support their "mixed" approach is the pair of examples in (157). Their LF representations are given in (158).

(157)a. His aides should have explained to President Clinton what kinds of pictures of himself and her$_i$ baby Mrs. Jones$_i$ wants to see.

b. *His aides should have explained to President Clinton what kinds of
pictures of himself and her$_i$ baby no mother$_i$ wants to see.
(Fox & Nissenbaum 2004 (21b) & (21a) p.481)

(158)a. [$_{IP}$ His aides should have explained to President Clinton [$_{CP}$ what kinds
of pictures of himself and her$_i$ baby Mrs. Jones$_i$ wants to see]].

b. *[$_{IP}$ His aides should have explained to President Clinton [$_{CP}$ t$_j$ no mother$_i$
wants to see [what kinds of pictures of himself and her$_i$ baby]$_j$]].

The argument is similar to the previous one. The anaphor in (157a) can be licensed by
Condition A, because, as can be seen in (158a), it is "local" to its antecedent at LF. On
the other hand, this option is not available to the anaphor in (157b). In LF
representation (158b), the *book*-phrase is put back in its base position in order to get the
bound pronoun *her* c-commanded by its antecedent. However, the anaphor then is no
longer "local" to its antecedent.

As for these examples, the judgments split among my consultants. Some
judged (157a) to be indeed better than (157b), some felt it was the other way around, and
some detected no difference in acceptability between them. What is more, there were
speakers who reserved their judgments on these sentences due to lack of confidence.
(See also Hicks (2006), who reports similar uncertain judgments on (157a) and (157b).)
In fact, the sentences appear to be more complex than actually needed. All that is
required is: (i) for an anaphor and a pronoun to be in a displaced possessor-less DP, (ii)
for the antecedent of the anaphor to be the dative argument/object of the matrix verb, and
(iii) for the antecedent of the pronoun to be an R-expression/quantified DP in the
embedded subject position. Thus, I constructed much simpler examples myself as in
(159) and investigated whether the reported kind of contrast would be observed about
them.[114]

(159)a. We asked Clinton what sort of scandal about himself and her$_i$ that female
intern$_i$ would want.

b. We asked Clinton what sort of scandal about himself and her$_i$ no female
intern$_i$ would want.

Now the judgments were almost unanimous. Most of my informants agreed that (159a)
and (159b) were both acceptable.[115] Again, if the anaphor is "long-distance" at the
surface level, then the sentence is completely ill-formed, as shown in (160).

(160) *We told Clinton that no female intern$_i$ would want this sort of scandal
about himself and her$_i$.

Therefore, the sort of contrast that Fox & Nissenbaum report could not be confirmed in my survey.

In the preceding paragraphs I have indicated that the data upon which Fox & Nissenbaum's argument is grounded is insecure. Yet even if their data is applicable to certain speakers, it does not necessarily lead to the conclusion that there are some cases where possessor-less *picture*-noun anaphors are licensed by Condition A. The problem is that their initial assumption that an object can never serve as a logophoric antecedent is clearly wrong. Observe the following examples.

(161)a. Mary has told John that this is the picture of himself.
b. *Mary has told John that Sue believes that this is the picture of himself.

In (161a) *himself* takes the matrix object *John* as its antecedent, which is well-formed. This is not licensed by Condition A, because the antecedent is obviously not "local" to the anaphor (even at LF). The point is that though it is true that an object is not ranked high in the Speech-Act Participant Empathy Hierarchy, such an insufficient discourse salience can be compensated in some other way. In the sentence at issue, the antecedent is very close to the reflexive: across only one DP-boundary, induced by *picture* (see section 2.6.3 on how to measure distance). Moreover, the DP intervening between the *picture*-noun anaphor and its antecedent is a demonstrative, which is not an ideal potential antecedent (see section 2.6.4). Thus, the salience of *John* as the antecedent is relatively raised. As illustrated in (161b), if more distance is added (i.e. an LVP-boundary that *believes* makes), and there intervenes a good potential antecedent (i.e. *Sue* in this case), then the sentence is completely unacceptable.

If that is the case, then there would be another interpretation of Fox & Nissenbaum's data (Kyle Johnson pc). Suppose that for some reason, discourse conditions are conditions at LF for their speakers.[116] Then the two problematic LF representations would be ruled out by these conditions on the same grounds as (161b). That is, in (155b) the antecedent and the reflexive are separated by one DP-boundary plus one LVP-boundary (i.e. due to *books* and *thinks*), and in (158b) they are apart by one DP-boundary plus two LVP-boundaries (i.e. due to *pictures*, *wants* and *see*). In addition, there intervenes an optimal potential antecedent (i.e. *Mary* in the former and *no mother* in the latter). By contrast, in (155a) and (158a) the antecedent and the reflexive are

separated by only one DP-boundary (i.e. due to *books* and *pictures*, respectively), and there is no intervening DP between them. Therefore, unless this "discourse conditions at LF" possibility is eliminated, it could not be concluded based on the data in question that possessor-less *picture*-noun anaphors could be licensed by Condition A.

As the last argument against Fox & Nissenbaum's approach, there are a few pieces of evidence to suggest that the licensing mechanism for possessor-less *picture*-noun anaphors refers to surface representation but not LF representation. Consider first the examples in (162).

(162)a. *[John and Mary]$_i$ asked me who liked which pictures of each other$_i$.
   b. *I asked [John and Mary]$_i$ who liked which pictures of each other$_i$.

Following the standard analysis, the LF representations of the two sentences should be as shown in (163).

(163)a. [$_{IP}$ [John and Mary]$_i$ asked me [$_{CP}$ who [which pictures of each other$_i$]$_j$ liked t$_j$]].
   b. [$_{IP}$ I asked [John and Mary]$_i$ [$_{CP}$ who [which pictures of each other$_i$]$_j$ liked t$_j$]].

In both representations, the reciprocal is "local" to the antecedent. Nevertheless, the corresponding sentences are not well-formed. This is unexpected in Fox & Nissenbaum's approach, where possessor-less *picture*-noun anaphors can be licensed at LF. On the other hand, such ill-formedness can be accounted for if it is assumed that what is relevant is only surface representation. In (162a) the antecedent and the reflexive are separated by one DP-boundary and two LVP-boundaries (i.e. due to *pictures*, *asked* and *liked*). In (162b), although the two elements are at the distance of only one DP-boundary plus one LVP-boundary (i.e. due to *pictures* and *liked*), the antecedent *John and Mary* is an object, which does not attract much of the speaker's empathy. Moreover, in both sentences, there intervenes at least one optimal potential antecedent: *me* and *who* in the former and *who* in the latter. Thus, in these examples, proper logophoric relations cannot be established.

Furthermore, in my survey, there was a class of informants who fully accepted example (164a) but not (164b).

(164)a. Did John tell Cindy which picture of herself Bill liked?

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b. (*)Which picture of herself did John tell Cindy that Bill liked?

Since the *picture*-noun anaphor in (164b) can be freely reconstructed in the Spec of the lower CP at LF, as shown in (165), the above contrast is very puzzling to Fox & Nissenbaum's analysis.

(165) [CP ti did John tell Cindy [CP [which picture of herself]i that Bill liked]]

However, again on the assumption that what is crucial is only surface representation, this phenomenon can be attributed to the Directionality Effect, discussed in section 2.6.3.   Namely, logophors prefer to have an antecedent to their left rather than to their right.

The "mixed" approach is more complex than the pure discourse approach, since the former involves two conditions while the latter only one.   Nevertheless, it seems that the data coverage of the "mixed" approach is not necessarily broader than that of the pure discourse approach.   If that is the case, then there is no reason why we should not stick to the idea that discourse is the only licensing mechanism for possessor-less picture-noun anaphors.

2.7.5 Implications

In this section I have confirmed that possessor-less *picture*-noun anaphors are indeed logophoric.   As a summary, let us consider what conclusions can be drawn from the above discussion.

First, the contrast in (145), repeated below, should not be attributed to a structural difference but to a one regarding a discourse factor.

(145)a. Pictures of herself pleased Mary.
b. (?)Pictures of herself fell on Mary.

Namely, *Mary* in (145a) is an Experiencer, whose referent is, as suggested in section 2.6.2, more easily empathized with than that of a Goal, which is the role assumed by the same DP in (145b).

Second, the discussion in this section does not necessarily disprove the claim that the object is structurally higher than the subject at the underlying level with respect

to *please*-type psych-verbs. Nevertheless, backward binding examples like (145a) cannot be taken as evidence to support such a claim, and the argument is weakened at the very least. Possibly, if the two arguments of a *please*-type verb share identical θ-roles with those of a *like*-type verb, then it may suggest that the hierarchical relation of the arguments of the former should be underlyingly reversed, assuming that such things as Perlmutter & Postal's (1984) Universal Alignment Hypothesis (UAH) and Baker's (1988) Uniformity of Theta Assignment Hypothesis (UTAH) are correct. However, according to Pesetsky (1995), the object of a *please*-type and the subject of a *like*-type bear different θ-roles, indicating that *X pleases Y* does not necessarily mean the same as *Y likes X*. For example, in the situation described in (166), sentence (167a) is true but (167b) is not.

> (166) Mary lived in an apartment house with a bell at the entrance. This bell used to make an annoying sound, which would jar on her nerves. One day, the bell rang, but Mary was very happy, because it was something to tell her that her boyfriend came.
>
> (167)a. The bell pleased Mary.
>
> b. Mary liked the bell.

Hence, Pesetsky argues that the subject of a *please*-type verb is a Causer, whereas the object of a *like*-type verb is a Target of Emotion.

Third, backward binding examples like (145a) cannot be taken as evidence to show that Condition A is an "anywhere" principle. As a result, the validity of this claim is also weakened at the very least.

Fourth, possessor-less *picture*-noun anaphors cannot be used to argue for successive cyclic movement or an intermediate landing site in long-distance *wh*-questions. For example, it has often been claimed that sentences like (168) show that the *wh*-phrase goes through the Spec of the lower CP, because the reflexive must be bound in its "local" domain at some point of the derivation.

> (168) [CP Which pictures of herself did Mary say [CP John saw]]?

However, such an argument is not valid, since possessor-less *picture*-noun anaphors are logophoric and do not necessarily have to be bound. Therefore, in order to maintain that *wh*-movement is really cyclic, we have to draw on other evidence.

2.8 Two Subtypes of So-Called Possessed *Picture*-NPs[117]

Consider first the example below.

(169) ?/*John knows that Mary's picture of himself was in the newspaper.
      (Uchiumi 2005a (1a) p.1)

In (169) the anaphor *himself* is embedded in a so-called possessed *picture*-NP, and its antecedent is outside this phrase.   While such sentences are completely ill-formed for some people, there are some speakers who accept them with some marginality, as noted by a number of researchers (e.g. Kuno 1987, Reinhart & Reuland 1993, Asudeh & Keller 2001, Keller & Asudeh 2001, Runner et al. 2002).

In section 2.5.5, I argued that the genitive DP in possessive constructions is not an argument of the head noun.   Thus, it might be possible to explain the above split judgments as follows.   Namely, since *Mary* is not an argument of *picture*, it follows that the latter lacks a subject.   As a result, it does not form a syntactic predicate, and *himself* functions as a logophor.   For some speakers, the Surface Structure Empathy Hierarchy is more important than the Closeness Condition.   According to the former condition, the referent of a subject is perhaps more empathized with than that of a possessor (though the status of a possessor in the hierarchy was not mentioned in the preceding sections).   Therefore, the matrix subject is salient enough in the discourse to serve as the antecedent of the reflexive, which makes (169) more or less well-formed.   By contrast, for others, the relative importance of the two discourse conditions is reversed, and hence, the example is completely unacceptable.

However, admitting that the above explanation is basically correct as far as (169) is concerned, it is not the case that this type of sentence always induces split judgments. For example, observe sentence (170), which is excluded by virtually everyone.

(170) *John knows that Mary's criticism of himself was videotaped.
      (Uchiumi 2005a (2) p.1)

In the present section it will be argued that there are, in fact, two subtypes of possessed *picture*-NPs.   In the first variant, the embedded anaphor is indeed governed by discourse conditions, whereas in the second, such an anaphor is instead regulated by the Chain Condition.

First of all, I suspect that the contrast between (169) and (170) stems from

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different types of head nouns that the two possessed *picture*-NPs have.   In particular, I assume that while *criticism* potentially takes two arguments: Agent and Theme, *picture* takes only Theme as its argument.   As for the latter, it makes no difference even if the genitive DP is construed so-called "agentively", namely as the producer of the picture. This is the same as *Mary* not being an argument of *cake* in *Mary's cake* even if it is interpreted as the producer of the cake.

   The point is that only *criticism* is deverbal and inherits an argument structure from *criticize*, which is clearly a two-place predicate.   Of course, *picture* can also be used as a verb, as can be seen in (171), though its meaning is figuratively shifted.

   (171) Mary pictured the worst case scenario.

In this case, indeed, the subject, as well as the object, is a thematic argument, presumably an Experiencer.   However, I believe that $picture_V$ is inherently different from *criticize* in terms of its derivation.   For the latter, the unmarked form is the verb *criticize* itself, which is the base for the noun *criticism*, whereas for the former, the unmarked form is $picture_N$, and $picture_V$ is derived from *have ... in one's (mental) $picture_N$*, where $picture_N$ is incorporated into *in* and then into *have* in the lexicon (see Hale & Keyser 1993 for discussion of the derivations of such denominal verbs).[118]   Therefore, the claim that Theme is the only potential argument of the noun *picture* can be maintained.

   Based on this assumption, I postulate the structures of the relevant parts of (169) and (170) as in (172a) and (172b), respectively.

   (172)a. [$_{DP}$ Mary's [$_{NP}$ picture of himself]]
        NOT SYNTACTIC PREDICATE (no subject)
    b. [$_{DP}$ Mary$_i$'s [$_{NP}$ t$_i$ criticism of himself]]
        SYNTACTIC PREDICATE

In (172a) the noun *picture* does not project any specifier, and *Mary* is directly generated as the possessor of the DP.   Meanwhile, in (172b) the same element is base-generated in the Spec of NP and subsequently moves to the possessor position.   Thus, even with the assumption that a genitive DP is not a true subject, *criticism* in (170) still forms a syntactic predicate, since it has a subject, the trace of *Mary*.   On the other hand, *picture* in (169) does not, because it lacks a genuine subject.

   Then *himself* in (170) is required by the Chain Condition to take an antecedent in its ACPD.   Since the reflexive is not at the A-edge of the possessed *picture*-NP, its

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ACPD is this syntactic predicate. However, within this domain is only *Mary* as a potential antecedent, the gender of which does not match that of the reflexive. Therefore, a proper A-chain cannot be formed, and the example is unanimously ungrammatical. As for the reflexive in (169), what is applicable is not the Chain Condition but discourse conditions. Depending on which discourse factors the speaker prioritizes, the sentence may or may not be degraded, as discussed in the outset of this section.

Furthermore, the same line of analysis also provides a natural explanation for the different behaviors of *picture* and *criticism* with respect to the disjoint reference effect. Contrary to what is typically noted in the literature, Keller & Asudeh (2001) report that in an experiment using magnitude estimation[119], their subjects moderately accepted pronouns embedded in *picture*-NPs that are coreferential with their possessors, as in (173).

(173) Hanna found Peter's$_i$ picture of him$_i$.
　　　(Keller & Asudeh 2001 (v) Table2 p.486)

This result was fully replicated in my survey, which employed the traditional grammaticality judgment methodology. Most of my informants judged (174a) to be in the acceptable range.

(174)a. Mary's$_i$ pictures of her$_i$.
　　　 b. *Mary's$_i$ criticism of her$_i$ (was videotaped).[120]

However, even for those who accepted (174a), sentence (174b) was sharply ungrammatical.

The above contrast can also be accounted for by the proposed difference in argument structure between the two nouns. Given below are the structures of (the relevant parts of) (174a) and (174b), respectively.

(175)a. [$_{DP}$ Mary$_i$'s [$_{NP}$ pictures of her$_i$]]
　　　　　　NON-REFLEXIVE SEMANTIC PREDICATE
　　　 b. [$_{DP}$ Mary$_i$'s [$_{NP}$ t$_i$ criticism of her$_i$]]
　　　　　　REFLEXIVE SEMANTIC PREDICATE

Recall that the present thesis adopts Reinhart & Reuland's (1993) version of Condition B,

introduced in (26), which is reproduced below.

> (26) Condition B:
>
> A reflexive semantic predicate is reflexive-marked.

Thus, if a semantic predicate is reflexive, then it must be reflexive-marked. In (175) both *picture* and *criticism* form a semantic predicate, since this type of predicate does not require a subject (see Reinhart & Reuland (1993) for details; see also section 2.3 for a brief summary). But crucially, only the latter is reflexive (i.e. two (or more) of its arguments are coindexed). More importantly, it is not reflexive-marked, because the head *criticism* is not lexically reflexive, and the pronoun *her* is used instead of *herself*. This leads to a violation of Condition B.[121] As for (175a), Condition B does not apply or is vacuously satisfied.

So far, I have argued that while *picture* takes only Theme as its argument and is associated with the structure in (172a) or (175a), *criticism* potentially takes two arguments, namely Agent and Theme, and is associated with the structure in (172b) or (175b). In the preceding paragraphs I have suggested that the difference is that only the latter is derived from a two-place verb *criticize*, from which it inherits an argument structure.

Up to this point, however, I have only focused on a subclass of deverbal nouns, namely process nominals. But it is well known that there exists another subclass called result nominals. Conceptually, result nominals are similar to *picture* in that they do not designate events but entities. Then it would not be surprising if these nominals do not project an external argument in their structure either.[122] So let us hypothesize that result nominals have the first type of structure rather than the second type.

The above hypothesis should potentially be testable with *criticism*. Yet it turned out that with this noun, some speakers found that the result interpretation was not very natural, perhaps due to the existence of a better word *critique*. It seems that *evaluation* is a more appropriate word to use for this purpose, since people obtain a result reading from it with relative ease. Thus, I constructed the following pair of examples with *evaluation*, which should test the hypothesis in question in terms of the disjoint reference effect.

> (176) a. *Mary's$_i$ evaluation of her$_i$ was videotaped.
>
> b. (*)Mary's$_i$ evaluation of her$_i$(, which she got from Mrs. Smith,) was seen by her parents.

Sentence (176a) is biased towards the process reading of *evaluation* by the verb *videotape*, whereas in (176b) the result reading is promoted by the relative clause in the parentheses. If the hypothesis is right, then the former should be judged to be ungrammatical, but the latter to be grammatical.

I asked 12 speakers for their judgments on these sentences.   The result was that it was only 3 (=25%) who perceived the contrast, and the rest judged both examples to be equally bad. This number is hard to interpret.   Still, it is unquestionable that much fewer speakers accepted (176b) than had been anticipated.

I think that there are basically three ways to interpret this result.   The first possible interpretation is that my hypothesis that with result nominals, the external θ-role is suppressed is simply wrong.   The 3 speakers' judgments that (176b) is acceptable are performance errors of sorts.   However, I should add here that as far as these 3 speakers are concerned, the contrast in (176) appears to be fairly clear.   The second possibility is exactly the opposite.   That is, my hypothesis is utterly correct, but for some reason, many of my informants accidentally categorized (176b) as ill-formed. For example, the deverbal noun *evaluation* might not have been an ideal choice for this test, or sentence (176b) might not have been devised wisely enough to facilitate the result reading.   Finally, there is a possibility that my hypothesis is essentially right, but the outcome of the grammaticality judgments also reflects the truth about how language works.   For example, it might be that the suppression of the external θ-role in result nominals really exists but is optional, and perhaps is quite a marked operation.

At this stage, it is premature to determine which of the above possibilities is actually the case.   At any rate, further research is encouraged to investigates the structure associated with result nominals in relation to binding.[123]

2.9 Summary

The main points of this chapter can be summarized as follows.

1. Condition A of binding theory is reduced to the Chain Condition.
2. The local domain of anaphors is defined over syntactic predicates, which I refer to as the A-Chain Projection Domain (ACPD).
3. In order for an A-chain to be formed into the next syntactic predicate up, the lower syntactic predicate must be selected by the head of the higher one.

4. CP is not a barrier for A-chain formation.

5. The Chain Condition is a derivational condition.

6. VP inherently requires a subject.　If it does not have a subject of its own, then an item in the Spec of the IP that is an extended projection of the verb is regarded as its subject.

7. A genitive DP is not an argument of the head noun or verb.

8. Anaphors that are not in argument positions of syntactic predicates are governed by a set of discourse conditions.

9. There are two kinds of discourse factors: those characterized by what Kuno & Kaburaki (1977) call empathy and those that have to do with processing.　Each type of discourse condition is summarized in (177a) and (177b), respectively.

(177)a. The Summary of Empathy-Related Discourse Conditions:

The Surface Structure Empathy Hierarchy	subject > object > oblique
The Speech-Act Participant Empathy Hierarchy	first person > second person > third person
The Sentence Theme Condition	theme > non-theme
The Humanness Hierarchy	human > animate nonhuman > thing
The Definiteness Condition	definite > indefinite
The θ-Role Condition	Agent/Experiencer > Goal > Theme
The Genericness Condition	generic > non-generic

b. The Summary of Processing-Related Discourse Conditions:

The Explicitness Condition	explicit antecedent > implicit antecedent
The Closeness Condition	close antecedent > distant antecedent
The Directionality Condition	antecedent to the left > antecedent to the right
The Intrasentential Requirement Condition	antecedent in the same independent clause > antecedent in the conjugate coordinate clause > intersentential antecedent

10. There are two subtypes of so-called possessed *picture*-NPs.　In one variant, the genitive DP is base-generated in the possessor position, as in the case of *picture*, and in the other, such a DP is raised from the NP inside, as in the case of *criticism* (in the process reading).

Notes to Chapter 2

1. Note that NPs in the present section, as well as in section 2.3, correspond to what have later come to be called DPs. In addition, N''s and Ns in this section should probably also be understood as current D's and Ds, respectively. However, with respect to what I call nouns, they can be straightforwardly taken as nouns in the current sense.

2. For details of government, see Chomsky (1981).

3. Thus, for finite clauses, it is AGR and not their traditional subjects that are counted as their SUBJECTs.

4. The i-within-i condition prohibits something from being coindexed with what contains it, as shown in (i).

   (i) *$[... \alpha_i ...]_i$

This excludes examples such as the following.

   (ii)a. *There is [a picture of itself$_i$]$_i$ on the mantelpiece.

    b. *[The owner of his$_i$ boat]$_i$.

    (Chomsky 1981 (75ii) & (75iii) p.212)

5. PRO is both an anaphor and a pronominal simultaneously. This assumption is crucial in determining where this item can occur, which will be discussed directly in this section. Incidentally, pro does not exist in this framework.

6. The reference of this work is not provided in Chomsky (1981). I think that it might be by personal communication.

7. The exact wording of this clause in Chomsky (1981) is as given in (i).

   (i) A root sentence is a governing category for a governed element.

    (Chomsky 1981 (99) p.220)

Yet this cannot be taken literally and must be interpreted as stated in the text. Otherwise (i) would argue that the root sentence is the governing category for the anaphors in all the examples discussed so far.

8. In Chomsky (1981) this example is not starred. But judging from the discussion in the relevant part, I believe that it is a typo, and the sentence is probably intended to be ungrammatical.

9. Although Chomsky does not discuss it, another position where an NP-trace might show up is as the complement of a noun for which the Case-marking preposition *of* is missing, as in (i).

   (i) [$_{NP}$ America's$_i$ discovery t$_i$ by Columbus].

10. I suppose that the trace here is also governed by its antecedent, but in Chomsky (1981) antecedent government is only discussed in contexts in which the governor is a

coindexed NP in COMP (=Spec of CP in the current terminology).

11. Some authors treat this sort of example as grammatical (e.g. Manzini 1983, Fox 1993, Reinhart & Reuland 1993).   In fact, Chomsky (1982: fn.24) judges (i) to be well-formed, which is structurally equivalent to (17a) (see also Chomsky (1986b) for judgments along this line).

    (i) John$_i$ heard a story about him$_i$.   (Chomsky 1982 (vib) fn.24)

Lasnik & Uriagereka (1988) comment that such an example is somewhat deviant but substantially better than ungrammatical.   See also Keller & Asudeh (2001), who report that their subjects only marginally accepted this type of sentence in a psycholinguistic experiment.   Hestvik (1990), on the other hand, argues that this kind of sentence is well-formed when the *picture*-NP is specific, as in (ia), but ill-formed when it is nonspecific, as in (ib), though Diesing (1992: fn.4 ch.4) notes that they are both more or less acceptable to her.

    (i)a. John$_i$ saw those pictures of him$_i$

     b. ??/*John$_i$ saw a picture of him$_i$.

      (Hestvik 1990 (28a) p.73 & (27) p.72)

12. Reinhart & Reuland admit that the syntactic distribution of reciprocals appears to be identical to that of what they call SELF anaphors.   However, they restrict the discussion to reflexives in their paper, since reciprocals seem to involve additional complexity, say one accompanied by the interpretation peculiar to such elements.

13. Note that unlike Chomsky's (1986a & 1986b) Condition on A-Chains, which is a definitional condition, the Chain Condition here is a well-formedness condition.

14. In Chomsky (1986a & 1986b) antecedent-anaphor coindexations are not chains.

15. Although Chomsky's (1986b) BT-compatibility provides an account of why the complementarity between anaphors and pronouns breaks down in structures like (25a), it does not explain why it does so in structures like (25b).

16. In Reinhart & Reuland (1993), as well as in Fox (1993), which will be taken up in the next section, the VP-internal subject hypothesis (Fukui & Speas 1986, Kitagawa 1986, Koopman & Sportiche 1988, etc.) is not adopted.   Rather, it is simply stipulated that the subject is counted as an argument of the verb.

17. The latter part of this statement seems to be inconsistent with Reinhart & Reuland's own assumption in the paper that the *about*-PP is not an argument of the verb in the following examples.

    (i)a. We talked with Lucie$_i$ about herself$_i$.

     b. *We talked about Lucie$_i$ with herself$_i$.

      (Reinhart & Reuland 1993 (121a) & (121b) p.715)

18. A similar conclusion has already been reached by Partee & Bach (1981), Farmer (1984) and Farmer & Harnish (1987).

19. In fact, the condition is relativized to an index in its rigorous formulation, as shown in (i).

> (i) An i-reflexive semantic predicate is i-reflexive-marked.

A predicate is i-reflexive if (at least) two of its arguments share the same index *i*. A predicate is i-reflexive-marked if either the predicate head itself is lexically reflexive with respect to an i-indexed argument, or one of its i-indexed arguments is a SELF anaphor. The above is to ensure that the presence of a SELF anaphor bearing one index *j* would not license the coindexation of two arguments bearing a different index *i* in a three-place predicate as in (iia). Dutch sentence (iib) is a concrete example that demonstrates this point.

> (ii)a. *SUBJ$_i$ V SELF$_j$ SE$_i$.
>
> b. *Jan$_i$ wees mijzelf$_j$ aan zich$_i$ toe.
>
> Jan$_i$ assigned myself$_j$ to SE$_i$ prt
>
> 'Jan assigned me to himself.'

However, except for a few complex cases, the abbreviated version in (26) suffices to get the right results.

20. As will be discussed shortly, in Reinhart & Reuland's framework, an R-expression being "locally" A-bound is also a violation of the Chain Condition.

21. This is not so straightforward, however, since *speak* can also select for a *to*-PP, as indicated in (i)

> (i) Max$_i$ speaks to himself$_i$/*him$_i$.

One possible answer to this problem is to assume that the θ-role that *himself/him* bears in (i) is different from the one that *him* bears in (28a), whereby the two variants are not related to each other. Namely, while the former is a Goal, as suggested by the preposition *to*, the latter is a Theme, as suggested by the preposition *with*.

22. '*M* is an unstressed form of the personal pronoun *hem* 'him'. According to Jozefien Akkermans (pc), stressed pronouns are not well-formed in locative environments. This report, however, is inconsistent with (i), which Reinhart & Reuland provide as a grammatical example, even though *hem* is used as the complement of the locative preposition *voor* 'before'.

> (i) Klaas$_i$ duwde de kar voor hem$_i$ uit.
>
> Klaas$_i$ pushed the cart before him$_i$ out
>
> 'Klaas$_i$ pushed the cart before him$_i$.'
>
> (Reinhart & Reuland 1993 (70) p.690)

Akkermans does not agree with this judgment.

23. For discussion as to what is counted as a barrier, see Chomsky (1986a) and Rizzi (1990).

24. The reason why the Chain Condition does not rule out the pronouns in (31a) and (32a) is as follows.   A locative preposition has its own lexical meaning, and therefore, no thematic complex is formed between the verb and such a preposition.   According to Chomsky (1986a), an independent P constitutes a barrier for A-chain formation.   Hence, a pronoun in this context does not form an A-chain with an antecedent.

25. As with Condition B, Condition A is also relativized to an index in its accurate formulation.

26. Note that Reinhart & Reuland assume that structural accusative Case is assigned by the verb under government.

27. This "subject" does not have to be a θ-subject.   Thus, in (ia) the raised subject *Lucie* is treated as the subject of *seems*, and in (ib) expletive *it* is regarded as the subject of *(would) bother.*

> (i)a. Lucie seems to herself [t to be beyond suspicion].
>
> b. *Max thinks that it would bother himself that the place is so noisy.
>
> (Reinhart & Reuland 1993 (42a) & (42c) p.679)

Crucially, such non-θ-subjects are also counted as arguments of syntactic predicates. Hence, in (ia), for example, it follows that *Lucie* and *herself* are coarguments at the syntactic level.

28. Reinhart & Reuland state that this sentence is from Ross (1970), but I cannot find it in his article.   I happened upon an almost identical example, however, in Zribi-Hertz (1989), which is given in (i).

> (i) (Mary thought that) a picture of me/myself would be nice on the wall.
>
> (Zribi-Hertz 1989 (11b) p.698)

29. Reinhart & Reuland remark that this sentence is taken from Ross (1970).   However, as far as I can tell, it is not entered in that paper.   A somewhat similar example that I could find is sentence (i).

> (i) I told Albert that physicists like himself were a godsend.
>
> (Ross 1970 (23) p.230)

In fact, Ross's only example that contains an antecedentless second person reflexive like (42b) is (ii), which he reports is acceptable to just a few speakers.

> (ii) ??This paper was written by Ann and yourself.   (Ross 1970 (89) p.247)

As will be discussed in section 2.6.1, my survey also confirmed that it is somewhat more difficult to use a second person anaphor without a linguistic antecedent than a first person

anaphor.

30. Though according to Reinhart & Reuland, this sentence is what Zribi-Hertz (1989) quotes from an actual text, I cannot find it in her paper.

31. Reinhart & Reuland state that this sentence is cited from Zribi-Hertz (1989). However, once again, it cannot be found in her paper.

32. Although lexically reflexive predicates like *wash* are no doubt reflexive-marked, it is not obvious from Reinhart & Reuland's (1993) discussion whether they are really reflexive.   Their definitions of reflexive predicate and reflexive-marked predicate are provided below for reference.

> (i)a. A predicate is reflexive iff two of its arguments are coindexed.
>
> b. A predicate (formed of P) is reflexive-marked iff either P is lexically
>
> reflexive or one of P's arguments is a SELF anaphor.
>
> (Reinhart & Reuland 1993 (40c) & (40d) p.678)

If *wash* is not reflexive, then sentence (49b) would be excluded by Condition A in the same way as (49a).

33. Reinhart & Reuland (1993: fn.53) respond to this problem as follows.   If a verb is reflexive, then it must have, lexically, two positions on its grid.   Thus, it should be the case that in *John washed*, just like in *John washed himself*, an object argument is projected, which is realized as some silent category.   If that is the case, then (49b) actually does contain a two-member chain, as illustrated in (ii), which does not abide by the Chain Condition, because its head is -R *himself*.

> (ii) *Himself$_i$ washed e$_i$.

34. Fox (1993) suggests a revision of Reinhart & Reuland's Condition B as well, but I will not adopt this proposal.

35. In Uchiumi (2003) I argue that "non-local" anaphors, such as Chinese *ziji* and Japanese *zibun*, at least those taking a "long-distance" antecedent, are logophors. Similar arguments are made by Chen (1992) about "long-distance" reflexives in Mandarin Chinese, by Kameyama (1984 & 1985) about those in Japanese and by Maling (1984) about those in Icelandic.

36. It is also usually assumed that PRO is +R.   However, as will be argued in section 3.4.1.2, I do not share this assumption.   See also Uchiumi (2003) on this issue.

37. The A-chain domain and the ACPD are both to be understood as describing the same relation, but from different perspectives.   To put it another way, they are converse concepts of each other.   The A-chain domain of a certain element is specified below this element as the A-chain extends in a downward progression.   The ACPD, on the other hand, selects for an area above the element as the A-chain advances upwards.   Thus, in

(i) it can be said that *herself* is in the A-chain domain of *Laura*, but the latter is in the ACPD of the former.

(i) Laura loves herself very much.   (Also appeared as (7a) ch.1 p.2)

38. This is reminiscent of phases and the Phase Impenetrability Condition (PIC) in Chomsky (2000 & 2001).   However, I am agnostic as to whether I want to claim that as far as A-chain formation is concerned, phases are syntactic predicates.   I believe that a syntactic predicate is a basic unit for operations involving A-chains, but I am not sure if it is a chunk transferred to the interfaces as it would be if it were a phase.

39. Possibly, as argued in Emonds (1976), Stowell (1981) and Iwakura (1991, 1994 & 1995), the *that*-clause in this context further moves to some non-argument position.   The main reason why it is so considered is because such a clause does not undergo subject-aux inversion very naturally, as indicated in (ib) (its affirmative counterpart is given in (ia)).   Also, observe (ic), where the clause in question is embedded in the subject DP.

(i)a. That Mary had stolen it was surprising to them.

b. ?Was that Mary had stolen it surprising to them?

c. Was the fact that Mary had stolen it surprising to them?

Or alternatively, as proposed in Koster (1978) and Haegeman & Gueron (1999), the *that*-clause is base-generated in the fronted position, in which case the Spec of IP and Spec of VP in the matrix clause must be filled with some null element.   However, the illustrated phenomenon can also be explained by the constraint suggested in endnote 40 without adopting the non-argument analysis.   Note especially that contrary to the previous authors' reports, the application of subject-aux inversion to the clausal subject in (ib) is not completely ill-formed according to my informants.

40. Actually, as briefly touched on in Uchiumi (2005b: fn.2), there might exist a PF constraint to the effect that clausal material must be a peripheral element in a clause or a nominal.   Consider the following paradigm.   Note that a *that*-clause does not need Case, as evidenced by the grammaticality of the extraposed variant in (ic).

(i)a. *[$_{IP}$ It [$_{VP}$ [that a lot of great books are easily accessible to anyone] helps children's development]].

b. [$_{IP}$ [That a lot of great books are easily accessible to anyone]$_i$ [$_{VP}$ t$_i$ helps children's development]].

c. [$_{IP}$ It [$_{VP}$ t$_i$ helps children's development] [that a lot of great books are easily accessible to anyone]$_i$].

If this condition is real, then example (60) with structure (59) would violate it as well.

41. An obvious alternative is to dismiss May (1985) and Chomsky (1986a)'s assumption

about dominance.   That is, we suppose that so as to be counted as being dominated by something, simply dominance by a segment of it is sufficient.   Then the embedded IP in (61b) is dominated or contained by the matrix VP, and the ACPD of the trace in question is this syntactic predicate.

42. Reinhart & Reuland adopt the idea from Ben-Shalom and Weijler (1990) and Voskuil (1991) that eventhood is critical for a head to form a syntactic predicate.

43. In fact, this is an abridged version of the explanation.   To be exact, I postulate the structure of (64a) as in (i) in accordance with the VP-internal subject hypothesis.

$$\text{(i) } [_{IP(=SP)} \text{ John}_i \ [_{VP(=SP)} \ t_i \text{ heard } [_{IP(=SP)} \text{ himself}_i \ [_{VP(=SP)} \ t_i \text{ criticize Mary}]]]].$$

That is, there actually exists a syntactic predicate headed by V right below each IP with the trace of the subject in the Spec of VP.   Therefore, the A-chain relation between *himself* and *John* is not direct but via the trace of the latter.   Note that the matrix subject is appropriately in the ACPD of its trace, which, in turn, is in the ACPD of the reflexive. However, for the rest of this chapter, unless it is relevant to the discussion, I will not address such a VP syntactic predicate and pretend that the IP is the only syntactic predicate in an IP constituent, in whose specifier the subject is base-generated.   Also, when the selection condition, introduced in section 2.5.1.2, is not particularly mentioned, readers should assume that it is properly satisfied.

44. I assume, as is standard, that *otagai* is basically a local reciprocal anaphor (e.g. Ueda 1984, Yang 1984, Kitagawa 1986), though it may also have a discourse-related use. Hoji (1998 & 2003) and Ueyama (1998) challenge this assumption, showing that the antecedent of *otagai* need not be linguistically expressed, that the antecedent (if present) need not be in the "local" domain of *otagai*, nor does it have to c-command *otagai*, and that even split antecedents are possible with *otagai*.   Although their claim is very interesting, I do not think that it is conclusive.   First, they sometimes use examples with *otagai* that is not in an argument position of a syntactic predicate.   Also, they occasionally base their argument on examples producing only what they call the "group reading", which is not typical of reciprocals (see endnote 48).   Furthermore, I find some of their examples to be fairly marked.

45. Although the suffix *-ta* is usually glossed as 'past' in the literature, I assume, following Miller (1975) and Kunihiro (1980), that it is a perfective aspect marker, whose tense interpretation is derived from its aspectual meaning.   This morpheme contrasts with *-ru*, which carries a nonperfective meaning.   See also Hasegawa (1999) for a concise summary of this issue.

46. One might wonder if the anaphors in (72) abide by the selection condition in (63).   I assume two kinds of selections: direct selection and indirect selection.   a head X directly

selects a maximal projection YP iff YP is the complement of X.   On the other hand, X indirectly selects YP iff there is a functional head F, where the complement of X is the maximal projection of F, and YP is the complement of F.   These concepts are probably easiest to grasp with the trees in (i).

(i)a. Direct Selection   b. Indirect Selection
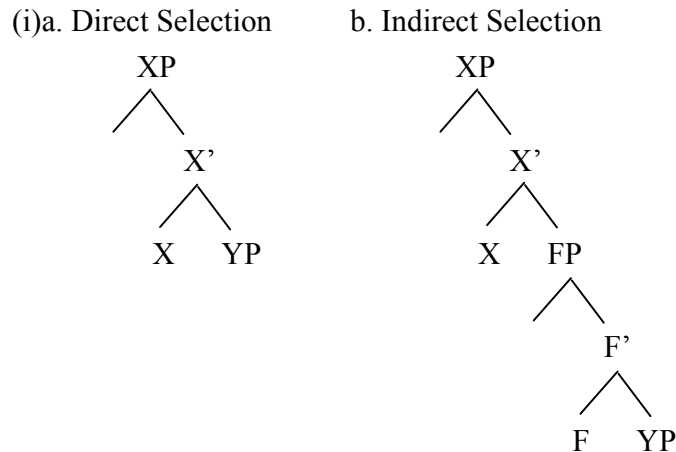
Therefore, in (72a) and (72b) the matrix verbs do not *directly* select the embedded syntactic predicates but still *indirectly* select them via the complementizers *-to*.   Note that (63b) does not necessarily require a direct selection.   Thus, in the examples at issue, the antecedents are still in the ACPD of the anaphors by (63).

47. Nominative *kare-zisin* (and *kanozyo-zisin* 'her-self', *karera-zisin* 'them-selves', etc.) sometimes permits a long-distance antecedent in its emphatic use.   Such an emphatic use seems to be most natural when the verb of which the anaphor is the subject is agentive, as in (i).   (Note that in (73a) the relevant verb is non-agentive 'become tired', and thus, *kare-zisin* is ill-formed.)

(i) Itirou-wa   [keisatu-ga   [kare-zisin-ga   sore-o   nusun-da]-to
    Itirou-Top [police-Nom [him-self-Nom   it-Acc   steal-Perf]-Comp
    niran-de-i-ru]-to   mi-te-i-ta.
    suspect-Prt-Prog-Nonperf]-Comp   see-Prt-Prog-Perf
    'Itirou understood that the police were suspecting that he himself had stolen
    it.'

The morpheme *zisin* can be exploited to merely make the subject emphatic.   Therefore, it can occur in a simple sentence like (i), and besides, the subject need not be a pronoun.

(ii) Itirou-zisin/Kare-zisin-ga   tukare-te-i-ru.
     Itirou-self/him-self-Nom   become.tired-Prt-Prog-Nonperf
     'Itirou himself/He himself is tired.'

Curiously enough, in the above context, the verb does not have to be agentive, as can be seen from the example.

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48. This sentence is marginally acceptable in the so-called "group reading", which is, 'they$_i$ understood that the police suspected that they$_i$ had (cooperatively) stolen it'.   Such a "group interpretation" is more prominent in example (i).

> (i) Karera-wa [keisatu-ga   [otagai-ga   kyouryokusi-te sore-o
>
> they-Top [police-Nom [each.other-Nom   cooperate-Prt   it-Acc
>
> nusun-da]-to   niran-de-i-ru]-to   kanzi-te-i-ta.
>
> steal-Perf]-Comp   suspect-Prt-Prog-Nonperf]-Comp   feel-Prt-Prog-Perf
>
> 'They$_i$ felt that the police were suspecting that they$_i$ had cooperated to steal it.'

This sort of interpretation is ignored here.

49. This construction is not quite well-formed in (at least some dialects of) British English, unless *for* is taken out (incidentally, the variant without *for* is grammatical in American English as well).

50. The structure of the *long*-construction is a little different from that of the *prefer*-construction.   In the former, it is not the case that the verb directly selects a *for ... to*-infinitive as its complement.   Rather, as Bresnan (1972) argues, *long* first takes a PP complement, whose head, in turn, subcategorizes for an infinitive with *for*.   We can catch a glimpse of this underlying structure by pseudo-clefting example (74b). Compare the pseudo-cleft sentences in (i) with those in (ii).

> (i)a. What I long for is for my son to take over this business.
>
> b. *What I long is for my son to take over this business.
>
> (ii)a. *What I would prefer very much for is for my son to take over this
>
>   business.
>
> b. What I would prefer very much is for my son to take over this business.

The examples in (i) demonstrate that there is a preposition *for* after *long at the underlying level*, whereas those in (ii) indicate that no such preposition exists after *prefer*.   This preposition, however, is deleted at the surface level.   It appears that English has a general PF constraint that precludes a preposition from occurring right before a CP; if such a representation is obtained, then the preposition gets deleted.   Observe the examples below.

> (iii)a. What he was content with was [$_{CP}$ to teach in a small college in a rural
>
>   area].
>
> b. He was content [$_{CP}$ to teach in a small college in a rural area].
>
> (iv)a. What we were very surprised at was [$_{CP}$ that she accepted the proposal].
>
> b. We were very surprised [$_{CP}$ that she accepted the proposal].

In the case of the *long*-construction, the deleted preposition happens to be *for*.

51. *Arrange* seems to be ambiguous between the type that selects an infinitival clause via

the preposition *for* like *long* and the one that directly takes a CP complement like *prefer*. Thus, it allows both kinds of pseudo-clefts, as shown in (i).

> (i)a. What we have arranged for is for Mike to pick you up.
>
> b. What we have arranged is for Mike to pick you up.

However, when the clausal complement is directly selected, *arrange* differs from *prefer* in that it cannot optionally take an infinitive without *for*, as indicated in (ii).

> (ii) *We have arranged Mike to pick you up.

52. Again with the *intend*-construction, *for* must be left out in (some dialects of) British English, as shown in (i).

> (i) I intend my son to take over this business.
>
>   (British English √/American English *)

Yet the situation with this construction is more complicated than that with the *prefer*-construction.   First, in American English, the variant without *for* is ungrammatical, as indicated above.   However, both for American English speakers and for British English speakers, the pseudo-cleft paradigm of this construction is the same, which is given below.

> (ii)a. *What I intend for is for my son to take over this business.
>
> b. What I intend is for my son to take over this business.

This suggests that *intend* directly selects an infinitival clause rather than via the preposition *for*.   The difference between American English and British English is that in the former, the complement is a *for ... to*-infinitive, whereas in the latter, it is an infinitive without *for*.   In (iib) *for* must be there even in British English, because in the pseudo-cleft variant, the infinitive does not occupy the complement position of *intend* (the trace of *what* does), whereby it must be the default form.   The default status of an infinitive with *for* when it contains an overt subject can be observed in the following examples, where the infinitives are not subcategorized for by thematic verbs.

> (iii)a. For the students to study hard is important for their future.
>
> b. *The students to study hard is important for their future.
>
> (iv)a. My wish is for people all over the world to live in peace.
>
> b. *My wish is people all over the world to live in peace.
>
> (v)a. They moved to a quiet residential area for their kids to go to a better school.
>
> b. *They moved to a quiet residential area their kids to go to a better school.

53. Actually, I believe that the infinitival clause is still CP in desiderative constructions (and in the *intend*-construction in British English) even when *for* is absent, as in (i).

> (i) I would prefer my son to take over this business.

Thus, I assume, following Bresnan (1972), Chomsky (1981) and Snyder & Rothstein

(1992), that the structure of (i) is as depicted in (ii), where the null variant of *for* Case-marks the infinitival subject as accusative.

(ii) I would prefer [$_{CP}$ φ$_{for}$ [$_{IP}$ my son to take over this business]]

This explains why the complement subject of a desiderative does not undergo passivization even if the matrix verb is passive. Compare (iii) with (ivb), which is the passive counterpart of (iva).

(iii) *Everyone would be preferred to come.

(iv)a. We believe everyone to be smart.

  b. Everyone is believed to be smart.

In (iii), since the infinitival subject gets Case from the null complementizer, it does not have to move to satisfy the Case Filter even if the Case-assigning ability of the matrix verb is absorbed. Hence, (iii) violates the principle of "movement as a last resort", which says that elements move only if demanded by the grammar (see also section 2.5.2.4). Desideratives, however, allow impersonal passivization as in (v), which does not involve movement.

(v)a. It would be preferred for everyone to come.

  b. *It would be preferred everyone to come.

Note that in this environment, the complementizer must be phonologically realized, as evidenced by the ungrammaticality of (vb). A similar requirement can be observed with impersonal passives with finite complements. Consider the examples below.

(vi)a. We believe that everyone is smart.

  b. We believe everyone is smart.

(vii)a. It is believed that everyone is smart.

  b. (*)It is believed everyone is smart.

As can be seen in (vi), *believe* can normally select for either a finite clause with an overt complementizer or one without it. But at least in some dialects, the complementizer *that* must be phonologically present in the impersonal passive variant, as indicated in (vii).

54. A reflexive in this context is more or less marked. I assume that here, a more general version of the Avoid Pronoun Principle (Chomsky 1981) is at work (see Martin (1996, who discusses this possibility). In its original formulation, this principle forces the choice of a null element over an overt pronoun. But as argued in Uchiumi (2005b: fn.6), I suspect that it is more general to the effect that where a null alternative is available, the use of an overt element should be avoided, unless there is a special reason to do so. In the context of (76), PRO can be used instead of (*for* plus) a reflexive for the same interpretation.

55. The material presented in this subsubsection is published in Uchiumi (2006).

56. Woolford (1999: fn.6) has already mentioned that people sometimes exploit a reciprocal in the subject position of a tensed clause in English. However, she puts aside such examples as being marginal.

57. As Lisa Travis (pc) points out, it appears that many speakers also accept sentences with *oneself* in the subject position of a finite clause as in (i).

> (i) %One often thinks that oneself is intelligent. (Uchiumi 2006 (8) p.4)

At first sight, this seems to be fatally contradictory to what I have argued for in this subsubsection. However, closer examination reveals that it is not necessarily the case. That is, for those who accept (i), *oneself* can also be marked as genitive, as shown in (ii).

> (ii) %One often hides oneself's weaknesses. (Uchiumi 2006 (9) p.4)

Thus, I believe that *oneself*, though reflexive, is exceptionally neutral in terms of Case, perhaps due to its generic nature. Therefore, I can still retain the idea that English reflexives, except for *oneself*, are prespecified as accusative in the lexicon.

58. The idea is that with respect to the copula, for example, the paradigm in (ia) is not a theoretical primitive but is derived from the system given in (ib).

> (i)a. The Conjugational Paradigm of the English Present Tense Copula:

I am	we are
you are	you are
he/she/it is	they are

> b. The System that Derives the Paradigm in (ia):

I am
he/she/it is

> otherwise → are

Such an approach appears to be both conceptually and empirically superior to one where the paradigm is taken to be primitive (Jonathan D. Bobaljik: class lecture, McGill University, Winter 2000). It is conceptually better because in this way, the weird distribution of *are* can be more naturally explained. It is empirically better as well, since it can correctly predict the occurrence of *are* when a regular form is blocked for whatever reason. For example, consider the following pair of first person negative tag questions.

> (ii)a. *I am smart, amn't I?
> b. I am smart, aren't I?
> (Uchiumi 2006 (ia) & (ib) fn.3)

In standard English, as can be seen in (iia), the form *amn't* is not available for some reason.   In such a context, *are* indeed shows up, as indicated in (iib).   This is not predicted by the paradigmatic approach.

59. Lisa Travis (pc) wonders why the sentence below is completely ungrammatical and not marginal in the approach proposed here.

(i) *The boy are intelligent.   (Uchiumi 2006 (i) fn.4)

I think that the difference between (81b) and (i) is clear enough.   That is, while in the former, the subject DP lacks a number feature (for both types of speakers), in the latter, *the boy* has a singular feature.   Yet I am still uncertain how to implement this observation into my theory, because it is generally assumed that φ-features on N are interpretable and do not cause the derivation to crash.

60. I put ECM constructions aside, because they are fairly marked, and it is not the case that they are found in all languages.

61. Some might argue that *John* in (69a) should be able to raise to the Spec of the matrix IP to meet the requirement of the Extended Projection Principle (EPP) (Chomsky 1982). They might continue that thus, why the sentence is bad should ultimately be attributed to the movement across a CP boundary.   However, it appears that an already Case-marked DP cannot be moved to satisfy the EPP anyway, as illustrated below (see also Chomsky (1993) on this issue).   Note that in (i) the movement does not cross the CP boundary.

(i) *John$_i$ seems to t$_i$ [$_{CP}$ that he is intelligent].   (Uchiumi 2006 (i) fn.5)

This is presumably because the principle of "movement as a last resort" must be implemented in terms of Greed (Chomsky 1993) (but see Lasnik (1995a & 1995b) for a different interpretation of "Last Resort", which is called Enlightened Self-Interest). According to the principle of Greed, an element cannot enter into a syntactic operation unless there is a need to do so on the part of that element itself.   In both (69a) and (i), the demand from the EPP that the matrix subject position should be filled is external to *John* and thus cannot serve as a reason for this DP to move.

62. This is the consequence when Fox's (1993) version of the Chain Condition is applied. As mentioned in section 2.3, in Reinhart & Reuland's (1993) system, single member chains do not exist.   Thus, their version of the Chain Condition is irrelevant to *she* and the trace in (88).   Yet the fact still remains that these two elements do not violate any grammatical constraints.

63. This is modeled on Reinhart & Reuland's (1993) General Condition on A-Chains, given in (i), which is a representational condition.

(i) A maximal A-chain (α_1, ..., α_n) contains exactly one link -- α_1 -- that is both
+R and Case-marked.   (Reinhart & Reuland 1993 (80) p.696)

64. Some might argue that *Bill* in (92) can be regarded as some sort of subject, say in Larson's (1988) framework.   Unfortunately, English does not have a reliable diagnostic for subjecthood, as far as I know.   Yet in other languages, the indirect object in double object constructions usually does not show behavior typical of canonical subjects.   For example, in Japanese, the reflexive *zibun* is subject-oriented, as indicated in (i).

(i) Watasi$_i$-ga   kare$_j$-o   zibun$_{i/*j}$-no   heya-de   nagut-ta-koto.

me$_i$-Nom   him$_j$-Acc   self$_{i/*j}$-Gen   room-at   hit-Perf-matter

'That I hit him$_j$ in my/*his$_j$ room.'

However, as can be seen in (ii), *zibun* cannot take the indirect object as its antecedent in double object constructions.

(ii) Watasi$_i$-ga   kare$_j$-ni   syasin-de   zibun$_{i/*j}$-o   simesi-ta-koto.

me$_i$-Nom   him$_j$-Dat   picture-at   self$_{i/*j}$-Acc   indicate-Perf-matter

'That I showed him myself/*himself in a picture.'

This contrasts sharply with productive causative constructions like (iii), which are claimed to be biclausal (Shibatani 1976).   Here, the dative DP is clearly the subject of the embedded clause and can serve as the antecedent of *zibun*.

(iii) Watasi$_i$-ga   [kare$_j$-ni   zibun$_{i/j}$-o   urikom]-ase-ta-koto.

me$_i$-Nom   [him$_j$-Dat   self$_{i/j}$-Acc   market]-Caus-Perf-matter

'That I made him market me/himself.'

65. Note that though *himself* first merges with H, it is still an argument of *showed* (i.e. Theme), which must be the case in order for *John* and *Bill* to be in its ACPD.   So whatever this head may be, it simply functions as a transmitter of a θ-role from the verb to its complement just as the preposition *with* does in *speak with* (vid. (28)).

66. Huang (1993) explains a contrast such as the one in (95) by assuming that the fronted predicative element contains a trace of the subject, which is the only possible antecedent of the anaphor.   In the present approach, this assumption is no longer needed.

67. Unlike the standard analysis, in which auxiliaries such as passive *be*, perfective *have* and progressive *be* form VPs, I assume that they head functional projections, which I provisionally call aspect phrases (AspPs).   As will be crucial to my analysis later, AspP, as well as IP, is an extended projection of the verb in the sense of Grimshaw (2000 & 2005).   According to Grimshaw (2000), a projection YP is an extended projection of a head X if the five conditions in (i) are met.

(i)a. YP dominates X.

b. YP and X share the same categorial features.

c. All the intervening nodes between YP and X share the same categorial features.

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d. No node intervening between YP and X is lexical.

e. The functional status of YP is different from that of X.   (For example, the functional status of C is higher than that of I, which is higher than that of V.)

68. One might think that this prediction can be tested by simply replacing *John* in (99) with an anaphor, as in (i).

(i) *Mary was kissed by myself.

However, aside from the issue of whether a *by*-phrase is an argument or not, the above sentence is not suitable for the present diagnostic.   Namely, as Kuno & Kaburaki (1977) discuss, the first person can hardly be expressed in a passive *by*-phrase except in the contrastive reading.   Thus, in (iib), where the neutral reading is forced by 'What happened?', Speaker B's utterance is quite awkward, though it does not contain any anaphoric element.   Compare this example with (iia) and (iic).

(ii)a. A: What happened?

B: Mary was kissed by John.

b. A: What happened?

B: ??Mary was kissed by me.

c. A: What happened?

B: I kissed Mary.

69. One speaker commented that this sentence would not be well-formed if the DP *the media*, which intervened between the reciprocal and its antecedent, was replaced by an animate DP, say *Coppola*.   For the explanation of such a phenomenon, refer to the discussion in section 2.6.

70. In Fox's original example, the determiner attaching to the noun *basis is* the demonstrative *that*, as indicated in (i).

(i) The arguments that John and Mary presented were that basis for each other's articles.

However, I have taken the liberty to change it to the simple definite article *the* in (110b), since the sentence sounds much more natural in that way.   I am not sure if this was a typo or was something that Fox actually intended.

71. Again, according to one speaker, this sentence would be completely ill-formed if *Scotland Yard*, which intervenes between the reciprocal and its antecedent, is replaced by an animate DP.   See also endnote 69.

72. As an aside, with the construction where V-ing is followed by the preposition *of* as in (i), I assume in agreement with Barker (1995) that the verb is completely turned into a nominal.

(i) Shakespeare's stabbing of Caesar is more interesting than Marlowe's.

(Barker 1995 (26a) p.65)

This is evidenced by the fact that the form in question accepts an adjective, as shown in (iia), but refuses an adverb, as can be seen in (iib).

(ii)a. Shakespeare's brutal stabbing of Caesar.

b. *Shakespeare's brutally stabbing of Caesar.   (Barker 1995 p.65 l.18-19)

73. Williams (1982), Barker (1995) and Asudeh & Keller (2001) have already argued that the possessor of a possessed DP is not a subject of the head noun.   Here, I extend this analysis to possessed gerunds as well.

74. Actually, with possessed gerunds as in (111a), (111b), (112b), (113b) and (114b), I assume that the DP marked as genitive starts out in the Spec of VP as a subject and then escapes to the possessor position, which I claim to be a non-argument position.   This will be discussed in detail in section 2.8.

75. This sort of sentence is starred in most of the previous literature (e.g. Fiengo & Higginbotham 1981, Bowers 1987, Mahajan 1992, Campbell 1996, Gavruseva 2000). Diesing (1992) follows this line and rates it with a *?.   However, my informants were not so harsh in their judgment on (115b).   Actually, some of them gave it even a full check.   See Erteschik-Shir & Lappin (1979), who treat this type of example with a ?. See also Chomsky (1973: fn.19) and Kluender (1992), who note that sentences like (115b) are not as bad as those like (115c).

76. I am grateful to Kyle Johnson (pc) for pointing out this fact.

77. Davies & Dubinsky (2003) suggest, examining various data, that several factors are involved in the determination of extraction possibilities.   Among other things, they adopt Bowers's (1987) idea that nominals like *the picture* are DPs, which are opaque to extraction, while those like *a picture* are QPs/NPs, which are transparent to such an operation.   However, although their proposal may explain the contrast between (115a) on one hand and (115b) and (115c) on the other, (assuming that *a girl's picture* is DP rather than QP/NP), it does not enlighten us on the contrast between (115a) and (115b) on one hand and (115c) on the other, which I take to be more striking.

78. Some authors argue that in sentences like (115), the *wh*-phrase actually goes through the Spec of DP as an escape hatch (e.g. Cinque 1980, Stowell 1989, Campbell 1996). However, I am neutral with respect to such a view.

79. I do not know why (115b) is a little awkward for some speakers, since *the* does not occupy an A'-position.   Maybe this has to do with the definiteness effect, mentioned above.   But whatever the reason may be, the contrast between (115b) and (115c) still seems to be clear even to those who accept the former only marginally.

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80. As indicated by the mark, (119b) is not completely ungrammatical for some speakers. At this point, I have no clue why this is the case.

81. Some might wonder why the sentences are still bad even if the anaphors in (119a) and (119b) are replaced by pronouns, as shown in (i).

      (i)a. *[John and Bill]$_i$ are afraid that them$_i$ being dishonest might hurt their relationship.

        b. ??/*[John and Bill]$_i$ are afraid that for them$_i$ to be dishonest might hurt their relationship.

This is due to the Avoid Pronoun Principle, which is exemplified by the contrast in (ii) (see also endnote 54).

      (ii)a. *For him$_i$ to be dishonest might hurt John$_i$.

        b. PRO$_i$ To be dishonest might hurt John$_i$.

Namely, in (iia) the use of an overt pronoun is blocked due to the existence of a PRO counterpart with the same interpretation, given in (iib). By the same token, (ia) and (ib) are ill-formed because there also exist synonymous null counterparts with PRO, as indicated in (iii).

      (iii)a. [John and Bill]$_i$ are afraid that PRO$_i$ being dishonest might hurt their relationship.

        b. [John and Bill]$_i$ are afraid that PRO$_i$ to be dishonest might hurt their relationship.

82. In Optimality Theory (OT), originated by Prince & Smolensky (1993), grammatical constraints are also considered to be violable. I do not share this assumption.

83. Kuno & Kaburaki (1977) have already argued for the nonuniversality of empathy-related discourse factors. For an outline of what empathy is, see section 2.6.1. See also Cole et al. (2001) on this issue.

84. Discourse conditions are universal in the sense that the first person is more empathized with than the third person in all languages, for example. However, whether this condition is more important than another discourse condition, say the referent of an Experiencer is more empathized with than that of a Theme or Goal, differs considerably among languages/dialects/speakers.

85. It seems that Kuno & Kaburaki (1977) believe that all reflexives, whether they are in argument positions of syntactic predicates or not, are conditioned by empathy. However, I think that this is overstepping the mark.

86. Actually, in Kuno & Kaburaki (1977) what is placed lowest in the hierarchy is a passive *by*-Agent. Yet in this thesis I tentatively extend it to obliques in general based on examples such as (i).

(i) *That John had hit Bill beside Mary depressed the teacher and herself.

Also, Kuno & Kaburaki mention that it is practically impossible to empathize with the referent of a passive *by*-Agent.   However, I moderate this wording as in the text, since there are, in fact, some sentences where such an element serves as a logophoric antecedent (see (132a), for example).

87. Note that a true anaphor always requires an antecedent even if it is first person, as evidenced by the ungrammaticality of (i).

(i) *The queen invited myself for a drink.

88. Lisa Travis (pc) suggests that the reason why (125b) is bad may have nothing to do with the reflexive.   She suspects that it may be because object-Experiencer psychological verbs like *please* are incapable of taking an indefinite object.   While this remark indeed has some point, I do not believe that it is the main factor for the ill-formedness of (125b).   First, most of my informants accepted (i), which has an indefinite object but no reflexive.

(i) (?)Pictures of beautiful scenery pleased a woman.

Indeed, there were a few who did not give a full check to the above sentence.   Yet this is presumably due to the following reason.   As will be argued in the next subsection, with object-Experiencer psych-constructions, the speaker's empathy is mostly laid on the referent of the object.   However, if an indefinite expression is used as the object, then the empathy that its referent attracts is very conservative.   As a result, in the above example, it is in a sense ambivalent whether the one who is referred to by *a woman* is empathized with or not.   Thus, for those who rejected (i) as being awkward, the sentence should improve if this empathy ambivalence problem is resolved.   As expected, they found (iia) to be well-formed, where the speaker's empathy towards the referent of the object is reduced by having the context signal that the theme of the relevant clause is the subject *pictures of beautiful scenery*.

(ii)a. John brought a lot of pictures to the party.   Pictures of football pleased a man, and pictures of beautiful scenery pleased a woman.

b. John brought a lot of pictures to the party.   ??Pictures of football pleased a man, and pictures of herself pleased a woman.

On the other hand, (iib) was still judged to be fairly degraded, because although it embraces no empathy ambivalence, *a woman* is even less qualified as the antecedent of the logophor.

89. Belletti & Rizzi (1988) propose that object-Experiencer psych-verbs like *please* are associated with a peculiar underlying structure, which ultimately explains a contrast like the one in (127).   For counterargument to such an approach, see section 2.7.   See also

section 4.4.2.1 for a relevant issue.

90. In the present thesis I tentatively assume that the object DP of *help* bears a Goal role rather than a Theme role. As a piece of evidence to support this conjecture, note that in some languages such as German, the object of the verb equivalent to *help* is not expressed in accusative, but in dative, which is typical of Goal arguments. Consider the examples in (i).

> (i)a. *Hans   half   mich.
>
>   Hans.nom   helped   me.acc
>
>   'Hans helped me.'
>
>   b. Hans   half   mir.
>
>   Hans.nom   helped   me.dat
>
>   'Hans helped me.'

91. I do not suppose that even if a definite DP is used generically, as in (i), it is doubly empathized with for its definiteness and genericness.

> (i) The dinosaur became extinct 65 million years ago.

Namely, the Genericness Condition is only applicable when a DP is not morphologically marked as definite. If this hypothesis is correct, then it might make more sense to assume that indefinites and bare plurals with generic denotations are simply definites of sorts in semantics and/or pragmatics (see Carlson (1977) for a similar view about generic bare plurals). However, I will put aside this possibility in this thesis.

92. I am neutral with respect to the issue of whether such an implicit Agent is syntactically projected or simply active in semantics.

93. It is possible that this condition is empathy-related rather than processing-related. That is, an explicit element draws more of the speaker's empathy than an implicit element and thus is better qualified as a logophoric antecedent. Although this may ultimately prove to be the accurate classification, I tentatively categorize the Explicitness Condition as a processing-related discourse condition, since so far, I have not found any evidence to suggest that it interacts with other empathy-related phenomena.

94. According to Fox (1993), sentence (i), whose construction is equivalent to that of (133a), is fully well-formed (see also Fox & Nissenbaum (2004), who report that similar examples with reciprocals are marginally acceptable).

> (i) Max said that Lucie saw a picture of himself.
>
>   (Fox 1993 (7b) p.4)

However, most of my informants judged the above example to be quite degraded, and the result that Fox reports was not able to be replicated in my survey.

95. This sort of effect is not observed with true anaphors, as evidenced by the

ungrammaticality of (ib), which should be compared with (ia).

> (i)a. *Laura believes that Jim loves herself very much.
>
>> (Also appeared as (7b) ch.1 p.2)
>
> b. *Jim loves, Laura believes, herself very much.
>
> c. ?Jim loves, Laura believes, Mary very much.

Note that though a little awkward, a parenthetical is, in principle, possible with this construction, as can be seen in (ic).

96. Copular VPs (CVPs), unlike LVPs, do not appear to add much distance. Compare sentence (ia) with (ib), which differs from the former only in that its embedded verb is a copula.

> (i)a. ??Mary thought that this little baby would [LVP bump into the spitting image of herself on the street].
>
> b. Mary thought that this little baby would [CVP be the spitting image of herself].
>
> c. ??Mary thought that this little baby would [LVP want to [CVP be the spitting image of herself]].

While (ia) is ill-formed, minimally different (ib) is not. Therefore, a CVP is not counted as a boundary in the relevant representation. As expected, if a control verb like *want*, which is lexical in nature, is squeezed into the subordinate clause in (ib), then the sentence is degraded, as shown in (ic).

97. A parenthetical is literally included in a pair of parentheses in the relevant representation. This is because boundaries occurring within such an expression are counted as actual boundaries only from the perspective of elements inside this expression. For example, whereas the LVP-boundary induced by *thought* in (135b) is an actual boundary between *Peggy* and the elements on its right, it does not function as a boundary between *Dan* and the elements on its right. To appreciate this effect, consider the examples in (i) in comparison with those in (133b) and (134a).

> (i)a. Dan sold, Peggy thought, pictures of himself.
>
> b. Dan, Peggy thought, sold pictures of himself.

The above sentences are well-formed. That is, the parentheticals standing in the middle do not interfere with the logophoric relation between *Dan* and *himself*. This is different from the situation in (133a), in which the logophoric relation between *Peggy* and *herself* is interrupted. Also, an LVP in a parenthetical is marked with a left bracket alone, since it is incomplete in a sense, lacking a complement.

98. Note that distance is calculated in terms of how many boundaries the two elements are separated and not in terms of how many DPs and LVPs intervene between them.

Thus, the DP *Dan* in (135a) does not add to the distance between *Peggy* and *herself*.

99. This does not mean that an intersentential antecedent is absolutely prohibited. In particular, such an antecedent is often possible when a sentence containing a logophor has no animate DP, as in (i).

>   (i) Max$_i$ showed up at Buckingham Palace. A few pictures of himself$_i$ were on
>   display there.

This phenomenon can be understood as follows. Namely, since there is no good potential antecedent in the sentence containing the logophor, the qualification of a DP in the preceding sentence as the antecedent is relatively raised. See also section 2.6.4 for this sort of effect.

100. If this sort of approach is correct at all, then I believe that the evaluation of candidates takes place independently of grammaticality. Thus, in determining the antecedent of the logophor in (125a), *the woman* competes with the linguistically unexpressed first person and second person, for example, whose persons do not match that of *herself*. If the winner of a discourse competition is not grammatically licensed, then the sentence would be excluded.

101. Note that this problem cannot be solved by simply assuming that the constraints with which two (or more) winners clinch the competition are not ranked with respect to each other or are tied. In such an approach, the selected candidates ought to be equally acceptable. However, a few variants of OT have been proposed that are designed to account for this kind of phenomenon (see, for example, partially ordered OT grammars of Anttila (1997) and Stochastic Optimality Theory of Boersma (1998) and Boersma & Hayes (2001)).

102. The referent of an Agent is more empathized with than that of a Theme or Goal. Consider the following examples.

>   (i)a. Before the poster of herself, an actress danced.
>   b. (?)Before the poster of herself, an actress fell down.

In (ia), where the verb is unergative, the antecedent of the reflexive is an Agent, while in (ib), where the verb is unaccusative, it is a Theme. Although the judgments are very subtle, there are at least a few speakers who detect the superiority of the former over the latter. Here, I tentatively assume that Agent is at the same level as Experiencer in the hierarchy, since with the referent of an Agent and that of an Experiencer, it is very difficult to empirically test which attracts more empathy.

103. With this condition, the values assigned are negative. That is, 10 points are subtracted from the score per DP-boundary between the antecedent and the logophor, and 30 points are subtracted from the score per LVP-boundary between the two.

104. The reflexive in (142) allows a "long-distance" antecedent virtually for the same reason (i.e. the intervening existential *there* is not an ideal potential antecedent). This is so even if there exists an operation like expletive replacement (Chomsky 1986b) or expletive adjunction (Chomsky 1991 & 1993) at LF, since for logophor licensing, what is crucial is surface representation and not LF representation (see section 2.7.4 for discussion on this issue).

105. This has been the standard approach to backward *picture*-noun anaphora with the exception of a few minor modifications. For example, Landau (2000 & 2001) posits a structure like (i), which invokes the VP-shell structure of Larson (1988).

(i)

```
                        IP
            ┌───────────┴───────────┐
           DP                       I'
            │              ┌─────────┴─────────┐
            e              I                   VP
            △                                  │
            │                                  V'
            │                          ┌───────┴───────┐
            │                          V               VP
            │                          │         ┌──────┴──────┐
            │                          e        DP            V'
            │                                    △      ┌──────┴──────┐
            │                                  Maryᵢ    V            DP
            │                                           │             △
            │                                        pleased    pictures of herselfᵢ
            └──────────────────────────────────────────────────────┘
```
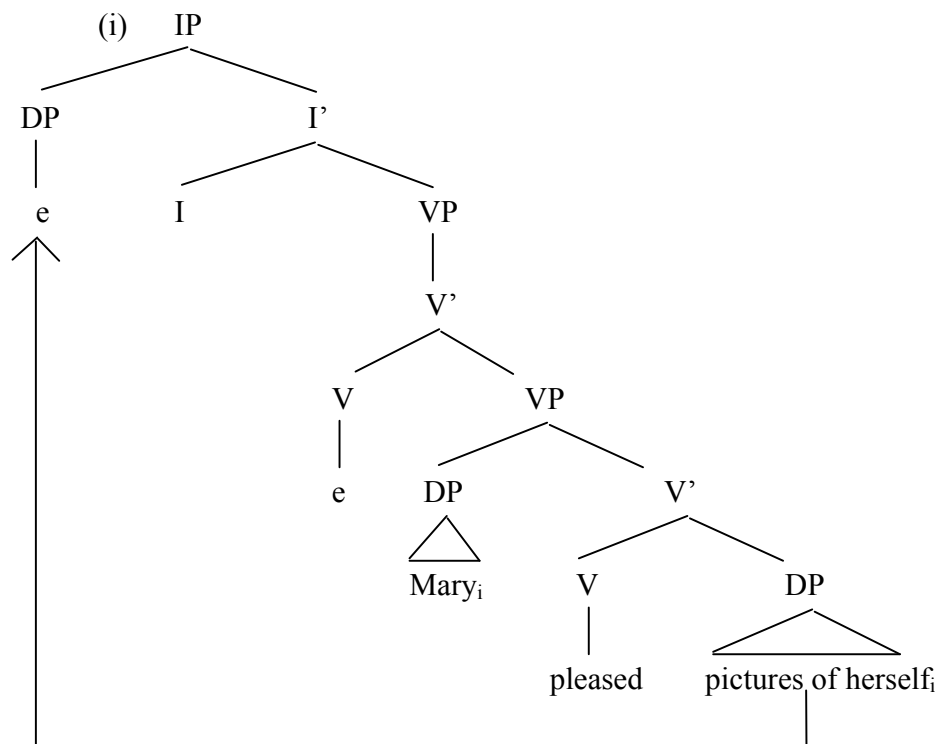
106. In particular, if Mary is mentioned in the preceding sentence, then the awkwardness disappears almost completely, as illustrated in (i).

> (i) One day Mary was taking off pictures on the wall with her sister in the living room. Suddenly, a few pictures of herself fell on Mary and knocked her down.

107. In (147b) and (148) the relevant sentences are embedded in the complements of *believe*. This is to ensure that *for each other* in the initial position receives a neutral interpretation by having the whole subordinate clause focused. As mentioned in section 2.3, Reinhart & Reuland (1993) note that an anaphor, when focused, shows logophoric behavior even if it is in an argument position of a syntactic predicate at S-structure.

108. There are some who feel that (148) is little better than (147b). I am not exactly

sure where this discrepancy comes from.

109. Virtually the same paradigm is obtained with accusative reciprocals in gerundive constructions, as can be seen in (i).

> (i)a. ?*I believe that each other meeting the chair will help Mary and Sue.
>
> b. ?*I believe that each other meeting the chair will please Mary and Sue.

However, for some reason, the gerundive counterpart of (147a) is awkward for some speakers, as shown in (ii).

> (ii) (?)Mary and Sue will profit from each other meeting the chair.

110. This contrast can be accounted for if it is assumed that the *picture*-NP in (149b) is also base-generated below the Goal argument and subsequently moves to the subject position. However, I have never heard of such a proposal nor even of a report that backward *picture*-noun anaphora is better with a Goal object than with a Theme object. Besides, even if a proposal like that were adopted, now the disparity between (149a) and (149b) could not be explained.

111. Reinhart & Reuland (1993) take up sentence (i), quoted from Jackendoff (1972), where backward *picture*-noun anaphora is permitted in a non-psych-context.

> (i) The picture of himself that John saw in the post office was ugly.
>
> (Reinhart & Reuland 1993 (46a) p.682, quoted from Jackendoff 1972 (4.111) p.134)

However, with respect to this example, if the raising analysis of relative clauses (e.g. Vergnaud 1974, Carlson 1977, Kayne 1994) is adopted, then it follows that the *picture*-NP originates in the object gap of the relative clause. In this structure, the reflexive is indeed c-commanded by the antecedent *John* at D-structure, and the above sentence poses no problem for Belletti & Rizzi's (1988) analysis.

112. In the case of *to*-dative constructions like *explain ... to ...*, I believe that Fox & Nissenbaum mean that it is the dative argument that is not salient enough in the discourse.

113. Actually, 4 of my speakers commented that (154b) was even better than (154a). However, this is probably due to a garden path that the latter creates and has little to do with the grammar. That is, in (154a) not until we see the preposition *in* immediately follows the copula *are* do we realize that the *book*-phrase is, in fact, the subject of the lowest clause. In any case, the point is that Fox & Nissenbaum's report that (154b) is worse than (154a) was not attested by my consultants.

114. I truly thank Glyn Hicks (pc) for suggesting that the test sentences should be simplified.

115. Actually, I came across 2 speakers who judged that neither (159a) nor (159b) was

really well-formed. Presumably for those people, there exists an unknown factor that makes both examples unacceptable. At any rate, what is important here is that none of my informants reported that (159a) was remarkably better than (159b).

116. Shortly in this section I will present some arguments that suggest that discourse conditions apply strictly to surface representation. If Fox & Nissenbaum's informants agree with the judgments provided there, then the assumption suggested in the text would not be valid.

117. The material presented in this subsection is published in Uchiumi (2005a).

118. This is at odds with the view that what we call nouns, verbs and adjectives are simply category-neutral roots inserted into nominal, verbal and adjectival environments, respectively (e.g. Marantz 1997, Harley & Noyer 1998, Arad 2005). I do not share such an idea, though I hold a similar view about functional categories.

119. Magnitude estimation is an experimental technique commonly used in psychophysics to measure how much sensation a person is feeling from sensory stimuli like brightness, loudness or tactile stimulation. It requires a subject to estimate the magnitudes of physical stimuli that she perceives and assign numerical values to them, relative to a standard stimulus, which has already been given a certain value. Bard, Robertson & Sorace (1996) and Cowart (1997) demonstrate that this method is also effective in measuring linguistic intuitions such as grammaticality judgments.

120. What is in the parenthesis is added to ensure that *criticism* is construed as a process nominal.

121. One question arises at this point. Namely, when heads like *criticism* lack a genitive DP, as in (i), do they still implicitly project an Agent?

    (i) A criticism of himself/him.

My answer to this question is syntactically no but semantically yes. That is, in the syntactic representation, an element like PRO is never projected, as illustrated in (iia), but in the semantic representation, an Agent does exist inside the NP, as depicted in (iib).

    (ii)a. [$_{DP}$ A [$_{NP}$ criticism of himself/him]]   (syntax)
            NOT SYNTACTIC PREDICATE   (no subject)

      b. [$_{DP}$ A [$_{NP}$ Ag criticism of himself/him]]   (semantics)
            SEMANTIC PREDICATE

This idea is supported by the asymmetric behaviors of anaphors and pronouns with respect to binding, as can be seen below.

    (iii)a. John tape-recorded a criticism of himself.

        'interpretation: John tape-recorded himself criticizing himself.'

        'interpretation: John$_i$ tape-recorded someone else's criticizing him$_i$.'

      b. John$_i$ tape-recorded a criticism of him$_i$.

        *'interpretation: John tape-recorded himself criticizing himself.'

        'interpretation: John$_i$ tape-recorded someone else's criticizing him$_i$.'

Since the Chain Condition only cares about syntactic predicates, it is not relevant to the reflexive in (iiia) (vid. (iia)).　As a result, the agent of *criticism* in this sentence can be interpreted either as John or as someone else in semantics.　On the other hand, Condition B applies to semantic predicates, and therefore, it rules out the reflexive construal in (iiib) (vid. (iib)).

122. See also Grimshaw (1990) for the view that result nominals do not inherit argument structures at all from their related verbs.

123. The hypothesis ought to be testable in terms of the Chain Condition violation as well. Namely, if it is on the right track, then (ib) is expected to be marginally acceptable to some speakers, at least at the same level as (169).　By contrast, (ia) is predicted to be completely ungrammatical just as (170).

      (i)a. *Mrs. Smith knows that their evaluation of herself will be videotaped.

        b. *Mrs. Smith knows that their evaluation of herself will be seen by the

          principal.

However, my consultants judged that the two sentences were equally ill-formed, and my hypothesis was not confirmed in this regard.

Chapter 3   PRO and Related Issues: Control

3.1 Introduction

As is well known, one interesting property of nonfinite clauses is that their subjects are often left unexpressed even in non-pro-drop languages like English. Consider example (1a).

(1)a. Kevin hopes ___ to win the game.
   b. Kevin$_i$ hopes that he$_i$ will win the game.
      (Also appeared as (5a) & (5b) ch.1 p.1)

In (1a), while the matrix subject is clearly *Kevin*, the embedded subject is apparently missing.   Since this sentence can be roughly paraphrased as in (1b), it is evident that at least semantically, the subject of *to win the game* is also *he* (=*Kevin*).   One fundamental question then is how subjectless nonfinite clauses as in (1a) end up having the appropriate interpretations with respect to their subjects.   In the standard Principles and Parameters approach, a phonologically null element usually represented as PRO is assumed to occupy empty subject positions.   In (1a) then PRO is said to be controlled by *Kevin*, which is referred to as the controller or antecedent.

Although this does indeed solve the above problem, the exact nature of this element is still a matter of much controversy.   The module of grammar that constrains PRO is called control theory.   The theory has two major tasks to accomplish: (i) to specify how PRO is interpreted and (ii) to explain its distribution.

I think that the answer to (ii) is simple.   Basically, each lexical item is characterized by three aspects: phonology, syntax and semantics.   For example, the word *table* is phonologically characterized by the string of phonemes /tebl/, syntactically characterized by the feature complex [+N, -V] and semantically characterized by whatever *table* literally means.   However, there are some elements for which one (or more) of the three characterizations is inert.   For instance, while existential *there* is phonologically /ðɛr/ and syntactically functions as a DP, it is semantically empty.   It is obvious that PRO also lacks one of its characterizations.   That is, although it is syntactically DP and semantically a kind of pro-form, this item does not bear any phonological content.

What is interesting is that an element lacking one (or more) of its three characterizations typically shows restricted distribution.   For example, as for existential

there, it must be licensed specifically in the Spec of existential IP (which includes IP that signifies appearance) (see also Quirk et al. (1972) for a similar view). Thus, whereas the verb *appear* can potentially take existential *there* as its subject, as illustrated in (2a), the sentence is not grammatical unless it is used existentially, as in (2b) (cf. (2c)).[1]

      (2)a. There appeared a ghost in the castle.

          b. *There appeared that a ghost had frightened the guard of the castle.

          c. It appeared that a ghost had frightened the guard of the castle.

It is well known that PRO also has restricted distribution -- it can only occur as the subject of a nonfinite clause.[2] In my view, this is because PRO must be licensed in the Spec of nonfinite IP.[3] There is no deeper reason for this limited distribution anymore than there is a deeper reason for the limited distribution of existential *there* beyond the licensing requirement.[4]

Since no more need be said regarding the distributional properties of PRO, the remainder of this chapter will be dedicated to task (i). The discussion will proceed as follows. In section 3.2, I will briefly address the observation made by Williams (1980) that broadly speaking, there are two kinds of control relations: obligatory control (OC) and non-obligatory control (NOC). In section 3.3, some of the existing approaches to these two types of control will be reviewed. Specifically, section 3.3.1 will go over Williams (1980), section 3.3.2 will go over Manzini (1983), section 3.3.3 will go over Hornstein (1999 & 2000), section 3.3.4 will go over Landau (2000), and section 3.3.5 will go over Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005).

In section 3.4, I will sketch out my basic analysis of obligatory control. In section 3.4.1, I will hypothesize that in obligatory control, PRO is licensed by the Chain Condition, introduced in section 2.5. Thus, in my approach, obligatory control and anaphor binding are governed by the same mechanism. In section 3.4.2, some potential problems with such a unified theory will be discussed, which have been previously noted by a number of authors.

In section 3.5, I will turn to the analysis of non-obligatory control. In section 3.5.1, I will show that PRO in non-obligatory control contexts is logophoric and is licensed by discourse conditions, discussed in section 2.6. In section 3.5.2, I will present a concrete mechanism by which non-obligatory control sentences are derived. In section 3.5.3, I will take up verbs with gerundive "complements" that exhibit the non-obligatory control effect, which can potentially be problematic for the analysis presented in this chapter.

In section 3.6, I will argue that there exist control constructions that look very much like obligatory control but are, in fact, properly classified as non-obligatory control, which I call pseudo-obligatory control (POC). In section 3.6.1, I will explain what is exactly meant by "pseudo-obligatory control". In section 3.6.2, I will give diagnoses with respect to four constructions as to whether they are pseudo-obligatory control or not. Section 3.7 will be a summary of this chapter.

3.2 The OC/NOC Distinction

In the study of control, it has been well established since Williams (1980) that broadly classified, there are two kinds of control. Consider the following examples.

(3) a. Harry$_i$ tried [PRO$_i$ to speak his mind in public].
   (Also appeared as (6a) ch.1 p.2)
   b. It is dangerous for babies$_i$ [PRO$_{arb}$ to smoke around them].
   (Kawasaki 1993 (16) p.28)

In (3a) PRO is controlled by the "local" antecedent *Harry*, putting aside for the moment the issue of how to define "locality" with respect to PRO (but see Petter (1998) for the view that this relation should not be called "local").[5] In (3b), on the other hand, PRO does not have such a "local" controller. In fact, PRO here refers to an unspecified someone, which is called arbitrary control. We refer to the former type of control relation as obligatory control (OC) and the latter type as non-obligatory control (NOC).

Regarding the OC/NOC distinction, there is one important caveat, however. Namely, although the above instances are indisputably OC and NOC, respectively, for most control researchers, with some constructions, there has been considerable disagreement as to under which type of control they should be classified (see section 3.6 for discussion). This appears to be mainly due to the fact that the definitions of OC and NOC are not necessarily uniform among researchers. Worse still, some authors do not make clear what kind of definitions they adopt, which often causes difficulty on the part of the reader. In this thesis I will rigorously define OC and NOC in sections 3.4 and 3.5, respectively, explaining the validity of those definitions. Yet for the present, one can roughly understand OC as control in which PRO takes a "local" controller and NOC as control in which such a "local" controller is missing.

Before I present my own analysis, it is worth observing how the phenomenon of

control is handled by other researchers.   In the next section I will review some of the existing approaches to the OC/NOC distinction that have emerged in the literature.

3.3 The Existing Approaches to the OC/NOC Distinction

In this section I will review some of the existing approaches to the OC/NOC distinction that have been presented in the literature.   For reasons of space, I will limit myself to going over only five articles.   These are: Williams (1980), Manzini (1983), Hornstein (1999 & 2000), Landau (2000), and Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005), which are all frequently cited in the literature.

3.3.1 Williams (1980)

Williams (1980) explains the phenomenon of control based on the theory of predication.   Specifically, he reduces OC to predication, represented at predicate structure (PS).   PS is a level of representation between surface structure[6] and LF.   In this theory, a predicate can be AP, indefinite NP/DP, PP or VP, as shown in (4).

(4)a. John$_i$ is [$_{AP}$ sad]$_i$.   (Williams 1980 (1a) p.203)
   b. John$_i$ is [$_{NP/DP}$ a doctor]$_i$.
   c. John$_i$ is [$_{PP}$ near Larry]$_i$.   (Williams 1980 (16c) p.207)
   d. John$_i$ [$_{VP}$ died]$_i$.   (Williams 1980 (16a) p.207)

At PS, the rules of predication apply, whereby a predicate is coindexed with its subject, called the antecedent.   Each predicate has exactly one antecedent, and as illustrated below, the latter must c-command and be c-subjacent[7] to the former.

(5)a. I presented it$_i$ to John dead$_i$.
   b. *I presented John with it$_i$ dead$_i$.
      (Williams 1980 (3a) & (3b) p.204)

In (5a), which is grammatical, the predicate *dead* is c-commanded by its antecedent *it*, whereas in (5b) this is not the case, since the latter element is contained in a PP that does not contain the former.[8]   Therefore, sentence (5b) is ruled out.   This c-command

condition is considered to be a filter that checks the structural configuration of coindexation at PS.

Furthermore, When a predicate occurs inside a VP, it is generally predicated of a Theme argument. Observe example (6).

(6) John [$_{VP}$ gave Bill$_i$ the dog$_j$ dead$_{*i/j}$]. (Williams 1980 (17) p.207)

In the above sentence, the predicate *dead* is inside the VP, and its antecedent is the Theme *the dog* and not the Goal *Bill*, even though both of them c-command this predicate.

Williams argues that OC is another instance of predication. His idea is that S (=IP) and S' (=CP) can also be predicates provided that they contain an open position like PRO or a *wh*-operator. OC then is a case in which such an S or S' is in a predicate position. The predicational approach to control departs from other control theories in two respects. First, in this framework, the rules that govern OC are, in fact, the more general rules of predication. Second, the controller is not coindexed with PRO directly, but rather, indexing is mediated by the control clause, which contains PRO. Thus, OC sentence (7) , for example, has PS representation (8).

(7) We tried [PRO to run].
(8) We$_i$ [$_{VP}$ tried [$_S$ PRO$_i$ to [$_{VP}$ run]$_i$]$_i$]

In (8) the complement clause contains PRO. This clause, as well as the matrix VP, is in a predicational configuration with *we* and hence is coindexed with it. Since the subject of this embedded S is an open position, the index percolates down to the embedded VP. Finally, this lowest predicate is coindexed with PRO, which is its antecedent.

Williams enumerates five characteristics of OC, given in (9).

(9)   The Characteristics of OC:
    a. There must be a controller.
    b. The controller must precede PRO.[9]
    c. The controller must c-command PRO.
    d. The controller is uniquely determined.
    e. PRO cannot be replaced by (*for* +) a lexical NP/DP.

Williams's argument is that these properties all follow from the properties of predication. There must be a controller in OC, since every predicate is required to have an antecedent

by the predication rules.   The controller in OC must precede and c-command the control clause, which contains PRO, because a predicate must be preceded[10] and c-commanded by its antecedent.   The OC controller is uniquely determined, because each predicate has a unique antecedent.   In OC, PRO cannot be replaced by a lexical NP/DP, since if it could, the embedded S with an overt subject would clearly not be a predicate, lacking an open position, which would ultimately show that the position that the control clause occupies were not a predicate position.

On the other hand, NOC is a case in which an S or S' with an open gap is not in a predicate position.   Under such circumstances, the S or S' is not coindexed with anything at PS but is instead marked as arb.   This does not mean that NOC never has a controller, because arb can be overridden by some other index at LF.   If an arb index remains intact at LF, then it receives a generic interpretation.

There are two rules that rewrite arb, which are disjunctively ordered.   The first rule, which is more or less obligatory, requires that if a clause marked as arb and some NP/DP mutually command[11] each other, then this arb is rewritten into the same index that the latter bears.   For example, consider sentence (10).

(10) It is important to me$_i$ [PRO to leave]$_{i/*arb}$.   (Williams 1980 (60c) p.216)

(11)a. It is important to me$_i$ [PRO to leave]$_{arb}$ (PS representation)

b. It is important to me$_i$ [PRO to leave]$_i$ (LF representation)

In this example, since the control clause is not in a predicate position, it is marked as arb at PS, as shown in (11a).   However, this arb is overridden by the index i at LF, as indicated in (11b), because the arb-marked clause and *me*, which bears i, command each other.   Therefore, the control S is coindexed with *me* and cannot be arbitrary in reference.

The second rule optionally rewrites arb into the same index that an NP/DP bears if the arb -marked clause is commanded by this NP/DP.   This rule pertains to examples such as (12).

(12) John$_i$ told Mary$_j$ that it would be important [PRO to leave early]$_{i/j/arb}$.
(Williams 1980 (64) p.217)

Here, the two NPs/DPs, *John* and *Mary*, command the infinitival clause, which has been marked as arb at PS, but not vice versa.   As a result, either NP/DP or neither can be taken as the controller.

In case both of the two rules are applicable, the first rule takes precedence over the second.   Consider the following example.

(13) John$_i$ told Mary$_j$ that it was important to Fred$_k$ [PRO to leave early]$_{*i/*j/k}$.
    (Williams 1980 (65) p.217)

In (13), while the three NPs/DPs, *John*, *Mary* and *Fred*, satisfy the condition for the second rule, *Fred* also meets the condition for the first.   Thus, the application of the former is blocked, and it is *Fred* that is selected as the controller.

Perhaps the most appealing part of Williams's theory of control is that it abolishes all the special rules for OC by reducing the OC relation to the predication relation, which is well established independently.   In this respect, it could be claimed that his theory has simplified the grammar.   However, this does not mean that the whole control module has been completely eliminated.   That is, the NOC component still remains.   In particular, the two arb rewriting rules are specifically devised for NOC and have nothing to do with other constructions.   Furthermore, there are some conceptual and empirical problems in the predicational approach to control.   In the remainder of this subsection, I will address these issues.

First, as mentioned above, aside from control constructions, when a predicate occurs inside a VP, its antecedent is typically a Theme argument (vid. (6)).   However, when it comes to OC, the situation is very different.   In most (or perhaps all) of the OC cases, the control clause is inside the matrix VP.   Nevertheless, there are many instances in which the antecedent is not a Theme.   Observe the following examples.

(14)a. John [$_{VP}$ tried [PRO to leave]].   (Williams 1980 (25c) p.208)
    b. John [$_{VP}$ began [PRO to leave]].[12]
    c. John [$_{VP}$ managed [PRO to leave]].
    d. John$_i$ [$_{VP}$ promised Bill [PRO to leave]$_i$].[13]   (Williams 1980 (25a) p.208)
    e. John$_i$ [$_{VP}$ told Bill [PRO to leave]$_i$].

In (14a) and (14b) the antecedent of the control S is clearly an Agent, and in (14c) it is probably a Benefactive.   In (14d) the antecedent is an Agent or possibly a Source, or at any rate something other than a Theme.   Lastly, in (14e) the antecedent is a Goal.   If OC is really a kind of predication, as Williams maintains, then it is rather strange that the two phenomena behave differently with respect to the antecedent choice.   In particular, I am puzzled by the fact that while a Goal argument can serve as the antecedent in (14e),

such an antecedent choice is impossible in (6).

Second, Williams argues that permitting split antecedents is a property of NOC and therefore never happens to OC.   Consider the following contrast, which he provides.

(15)a. John$_i$ told Mary$_j$ that it would be appropriate [PRO to leave together]$_{i+j}$.
   b. *John$_i$ promised Mary$_j$ [PRO to leave together]$_{i+j}$.
      (Williams 1980 (66) & (67) p.218)

In the above examples, as evidenced by the presence of the adverb *together*, the antecedent of the control S is a plural of sorts, namely *John* and *Mary*, which are split or realized in separate positions.   This is fine with (15a), since the construction involved is not OC.   By contrast, split antecedents are incompatible with (15b), because *promise* is one of the verbs that exhibit OC.[14]   Meanwhile, Williams (1980: 208) also treats *persuade* as an OC verb.   However, as noted by Landau (2000), *persuade* does allow split antecedents, as illustrated in (16) (but see Martin (1996) for a different report).

(16) John$_j$ persuaded Mary$_i$ [PRO to leave together]$_{i+j}$.

The third problem also concerns with the uniqueness of the controller in OC. Williams mentions that one of the reasons why *count on* taking an infinitival complement is considered to be NOC is because the controller in this construction cannot be uniquely determined.   Observe example (17).

(17) I$_i$ am counting on Bill$_j$ [PRO to get there on time]$_{i/j}$.
      (Williams 1980 (48) p.214)

Indeed, in the above sentence, the controller is ambiguous between the subject and the object (of the phrasal verb).   The issue is as follows.   Williams maintains that *promise* is an OC verb in which the subject is uniquely designated as the controller, as indicated in (18a) (see also (14d)).   However, as pointed out by many authors (e.g. Manzini 1983[15], Farkas 1988, Sag & Pollard 1991, Landau 2000, Bowers 2005), the controller in this construction can be either the subject or the object under certain conditions, which is sometimes called control shift.[16]   Observe example (18b).

(18)a. Peter$_i$ promised Amy$_j$ [PRO to leave]$_{i/*j}$.
       (Also appeared as (11a) ch.1 p.6)

b. Peter$_i$ promised Amy$_j$ [PRO to be allowed to leave]$_{i/j}$.

Similarly, Williams believes that *persuade* is an OC verb whose controller is fixed at the object, as shown in (19a).   However, though the number is much smaller than in the case of *promise*, there are a few speakers who can shift *persuade* to subject control under certain circumstances, as noted by some researchers (e.g. Farkas 1988, Sag & Pollard 1991, Landau 2000).   Observe example (19b).

(19)a. Susie$_i$ persuaded the teacher$_j$ [PRO to leave early]$_{*i/j}$.
   b. Susie$_i$ persuaded the teacher$_j$ [PRO to be allowed to leave early]$_{i/*j}$.
   (Sag & Pollard 1991 (71) p.86)

Fourth, according to Williams, an ambiguity as in (17) stems from there being more than one NP/DP in a sentence to which the first arb rewriting rule can apply.   As a result, arb can be rewritten into the same index as any of those NPs/DPs.   However, with respect to adjuncts, this analysis does not hold.   For example, *arrange* is another verb that he classifies under NOC (Williams 1980: 215).   However, as can be seen in (20a), it does not trigger any ambiguity even if there exists an adjunct NP/DP that satisfies the condition for the relevant rule.

(20)a. I$_i$ arranged along with Bill$_j$ [PRO to get there on time]$_{i/*j}$.
   b. I arranged along with Bill$_i$ [for him$_i$ to get there on time].

In (20a) not only the matrix subject *I* but also *Bill*, embedded in the adjunct PP, commands and is commanded by the infinitival clause, which has been marked as arb at PS.   Nonetheless, it is only the former that can be interpreted as the antecedent of the control S.   Note that the nature of this restriction is not semantic or pragmatic, as evidenced by the grammaticality of (20b).   Actually, I suspect that Williams's first arb rewriting rule is on the right track (if not perfectly accurate) as a descriptive generalization.   But if it really is, then his treatment of *arrange* as an NOC verb must inevitably be reconsidered.

Fifth, a problem can also be found in Williams's second arb rewriting rule.   At least since Kuno (1975), it has been recognized that there is an odd restriction as to which NP/DP can serve as the controller in what are commonly called super-equi constructions (see sections 3.3.4 & 3.6.2.1 for more on this cluster of constructions).   Consider the pair of examples below.

(21)a. John said to Mary that it would be easy [PRO to prepare herself for the exam].

b. *John said about Mary that it would be easy [PRO to prepare herself for the exam].

(Kuno 1975 (7a) & (7b) p.30)

The NP/DP *Mary* satisfies the condition for the second arb rewriting rule in both (21a) and (21b), because in either sentence, it commands the control S, which has been marked as arb at PS, but not vice versa. Nevertheless, it is only in the former example but not in the latter that this NP/DP can serve as the controller. As will be mentioned in section 3.5, which element can serve as the controller of NOC PRO seems to be subject to strict discourse conditions, discussed in section 2.6. Thus, it appears that the second arb rewriting rule is too powerful, generating non-existing structures.

As the sixth problem, Williams categorizes *decide* under NOC based on the following examples with impersonal passives.

(22)a. It was decided [PRO to have dinner at six].

b. It was decided by the committee$_i$ [PRO to have dinner at six]$_i$.

(Williams 1980 (53) p.215 & (55) p.216)

He argues that sentence (22a) demonstrates that this construction need not have a controller and that sentence (22b) shows that if there is any controller at all, it does not have to c-command PRO. However, the problem is that, as noted by Kawasaki (1993), *promise*, which is one of Williams's canonical OC verbs, marginally allows impersonal passivization. Consider sentence (23).[17]

(23) %?It was promised (by the committee$_i$) [PRO to investigate the matter]$_i$.

(Kawasaki 1993 (9b) p.105)

In fact, it is not clear whether (22a) and (23) without the *by*-phrase really lack a controller. Namely, in these examples, PRO is interpreted as being identical with the matrix logical subject, though it is not overtly realized. If that is the case, then it is possible that the former is implicitly controlled by the latter (see Landau (2000) for this idea).

Finally, I would like to close this subsection by giving overall comments. In this article Williams reduces OC to predication. The move is thoroughly understandable.

After all, the relation between the controller and the control S in OC contexts looks very much like predication.   However, in my opinion, this is merely an artifact of coindexing OC PRO with its "local" c-commanding controller.   The uniqueness of the controller, which corresponds to a property of predication, comes from the semantics of particular OC verbs like *try*.   The fact that his OC verbs such as *promise* and *persuade* do not obey this uniqueness condition indicates that this requirement is too stringent and suggests that my above intuition is correct.

3.3.2 Manzini (1983)

Manzini (1983) is the first to attempt a unified account of binding and control with respect to their interpretational properties.   Her starting point is Chomsky's (1981) binding theory, and she makes some additional assumptions to accommodate facts about control.   In her approach, PRO either must be coindexed with some element in a certain domain or is free in reference depending on its configurational position.   Thus, the former roughly corresponds to OC, and the latter to NOC, although she does not describe them in this way.

Manzini supposes that PRO is purely anaphoric.   Consequently, the PRO theorem is no longer meaningful, and the distribution of PRO is derived from the combination of the idea that this item lacks a governing category and the assumption that it lacks Case.   She believes that an anaphor is a free variable that can be referentially dependent on another element, or alternatively can be referentially never dependent at all. In the latter option, which is only possible with anaphors lacking specific φ-features, the arbitrary reading arises.

Since PRO is an anaphor in Manzini's framework, it is subject to her condition A, given in (24).

(24) Condition A:
      An anaphor is bound in its governing category and its domain
      governing-category.   (Manzini 1983 (70) p.432)

She then defines governing category and domain-governing category as in (25) and (26), respectively.

(25) Governing Category:

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γ is a governing category of α iff

a. γ is the minimal category with a subject[18] containing α and a governor for α, and

b. γ contains a subject accessible to α.

(Manzini 1983 (71) p.432)

(26) Domain-Governing Category:

γ is a domain-governing category for α iff

a. γ is the minimal category with a subject containing the c-domain[19] of α and the governor for the c-domain of α, and

b. γ contains a subject accessible to α.

(Manzini 1983 (72) p.433)

The idea behind (24) is that even if an anaphor lacks a governing category as in the case of PRO, it still may have to be bound in its domain-governing category.[20] For instance, consider the examples in (27), in which nonfinite clauses with PRO subjects occupy the object position of the higher clause.

(27)a. John wanted [PRO to shave himself].

b. $John_i$ promised $Bill_j$ [$PRO_{i/*j}$ to shave himself].
   (Manzini 1983 (14) p.423)

c. $John_i$ asked $Bill_j$ [$PRO_{*i/j}$ to shave himself].   (Manzini 1983 (12) p.423)

In this configuration, as can be seen in (28), PRO cannot be coindexed/coreferential with an element outside the clause immediately superordinate to the control clause.

(28)a. *$Mary_i$ said [that John wanted [PRO_i to shave herself]].

b. *$Mary_i$ said [that John promised Bill [PRO_i to shave herself]].

c. *$Mary_i$ said [that John asked Bill [PRO_i to shave herself]].
   (adapted from Manzini 1983 (63) p.430, (19) p.423 & (18) p.423)

Moreover, PRO cannot have arbitrary reference, as shown in (29).

(29)a. *John wanted [PRO to shave oneself].   (Manzini 1983 (62) p.430)

b. *John promised Bill [PRO to shave oneself].
   (adapted from Manzini 1983 (17) p.423)

c. *John asked Bill [PRO to shave oneself].

Hence, it is concluded that when PRO resides in an object clause, it must be bound within the clause that immediately contains the control clause. With respect to the choice between subject control and object control, the decision is made outside syntax, say on semantic grounds.

For this construction, Manzini postulates the structure schematized in (30). (Although (27b) and (27c) include an indirect object, it is not depicted here for simplification.)

(30)
```
              S
        ┌─────┼─────┐
      NP/DP  AGR    VP
                     │
                     V'
                 ┌───┼───┐
                 V  NP/DP S'
                         │
                         S
                        ╱‾╲
                       PRO...
```
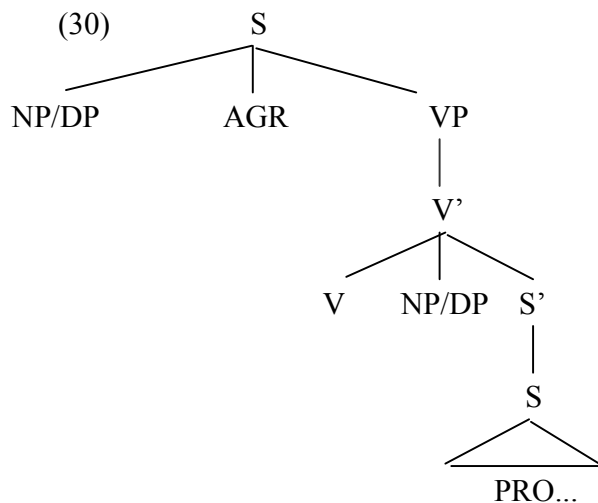
In the above structure, the c-domain of PRO is S', because it is the minimal maximal category dominating PRO. The minimal category with a subject containing this S' and a governor for it is the matrix S, where the higher NP/DP or AGR is the subject, and V is the governor. Also, this matrix S contains a subject accessible to PRO, namely the higher NP/DP or AGR, which c-commands PRO, and coindexing either of them with the latter would not violate the i-within-i condition. Thus, the domain-governing category for PRO is the matrix S, within which this item is correctly predicted to be bound.

On the other hand, consider example (31), in which a nonfinite clause with a PRO subject occupies the subject position of the higher clause.

(31) [PRO To behave himself in public] would help Bill.
(Manzini 1983 (27) p.424)

In this configuration, as can be seen in (32), PRO can be coindexed/coreferential with an

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element outside the clause immediately superordinate to the control clause.

(32) Mary knows that [[PRO to behave herself in public] would help Bill].[21]
     (Manzini 1983 (28) p.424)

Moreover, PRO can have arbitrary reference, as shown in (33).

(33) [PRO To behave oneself in public] would help Bill.[22]
     (Manzini 1983 (26) p.424)

Hence, it is concluded that when PRO resides in a subject clause, it is free in reference.

For this construction, Manzini postulates the structure schematized in (34), where S' and AGR are coindexed/cosuperscripted.

(34)
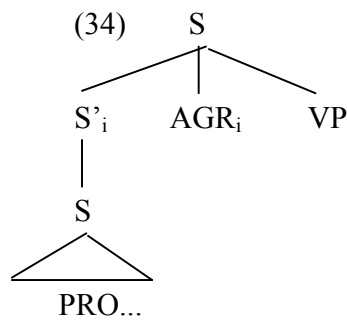
In the above structure, just as in (30), the c-domain of PRO is S', and the minimal category with a subject containing this S' and a governor for it is the matrix S, where S' or AGR is the subject, and AGR is the governor. However, unlike in (30), this matrix S does not contain a subject accessible to PRO, because though both S' and AGR do c-command this item, coindexing either of them with it would violate the i-within-i condition. Therefore, PRO does not have a domain-governing category. As a result, (24) does not apply, and PRO is correctly predicted to (co)refer freely.

Next, consider example (35), in which a nonfinite clause with a PRO subject is extraposed.

(35) It would help Bill [PRO to behave himself in public].
     (Manzini 1983 (41) p.426)

In this configuration, as can be seen in (36), PRO can be coindexed/coreferential with an

element outside the clause immediately superordinate to the control clause.

(36) Mary knows [that it would help Bill [PRO to behave herself in public]].
(Manzini 1983 (43) p.426)

Moreover, PRO can have arbitrary reference, as shown in (37).

(37) It would help Bill [PRO to behave oneself in public].
(Manzini 1983 (44) p.426)

Hence, it is concluded that when PRO resides in an extraposed clause, it is free in reference.

For this construction, Manzini postulates the structure schematized in (38), where the subject NP/DP, AGR and the extraposed clause are all coindexed/cosuperscripted.

(38)

```
                      S
        _____/__|_____
       /           |     |           \
   NP/DP_i       AGR_i   VP          S'_i
    /\                                |
   /__\                               S
    it                               /\
                                    /__\
                                  PRO...
```
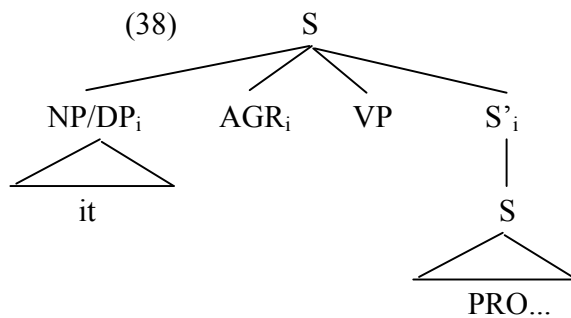
In the above structure, the c-domain of PRO is once more S', and the minimal category with a subject containing this S' and a governor[23] for it is again the matrix S. Yet just as in (34), this matrix S does not contain a subject accessible to PRO. Thus, this item does not have a domain-governing category. Therefore, (24) does not apply, and PRO is correctly predicted to (co)refer freely.

Finally consider example (39), in which a nonfinite clause with a PRO subject occupies the object position of the higher clause but is introduced by a *wh*-phrase.

(39) John asked [how PRO to behave himself]. (Manzini 1983 (35) p.425)

In this configuration, as can be seen in (40), PRO can have arbitrary reference.

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(40) John asked [how PRO to behave oneself].　　(Manzini 1983 (36) p.425)

Hence, it is concluded that when PRO resides in an object clause led by a *wh*-phrase, it is free in reference.

　　For this construction, Manzini postulates the structure schematized in (41)[24].

(41)

```
            S
       /    |    \
   NP/DP   AGR    VP
                   |
                   V'
                 /   \
                V     S'
                     /  \
                    C    S
                        /__\
                      PRO...
```
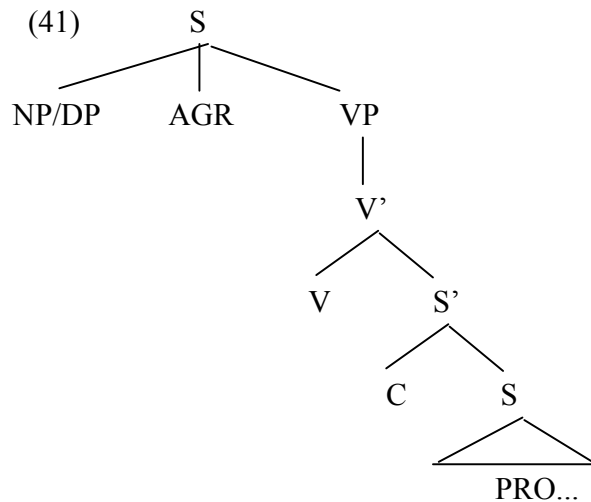
Assuming that in the presence of C, S is the maximal projection of I, and S' is the maximal projection of I and C together, then the c-domain of PRO in (41) is the subordinate S.　 PRO then does not have a domain-governing category, since this subordinate S lacks a governor.　 Therefore, (24) does not apply, and PRO is correctly predicted to (co)refer freely.　 In fact, in such an analysis, when PRO resides in a clause led by a *wh*-phrase, it is predicted to be free in reference, no matter where this clause may occur.

　　Now Manzini recognizes that there is an apparent problem with her theory about pronominals embedded in possessor-less NPs that occur in the object position of the matrix clause.　 Consider sentence (42).

(42) The boys$_i$ saw pictures of them$_i$.　　(Manzini 1983 (83) p.437)

In the above example, the matrix S is the minimal category with a subject (i.e. *the boys* or AGR) containing the pronominal itself and its governor (i.e. *pictures* or *of*), which contains a subject accessible to the pronominal (i.e. *the boys* or AGR).　 Thus, this matrix S is the governing category for the pronominal.　 As a result, by Condition B, *them* must be free in the matrix S.　 Yet this is false according to Manzini's judgments (but see

Chomsky (1981), Hestvik (1990) and Keller & Asudeh (2001) for different judgments on this construction).   Therefore, she proposes an alternative structure for sentence (42) as in (43), where the NP/DP has arbitrary PRO as a subject accessible to the pronominal.

(43) The boys$_i$ saw [$_{NP/DP}$ PRO$_{arb}$ pictures of them$_i$].

However, the above structure has a problem of its own.   Indeed, the pronominal in (43) is fine, since its governing category is the bracketed NP/DP.   But the trouble here is arbitrary PRO.   The c-domain of PRO is the object NP/DP because it is the minimal maximal category dominating PRO.   The minimal category with a subject containing this NP/DP and its governor is the matrix S, *the boys* or AGR being the subject, and V the governor.   Furthermore, this matrix S contains a subject accessible to PRO, namely *the boys* or AGR.   Thus, by (24), PRO must be bound in the matrix clause and should not be able to have arbitrary reference.

Next, my second comment concerns with PRO that does not have a domain-governing category.   In Manzini's framework, the reference for such PRO is completely free.   That is, it can freely corefer with anything in the sentence, or it can have arbitrary reference.   However, it is well known that even with NOC PRO, there are some restrictions as to which element can serve as its controller.   For example, as mentioned in section 3.3.1, in super-equi constructions, PRO can be coindexed/coreferential with an NP/DP embedded in a *to*-PP but not with one embedded in an *about*-PP.   The examples in (21) are repeated below.

(21)a. John said to Mary that it would be easy [PRO to prepare herself for the exam].
   b. *John said about Mary that it would be easy [PRO to prepare herself for the exam].

Also, as noted by Williams (1980), when the clause immediately superordinate to the control clause contains a potential controller, NOC PRO is likely to take it as its true controller and reject bearing arbitrary reference.   Observe example (44).

(44) [PRO$_{i/*arb}$ To leave] would be my$_i$ pleasure.   (Williams 1980 (60b) p.217)

The third problem is as follows.   In Manzini's system, the control in which an infinitival clause is introduced by a *wh*-phrase is classified as NOC.   Yet as pointed out

by Mohanan (1985), Chomsky (1986b) and Landau (2000), this construction does not allow "long-distance" control, which Manzini believes is one of the properties of NOC. Observe example (45).

(45) John said [that Mary asked [how PRO to feed herself/*himself]].
　　(Mohanan 1985 (27b) p.647)

The reason why Manzini categorizes this construction as NOC is because it can take the generic anaphor *oneself* as an argument of the control clause, as indicated in (40), repeated below, which suggests that PRO in it can be arbitrary.

(40) John asked [how PRO to behave oneself].

However, as discussed in Landau (2000), it is not clear whether such a diagnostic using *oneself* really shows that PRO at issue is really arbitrary in reference.　Consider the following sentences.

(46)a. Mary wasn't sure [when PRO to introduce oneself to John].
　　b. *Mary$_i$ wasn't sure [when PRO$_{arb}$ to introduce oneself to her$_i$].
　　(Landau 2000 (34b) & (35b) p.40)

Example (46a) is a canonical control instance just like (40) in which *oneself*, as well as PRO, resides in an object clause introduced by a *wh*-phrase.　However, if the control clause also contains a pronoun coindexed with a matrix argument, then the sentence is ungrammatical, as can be seen in (46b).　This appears to be the typical Condition B effect just like *We voted for me*.　Thus, it seems that in this construction, even in the presence of *oneself*, the referent of PRO is not completely arbitrary but must always include the referent of the "local" argument, which Landau (2000) calls the partial control effect (see Landau (2000) for details; see also section 4.3 on a related issue).

　　Finally, I would like to close this subsection by pointing out one intriguing fact. Roughly speaking, there are two kinds of approaches to OC.　In one approach, which I would call the "configurational" approach, the OC effect is induced by the configurational position that the control clause occupies (e.g. Hornstein 1999 & 2000, Landau 2000, Uchiumi 2003 & 2005b).　In particular, the control clause being in the complement position of a verb or adjective is the typical configuration in which OC is obtained.　Manzini's theory clearly belongs to this type.　On the other hand, in the

other approach, which I would call the "lexical" approach, the OC effect results from the lexical properties of particular control predicates (e.g. Williams 1980, Martin 1996, Wurmbrand 2001 & 2002).

Regarding the configurational approach, Manzini makes an interesting prediction, which she concludes cannot be tested in reality. Namely, with the OC configuration $[_{VP}$ V $[_S$ PRO...$]]$, if the control clause is displaced to the subject position, say by passivization, then the construction should come to allow the NOC interpretation of PRO. As Manzini says, passivization seems to be impossible with verbs that take an infinitival complement, but the operation is permitted with some verbs that take a gerundive complement. Consider the set of examples in (47).

(47)a. Geoffrey$_i$ believes [that his children$_j$ will remember [PRO$_{*i/j}$ climbing Mt. Everest]].
　　b. *Geoffrey$_i$ believes [that [PRO$_i$ climbing Mt. Everest] will be remembered by his children].
　　c. Geoffrey$_i$ believes [that [PRO$_i$ climbing Mt. Everest] will be remembered φ_{by} pro$_j$].

As shown in (47a), the verb *remember* clearly exhibits the OC effect when the gerundive complement stays in the object position. At first sight, as suggested by the ill-formedness of (47b), it seems that Manzini's prediction turns out to be false. However, if the demoted Experiencer is made implicit, as in (47c), then the "long-distance" reading of PRO becomes available. Note that the index of pro is distinct from that of PRO, and thus, this is not an instance of control by an implicit "local" argument. Therefore, Manzini is right in that displacing the nonfinite clause out of the complement position releases PRO from OC, but it also appears that which element can actually serve as the controller in such a configuration is still subject to some constraints, which are perhaps imposed by discourse.

3.3.3 Hornstein (1999 & 2000)

Although OC has traditionally been treated differently from raising in generative grammar, Hornstein (1999 & 2000) reduces the former to the latter in the Minimalist framework by adopting some additional assumptions. These assumptions are given in (48).

(48) a. θ-roles are morphological features on verbs/predicates.

b. If X moves to Y, then either a feature on X or a feature on (the head of) Y must be checked, which is called Enlightened Self-Interest (Lasnik 1995a & 1995b).

c. An NP/DP is assigned a θ-role by checking a θ-feature on a verbal/predicative phrase that it merges with.

d. A chain can have more than one θ-role.

Specifically, Hornstein argues that OC PRO is a residue of A-movement necessary to yield a PF-LF pair just like NP-trace. The only difference between the two is that while the latter involves raising to a non-θ-position, the former entails movement to a θ-position. As for NOC PRO, he suggests that it is actually pro.

Let us go over some concrete examples. Consider first sentence (49), whose derivation is briefly schematized in (50).

(49) John hopes [PRO to leave]. (Hornstein 1999 (19a) p.79)

(50) The Derivation of *John Hopes To Leave*:

1. [$_{vP}$ John leave]

2. [$_{IP}$ John to [$_{vP}$ John leave]]

3. [$_{vP}$ hopes [$_{IP}$ John to [$_{vP}$ John leave]]]

4. [$_{vP}$ John hopes [$_{IP}$ John to [$_{vP}$ John leave]]]

5. [$_{IP}$ John INFL [$_{vP}$ John hopes [$_{IP}$ John to [$_{vP}$ John leave]]]]

At step 1, *John* merges with *leave*, thereby checking the θ-feature on the verb. At step 2, It raises to the Spec of the embedded IP and checks its D-feature (=EPP feature).[25] At step 3, *hopes* merges with the complex assembled at the preceding steps, checking its internal θ-role (here, the VP is not depicted for simplification). At step 4, since the Spec of IP is not a Case position, *John* further raises for Case to the Spec of the matrix vP, where the external θ-feature on the verb is checked. Note that at this point, by (48c), *John* or the chain it heads assumes two θ-roles, which is allowed by (48d). The Spec of vP again being a non-Case position, at step 5, *John* once more raises to the Spec of the matrix IP, where its Case feature is finally checked. At the same time, the nominative Case feature on INFL and the EPP feature are also checked. For the multiple copies of *John*, only the top copy is pronounced at PF for whatever mechanism.

Consider next example (51), whose derivation is schematized in (52).

(51) John$_i$ persuaded Harry$_j$ [PRO$_{*i/j}$ to leave].   (Hornstein 1999 (31a) p.83)

(52) The Derivation of *John Persuaded Harry To Leave*:

    1. [$_{vP}$ Harry leave]

    2. [$_{IP}$ Harry to [$_{vP}$ Harry leave]]

    3. [$_{VP}$ persuaded [$_{IP}$ Harry to [$_{vP}$ Harry leave]]]

    4. [$_{vP}$ Harry persuaded [$_{IP}$ Harry to [$_{vP}$ Harry leave]]]

    5. [$_{vP}$ persuaded [$_{VP}$ Harry persuaded [$_{IP}$ Harry to [$_{vP}$ Harry leave]]]]

    6. [$_{vP}$ John persuaded [$_{VP}$ Harry persuaded [$_{IP}$ Harry to [$_{vP}$ Harry leave]]]]

    7. [$_{IP}$ John INFL [$_{vP}$ John persuaded [$_{VP}$ Harry persuaded [$_{IP}$ Harry to [$_{vP}$ Harry leave]]]]]

At step 1, *Harry* merges with *leave*, checking the θ-feature on the verb.   At step 2, it raises to the Spec of the embedded IP and checks its D-feature.   At step 3, *persuaded* merges with this complex, checking its propositional θ-role.   At step 4, *Harry* moves to the Spec of the matrix VP, where the second internal θ-role on *persuaded* is checked.   At step 5, the verb raises to the matrix v.   At step 6, *John* merges with the complex assembled at the preceding steps and checks the external θ-role on *persuaded*.   At step 7, *John* raises one last time to the Spec of the matrix IP, where the nominative Case feature on INFL and the EPP feature are checked as well as the Case feature on *John*.   At LF, *Harry* moves to where it can have its accusative Case checked, namely the outer Spec of the matrix vP.

       Let us finally consider the derivations of the NOC sentences in (53).

(53)a. It was believed that [PRO$_{arb}$ shaving] was important.

    b. John$_i$ thinks that it is believed that [PRO$_i$ shaving himself] is important.

      (Hornstein 1999 (6a) & (6b) p.73)

In the above examples, the control clauses occupy the subject position of the higher clause.[26]   Assuming that a subject clause is an island for A-movement, OC is impossible with these sentences, because it inevitably involves raising out of the control IP for Case. Thus, as the last resort, pro is inserted, which Hornstein assumes does not require any Case.   When pro is definite, it is interpreted as being coindexed/coreferential with another NP/DP, as in (53b).   When this element is indefinite, it is interpreted as being arbitrary, as in (53a).

       Hornstein then presents seven properties of OC.   Observe the following

sentences[27],[28]

     (54)a. *It was expected [PRO to shave himself].   (Hornstein 1999 (4a) p.73)

       b. *John$_i$ thinks that it was expected [PRO$_i$ to shave himself].
         (Hornstein 1999 (4b) p.73)

       c. *John's$_i$ campaign expects [PRO$_i$ to shave himself].
         (Hornstein 1999 (4c) p.73)

       d. *John$_i$ told Mary$_j$ [PRO$_{i+j}$ to wash themselves/each other.
         (Hornstein 1999 (4e) p.73)

       e. John expects [PRO to win], and Bill does too.
         interpretation: '..., Bill expects to win too.'
         interpretation: *'..., Bill expects John to win too.'
         (Hornstein 1999 (4d) p.73)

       f. The unfortunate expects [PRO to get a medal].
         ($\sqrt{}$de se reading/*de re reading)[29]
         (Hornstein 1999 (4f) p.73, adapted from Higginbotham 1992 (32) p.87)

       g. Only Churchill remembers [PRO giving the BST speech].
         interpretation: 'People other than Churchill do not remember themselves
         giving the BST speech.'
         interpretation: *'People other than Churchill$_i$ do not remember him$_i$ giving
         the BST speech.'
         (Hornstein 1999 (4g) p.73, adapted from Fodor 1975 (9) p.133)

Example (54a) shows that OC PRO must have an antecedent. Example (54b) indicates that such an antecedent must be "local". Example (54c) demonstrates that the antecedent must c-command PRO. Example (54d) shows that OC PRO cannot have split antecedents. Example (54e) indicates that OC PRO permits a sloppy reading but not a strict reading under ellipsis. Example (54f) demonstrates that OC PRO has a de se reading but not a de re reading in the relevant construction. Example (54g) shows that OC PRO allows a bound reading but not a referential reading when its antecedent contains the focus operator *only*.

      Hornstein argues that these seven properties can be accounted for if it is supposed that OC is a kind of A-movement. The first four properties follow straightforwardly from this assumption. OC PRO must have an antecedent, because movement trace must have an antecedent. Also, this antecedent must be "local" and c-command PRO, because an antecedent of NP-trace must conform to general A-chain

strictures as such.   OC PRO cannot have split antecedents, because one element cannot move to two distinct positions (Koster 1984).   Furthermore, the other properties can also be derived from the assumption that OC PRO is identical to NP-trace.   OC PRO permits only a sloppy reading, because it is only a sloppy reading that NP-trace permits. Observe example (55).

(55) Mary$_i$ seems [t$_i$ to be happy], and Sally does too.
    (Hornstein 1999 (20) p.80)

In the above sentence, the second conjunct is construed as, 'Sally seems to be happy too', and there is no other interpretation available.   Lastly, OC PRO has only a de se reading and allows only a bound reading, because movement to a θ-position semantically forms a compound reflexive predicate with two argument positions saturated by one and the same expression.

Another advantage of adopting the movement approach to OC is as follows. Hornstein believes that the Minimal Distance Principle (MDP) (Rosenbaum 1967) is descriptively adequate.   This principle claims that the NP/DP closest to the control clause in the tree is the controller.   Thus, with control constructions that contain two nominal arguments like (51), it is the object NP/DP that controls PRO.   In Hornstein's analysis, this is reduced to the Minimal Link Condition (MLC) (Chomsky 1995), which says that a derivation with shorter links is preferred over one with longer links.   Let us consider again the derivation of (51) with reference to phrase marker (56).

(56) vP
     P$_2$ v'
          v   VP
          persuaded   P$_1$ V'
                            V   IP
                            persuaded   [Harry to Harry leave]
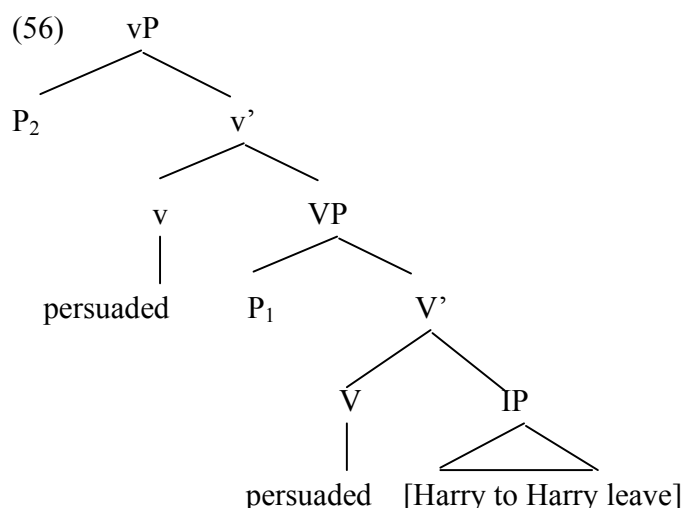
In (56) Harry moves to P$_1$, and John merges at P$_2$.   Now suppose that *John* merges at P$_1$.

Then *Harry* would raise to P_2, in which case subject control would obtain. However, this derivation is blocked, since the link between the lower copy of *Harry* and the higher copy of it is shorter in the former derivation than in the latter. As for subject control verbs with two nominal arguments such as *promise*, Hornstein argues that they are marked cases, as the MDP is treated as a markedness condition.

Hornstein maintains that reducing OC to movement allows for the virtual elimination of the control module and further simplification of the grammatical theory along the Minimalist lines. However, although his proposal indeed simplifies the grammar in one respect, it simultaneously raises a number of problems or at least forces us to adopt extra ad hoc assumptions. In what follows, I will take up these problems.

First of all, a conceptual question immediately arises. It has traditionally been believed that an NP/DP or the chain it heads has exactly one θ-role and exactly one Case. However, as indicated in (48d), Hornstein assumes that a chain can bear more than one θ-role, which he argues is the default hypothesis. Yet it is not necessarily obvious why this assumption is the default and does not require any independent support. This is especially so, considering that with respect to Case, he claims that an NP/DP cannot have more than one (Hornstein 1999: fn.27).

Hornstein's theory also suffers from empirical problems. First, although he treats *expect* as an OC verb, this verb allows what Landau (2000) calls partial control (PC). PC is a phenomenon in which the value of a controller is a proper subset of that of PRO. The effect is typically induced by a control predicate that requires a "plural" subject like ... *together* or intransitive *meet* combined with a singular controller. Consider example (57).

(57) Mrs. Robinson$_j$ divorced her husband$_i$. But he$_i$ still expected [PRO$_{i+j}$ to live together].

However, as pointed out by Landau (2000 & 2003), it is very difficult to explain such a phenomenon in the movement approach to OC. Observe the following example, where raising is embedded under a context that requires PC.

(58) Mrs. Robinson$_j$ divorced her husband$_i$. *But he$_i$ still appeared [t$_{i+j}$ to live together].

As illustrated in (58), raising does not permit PC (but see Bowers (2005), who claims that PC is possible with raising according to his judgments). If OC is really derived by

movement, as Hornstein argues, then it is natural to expect that the former exclude PC just as the latter does.[30]

By the same token, the movement approach cannot handle OC with split antecedents very neatly. As discussed above, Hornstein views the ban on split antecedents as one of the properties of OC. Indeed, as can be seen in (59a), split antecedents are impossible with OC when PRO is taken as the antecedent of a plural anaphor (see also (54d), but see Landau (2000) for a different claim). However, as already mentioned in section 3.3.1, in the absence of such an anaphor, split antecedents are permitted even with OC, as shown in (59b) (see also (16) and the examples in fn.14).

(59)a. *John$_j$ persuaded Mary$_i$ [PRO$_{i+j}$ to meet each other at six].
　　b. John$_j$ persuaded Mary$_i$ [PRO$_{i+j}$ to meet at six].

Perhaps more problematic for the movement approach to OC is a phenomenon called control shift. As already discussed in section 3.3.1, under certain circumstances, some verbs shift from subject control to what is ambiguous between subject control and object control, and still others shift from object control to subject control. The repeated pair in (18) is an example of the former, and that in (19) is an example of the latter.

(18)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].
　　b. Peter$_i$ promised Amy$_j$ [PRO$_{i/j}$ to be allowed to leave].
(19)a. Susie$_i$ persuaded the teacher$_j$ [PRO$_{*i/j}$ to leave early].
　　b. Susie$_i$ persuaded the teacher$_j$ [PRO$_{i/*j}$ to be allowed to leave early].

These instances are quite puzzling to the movement approach, since minimality is sometimes respected and at other times not by the same constructions of the same verbs.[31] As far as I know, there is no movement analogue of this sort of behavior.

Technically, Hornstein can get around all of the above problems by redefining OC so that it may not include control predicates with which the controller is not uniquely determined like *expect*, *persuade* and *promise*. However, even such a modification would not save his theory entirely. For example, *try* is one of the control verbs that require their infinitival subjects to be strictly identical with their matrix subjects. Thus, it does not allow PC, as shown in (60).

(60) *Bill$_i$ tried [PRO$_{i+j}$ to come together].

Still, as pointed out by Baltin (1995), raising verbs like *seem* and control verbs like *try* behave differently as to where they allow a floating quantifier in their complement clause. Consider the following pairs of examples.

(61)a. They seemed all to be friendly to us.[32]   (Baltin 1995 (67) p.224)

　　b. They seemed to all be friendly to us.

(62)a. ?*They tried all to be friendly to us.   (Baltin 1995 (71) p.224)

　　b. They tried to all be friendly to us.

As can be seen in (61), in raising, a quantifier can appear either before or after the infinitival marker *to*.   By contrast, in control, a quantifier must necessarily follow the infinitival marker, as in (62b), and putting the former before the latter would lead to ungrammaticality, as shown in (62a).[33]   The precise account of this phenomenon is not my immediate concern.   But suffice it to say here that a range of accounts is conceivable in a framework in which raising and OC are clearly distinguished.   On the other hand, it is very difficult to elucidate the above contrast even in the revised version of Hornstein's theory, which treats the two constructions alike.

Moreover, there is a piece of evidence to suggest that OC PRO is not a full copy of the controller.[34]   Consider the following example, assuming that *want* is an OC verb.[35]

(63) John and Mary expect each other to want [PRO to win].

Since in Hornstein's system, PRO in (63) is actually a copy of *each other*, which is its controller, this sentence should be semantically indistinguishable from (64), where PRO is replaced by an overt reciprocal.

(64) John and Mary expect each other to want each other to win.

However, the interpretations of the above two sentences are quite different from one another with respect to the lowest subjects.   That is, in (63) what John expects is that Mary will want herself to win, and what Mary expects is that John will want himself to win.   By contrast, in (64) what John expects is that Mary will want him to win, and what Mary expects is that John will want her to win.   This indicates that PRO in (63) is a different element from *each other*, which occupies the lowest subject position in (64).   Thus, OC PRO cannot be a full copy of the controller.   Rather, it is perhaps something

whose semantic function is similar to that of a reflexive, no matter what its controller may be. Therefore, the movement approach to OC, as stated in Hornstein (1999 & 2000), cannot be correct.[36]

Finally, Hornstein's analysis of NOC is not free from problems either. Since he identifies the silent category in NOC contexts with pro, it follows that it is viewed as a kind of pronominal. However, as will be discussed in section 3.5.1, NOC PRO behaves more like a logophor than a pronoun (see also Landau (2000 & 2001)).[37] For example, Hornstein (1999: fn.6) argues that NOC PRO can take an antecedent across a sentence boundary just like a pronoun, providing example (65a) (see Bresnan (1982), Mohanan (1983) and Sag & Pollard (1991) for the same claim).

(65)a. John$_i$ even shaved for the interview. [PRO$_i$ Making himself presentable] is very important to the success of the project.[38]
   (Hornstein 1999 (i) fn.6)
   b. John$_i$ even shaved for the interview. ?*[PRO$_i$ Making himself presentable] is very important to the success of our project.
   c. John$_i$ even shaved for the interview. His$_i$ making himself presentable is very important to the success of our project.

However, unlike a pronoun, NOC PRO allows such an intersentential antecedent in very limited environments. That is, it is generally restricted to contexts where the root clause does not contain any animate DP. This is evidenced by the fact that if *the project* in (65a) is replaced by *our project*, then the sentence becomes ill-formed, as illustrated in (65b). Note that the true pronoun *his* can take *John* in the preceding sentence as its antecedent even in this environment with no problem, as can be seen in (65c). Then the silent category in NOC contexts is not a pronominal like pro but something else, maybe PRO. If that is the case, then there is no reason why we must be forced to abandon PRO in OC contexts either.

Hornstein argues that PRO is superfluous in the grammar. If we eliminate it by reducing OC PRO to NP-trace and NOC PRO to pro, then the grammar would indeed be simplified in one way. But at the same time, we would be faced with such problems that I have pointed out in this subsection or at least have to postulate a number of ad hoc assumptions to clean up these problems. To conclude, there are more costs than benefits, in my view, in adopting a proposal like Hornstein's. In other words, if just assuming that PRO really exists could solve all such problems, then why not?

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3.3.4 Landau (2000)

Landau (2000) is a configurational theory of control within the Minimalist framework.   In this analysis, following Manzini (1983), PRO is viewed as an anaphoric element of sorts, and furthermore, following Borer (1989), this characterization is extended to nonfinite AGR.   Landau argues that OC is an instantiation of Agree of Chomsky (2000 & 2001).[39]   On the other hand, NOC is considered to be logophoric anaphora in the sense of Reinhart & Reuland (1993), namely anaphoric nonfinite AGR that fails to be syntactically licensed.

According to Landau, in OC, the matrix functional head (i.e. T in the case of subject control and v in the case of object control) first enters into an Agree relation with the controller.   It then enters into the second <u>Agree</u> relation with PRO, directly in the case of EC and via the nonfinite AGR, raised to the embedded C, in the case of PC. That is, the matrix functional head mediates the coindexation between the controller and PRO by establishing Agree relations with both.   These Agree relations enable PRO to be effectively interpreted as a variable bound by the controller.   As with many other authors (e.g. Chomsky 1981, Manzini 1983, Melvold 1985, Farkas 1988, Sag & Pollard 1991), in this approach, the choice between subject control and object control is a semantic/pragmatic one.

Importantly, <u>Agree</u> obeys the Phase Impenetrability Condition (PIC) of Chomsky (2000 & 2001).   The PIC says that for a given phase, only its head and its edge, (i.e. specifier(s) and adjunct(s)) are accessible to an operation outside this phase, where CP and vP are phases.   Therefore, in OC, the functional head (and the controller) must be within the phase that immediately dominates the phase of the control CP.[40]

<u>Agree</u> can freely apply into VP-complements and VP-specifiers, whereas it fails to penetrate IP-subjects and adjuncts due to the Condition on Extraction Domains (CED) of Huang (1982).   Thus, in OC, the nonfinite clause must be in the complement position or the specifier position of the matrix VP-shell at LF, otherwise NOC is obtained.   In Landau's system, this "nonfinite clause in the same VP-shell as the controller" condition replaces the traditional requirement that PRO must be c-commanded by the controller. Basically, my critique of his analysis is targeted at this loosening of the condition on OC.

Consider first the following paradigm of super-equi constructions, the study of which originates in Grinder (1970).

(66)a. Mary$_j$ knew [that it disturbed John$_i$ [PRO$_i$ to perjure himself/*PRO$_j$ to

perjure herself].

b. Mary$_j$ knew [that it damaged John$_i$ [PRO$_i$ to perjure himself/PRO$_j$ to perjure herself].

c. Mary$_j$ knew [that [PRO$_i$ perjuring himself/PRO$_j$ perjuring herself] disturbed John$_i$].

d. Mary$_j$ knew [that [PRO$_i$ perjuring himself/PRO$_j$ perjuring herself] damaged John$_i$].

(Landau 2000 (2a), (2b), (2c) & (2d) p.92)

Two parameters are concerned in determining the well-formedness of these sentences. One is the syntactic position of the nonfinite clause, namely intraposition vs. extraposition. The other is the kind of predicate that governs it, namely psychological vs. non-psychological.[41] Thus, when the nonfinite clause is extraposed, "long-distance" control is ungrammatical with psychological predicates, as shown in (66a), but grammatical with non-psychological ones, as can be seen in (66b). This contrast is neutralized, however, when the nonfinite clause is intraposed, as illustrated in (66c) and (66d).

Landau makes a case that though intraposed variants are uniformly NOC, sentences involving extraposition can be OC, so long as their nonfinite clauses are construed VP-internally. He postulates LF representations (67a)-(67d) for examples (66a)-(66d), respectively. Assuming the shell structure of Larson (1988) for psychological constructions, in (66a) the infinitival clause is not extraposed in the real sense but is base-generated VP-peripherally in the first place, as schematized in (67a). In this construction, the infinitive remains inside the VP throughout the derivation. Landau supposes that extraposition is an operation to displace a subordinate clause to a VP-peripheral position at PF and that no vacuous movement is permitted for economy reasons. Hence, this sentence is OC, which is why "long-distance" control is blocked.

Example (66b), as shown in (67b), has two copies of the infinitive at LF, either of which may be selected for interpretation. If the VP-internal base copy gets interpreted (i.e. A'-reconstruction), then it triggers OC. If, on the other hand, the VP-external extraposed copy is chosen for interpretation, then it results in NOC.

In (66c) and (66d) the infinitives move to the Spec of IP to satisfy the EPP, escaping the domain of OC. As Landau (2000: 103) puts it, 'This is an instance of A-movement, and we may assume (following Chomsky 1995) that unless special circumstances demand otherwise, it is the higher link of the chain that gets interpreted'.

(67) a.

```
                    IP
              ┌──────┴──────┐
             DP             I'
            ╱◺╲       ┌──────┴──────┐
           it         I            VP
                                   │
                                   V'
                             ┌─────┴─────┐
                             V           VP
                             │      ┌─────┴─────┐
                         disturbedᵢ DP          V'
                                  ╱◺╲      ┌────┴────┐
                                 John      V         CP
                                           │        ╱◺╲
                                           tᵢ     PRO ...
```

b.

```
                         IP
                   ┌──────┴──────┐
                  DP             I'
                 ╱◺╲       ┌──────┴──────┐
                 it         I            VP
                                   ┌──────┴──────┐
                                  VP             CP
                            ┌──────┴──────┐     ╱◺╲
                           CP            V'   [PRO ...]₁
                          ╱◺╲       ┌────┴────┐
                      [PRO ...]₁    V         DP
                                    │        ╱◺╲
                                 damaged     John
```

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c.

```
                    IP
                  /    \
                CP      I'
               /\      /  \
        [PRO ...]₁    I     VP
                      |      |
                             V'
                            /  \
                           V    VP
                           |    /  \
                    disturbedᵢ  DP    V'
                              /\     /  \
                            John    V    CP
                                    |    |
                                    tᵢ   t₁
```

d.

```
                    IP
                  /    \
                CP      I'
               /\      /  \
        [PRO ...]₁    I     VP
                      |    /  \
                          CP    V'
                          |    /  \
                          t₁   V    DP
                               |   /\
                           damaged John
```
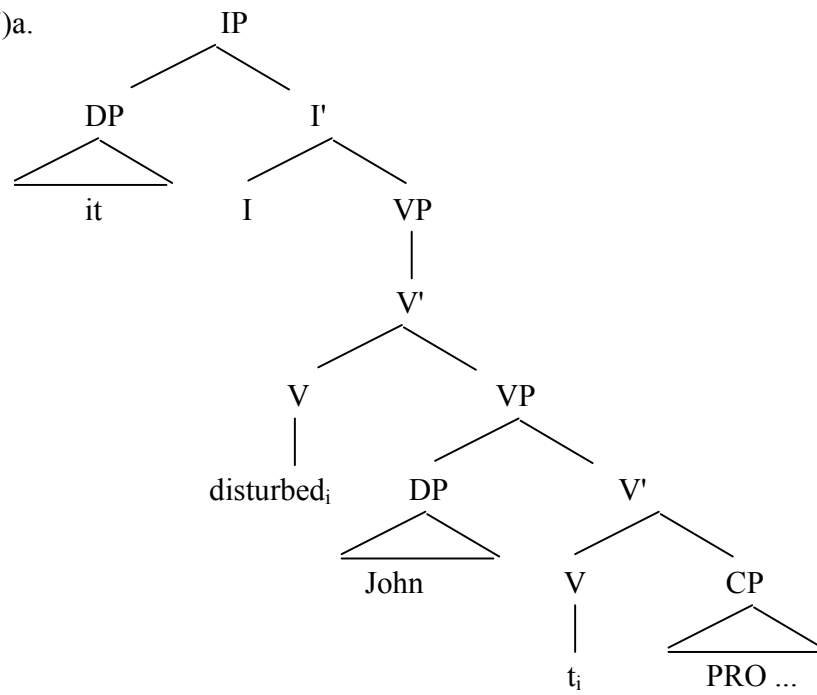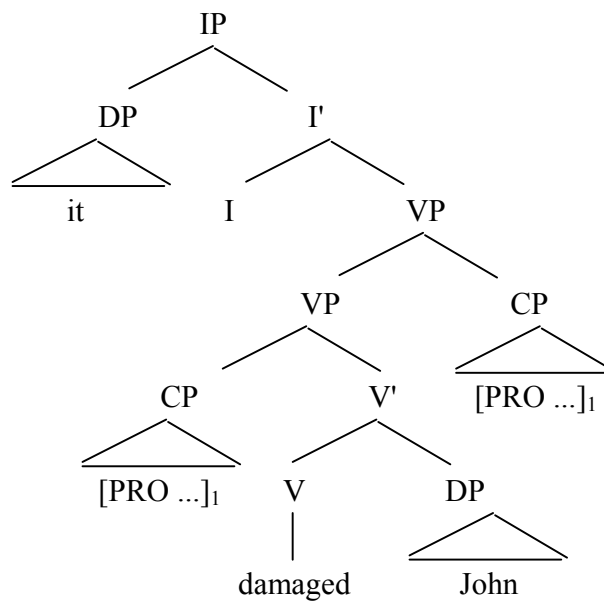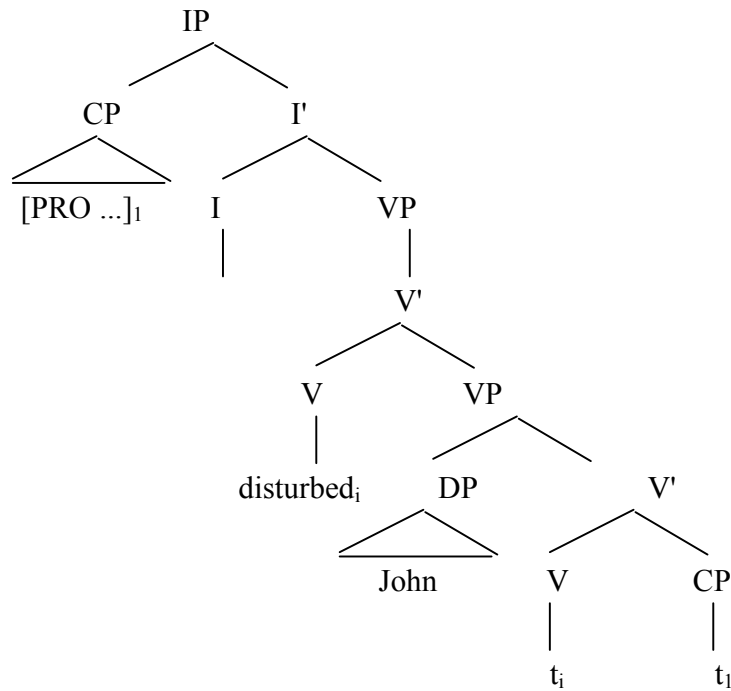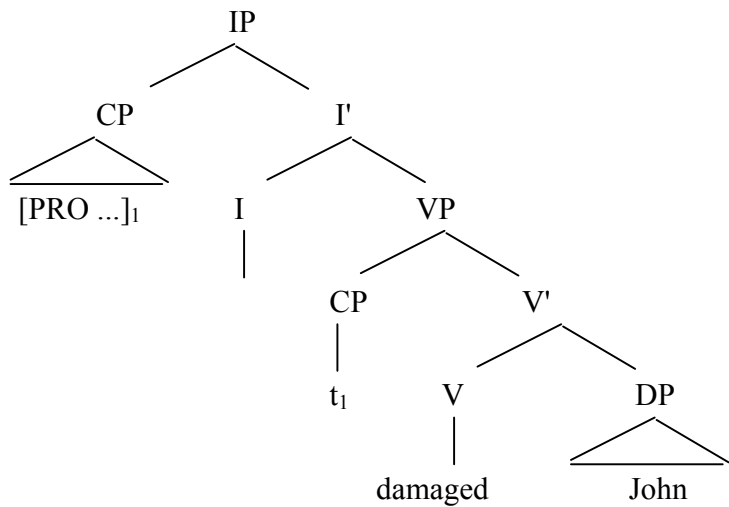
Now, before getting into the review of Landau's proposal, the above data need some brief comments.   It appears that the "long-distance" control in sentence (66a) is not sharply ungrammatical.   In fact, many of my informants judged it to be in the acceptable range.   This is different from typical OC behavior, which strictly disallows "long-distance" control, as shown in (68).

(68) *Harryᵢ thinks [that Sarah tried [PROᵢ to speak his mind in public]].

Therefore, the above-mentioned vague judgment on (66a) is quite puzzling if it is really OC, as Landau claims.

Let us then start a full-scale critique by considering the non-psychological variant whose infinitive is extraposed. Observe the following examples, in which the controllers of PRO are embedded in matrix Goal arguments.

(69)a. It would help Bill's$_i$ development [PRO$_i$ to behave himself in public].
     (Manzini 1983 (42) p.426)
  b. ?*It would help Bill's$_i$ company [PRO$_i$ to behave himself in public].
  c. *It would help Bill's$_i$ friends [PRO$_i$ to behave himself in public].
     (Landau 2000 (42a) p.110)

While (69b) and (69c) are ill-formed, sentence (69a) is grammatical. What is more, this construction licenses *wh*-extraction from the infinitival clause, as can be seen in (70).

(70) Which language is it crucial for Bill's$_i$ success [PRO$_i$ to teach himself]?
     (Landau 2000 (45b) p.111)

For Landau, extractability from the embedded clause is a sign that the VP-internal copy is used for the interpretation of the infinitive. If the VP-external copy is construed, then extraction should be blocked (see section 3.6.2.1, as well as Landau (2000), for more on this issue). Thus, this construction must be a genuine instance of OC.

In Landau's framework, it is crucial that the controller in OC is a real argument of the matrix predicate. Yet in the above examples, the controllers are only part of such arguments. Hence, he proposes that inalienably possessed nouns like *development*, *image* and *success* inherit indices from their possessors, since the former are referentially inseparable from the latter.

However, this "index inheritance" does not seem to be a general property of OC. Rather, OC PRO appears to be subject to the strict c-command requirement, as traditionally argued. Observe the examples below, in which one of the representative OC berbs *manage* is used.

(71)a. Jim$_i$ managed [PRO$_i$ to come to his senses after having given in to the temptation].
  b. *Jim's$_i$ soul managed [PRO$_i$ to come to his senses after having given in to the temptation].

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c. Jim's soul$_i$ managed [PRO$_i$ to find its way out of delusion].

In (71a) the controller is the matrix subject *Jim*, which c-commands PRO, and the sentence is well-formed. In (71b) the controller is again *Jim* but does not c-command PRO, because it is the possessor of the inalienably possessed noun *soul*, which heads the subject. Crucially, the sentence is excluded. Thus, control does not work in this construction as if the head noun inherited an index from its possessor. Note that the problem here is not one of a selectional restriction imposed by the matrix verb on its subject, since (71c) is grammatical, where the same matrix subject and the same matrix verb are used.

Furthermore, consider the examples in (72), in which the infinitives are intraposed rather than extraposed.

(72)a. [PRO$_i$ To behave himself in public] would help Bill's$_i$ development.
   b. ??[PRO$_i$ To behave himself in public] would help Bill's$_i$ company.
   c. ?*[PRO$_i$ To behave himself in public] would help Bill's$_i$ friends.

In Landau's system, or perhaps in anyone's system, intraposed variants are uniformly NOC. A little less sharp though it may be, virtually the same contrast can be observed in the above paradigm as well.[42] Therefore, whatever may render (69a) well-formed on one hand and (69b) and (69c) ill-formed on the other, it is not a property of OC but a property of NOC.

Moreover, I believe that inalienable possession cuts the relevant data in the wrong way. Observe the following examples.

(73)a. It would hurt John's$_i$ image [PRO$_i$ to shave himself too often].
   b. ?*It would hurt John's$_i$ razor [PRO$_i$ to shave himself too often].
   c. ??It would hurt John's$_i$ face [PRO$_i$ to shave himself too often].

In (73a) the head noun is the inalienably possessed noun *image*, and the sentence is grammatical. By contrast, in (73b) the head noun is *razor*, which is not inalienable, and the sentence is ill-formed. However, in (73c), despite its inalienability, the noun *face* more or less patterns with the latter rather than with the former. Thus, I suppose that the correct generalization is that while nouns like *development*, *image*, *success* and *soul* have a high degree of abstraction in meaning, those like *company*, *friend*, *razor* and *face* refer to concrete objects, which one can actually see and point to, for example.

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Overall, Landau's approach to control makes the right predictions in most cases. However, his system occasionally categorizes constructions that do not behave like OC under OC.   I believe that it is because his "nonfinite clause in the same VP-shell as the controller" is too weak as the condition on OC.   Instead, we probably need the traditional strict c-command requirement for OC constructions.

3.3.5 Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005)

Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005) (henceforth J&C and C&J) take a radical semantic approach to control.   They argue that the answers to most of the questions posed by control constructions can be found in the realm of semantics rather than in the realm of syntax.   To begin with, they replace the traditional OC/NOC dichotomy with the three-way distinction: unique control, free control and nearly free control.   Consider first the following examples.

(74)a. Sally$_i$ didn't bother to $_i$[43]take better care of herself.
   b. Sally$_i$ promised Ben$_j$ to $_i$take better care of herself/*$_j$take better care of himself.   (Jackendoff & Culicover 2003 (19b) p.523)
   c. Sally$_i$ persuaded Ben$_j$ to $_i$take better care of herself/$_j$take better care of himself.   (Jackendoff & Culicover 2003 (19a) p.523)

In (74a) the controller of the subject of the complement infinitive is the matrix subject *Sally*.   In (74b), while there are two potential controllers in the sentence: the subject *Sally* and the object *Ben*, it is only the former but not the latter that can control the infinitival subject.   In (74c), on the other hand, exactly the opposite is true, though the apparent structure is basically the same as in (74b).   As one of the properties of these constructions, they do not allow "long-distance" control.   Observe the examples in (75).

(75)a. *Amy$_i$ thinks [that Ben didn't bother to $_i$take better care of herself].
   b. *Amy$_i$ thinks [that Ben promised Fred to $_i$take better care of herself].
      (Jackendoff & Culicover 2003 (19e) p.523)
   c. *Amy$_i$ thinks [that Ben persuaded Fred to $_i$take better care of herself].
      (Jackendoff & Culicover 2003 (19e) p.523)

Furthermore, these constructions do not allow what J&C and C&J call generic control,

which is equivalent to arbitrary control in the Principles and Parameters framework. Observe the examples in (76).

(76)a. *Sally didn't bother to $_{gen}$take better care of oneself.

b. *Sally promised Ben to $_{gen}$take better care of oneself.
(Jackendoff & Culicover 2003 (19d) p.523)

c. *Sally persuaded Ben to $_{gen}$take better care of oneself.
(Jackendoff & Culicover 2003 (19d) p.523)
(where gen stands for generic)

Thus, these constructions license neither "long-distance" control nor generic control. J&C and C&J refer to this type of control as unique control,[44] which corresponds to obligatory control in the Principles and Parameters framework.

Consider next the following examples.

(77)a. $_i$Taking better care of himself would help Ben$_i$.

b. It would help Ben$_i$ to $_i$take better care of himself.

In the above sentences, it is the object *Ben* that controls the subject of the infinitive or the gerund.   As shown in (78), these constructions do allow "long-distance" control.

(78)a. Amy$_i$ thinks [that $_i$taking better care of herself would help Ben].

b. Amy$_i$ thinks [that it would help Ben to $_i$take better care of herself].

Furthermore, these constructions also allow generic control, as can be seen in (79).

(79)a. $_{gen}$Taking better care of oneself would help Ben.

b. It would help Ben to $_{gen}$take better care of oneself.

Thus, these constructions license both "long-distance" control and generic control.   J&C and C&J refer to this type of control as free control, which corresponds to non-obligatory control in the Principles and Parameters framework.

Consider finally the following example.

(80) Sally$_i$ discussed $_i$taking better care of herself.

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In (80), just as in (74a) and (74b), the controller of the gerundive subject is the matrix subject *Sally*. As shown in (81), this construction does not allow "long-distance" control.

(81) *Amy$_i$ thinks [that Ben discussed $_i$taking better care of herself].[45]

However, this construction does allow generic control, as can be seen in (82).

(82) Sally discussed $_{gen}$taking better care of oneself.

Thus, this construction licenses generic control but not "long-distance" control. J&C and C&J refer to this type of control as nearly free control.

J&C and C&J's major claim is that the control behavior of a given construction is determined by the semantic type of the infinitive/gerund that the control head selects for and the semantics of the head itself. First, a control head that selects for an infinitive/gerund denoting a voluntary action exhibits unique control. Observe the examples in (83), in which the unique control heads *bother*, *promise* and *persuade*, respectively, reject the VP *grow taller*, which does not denote a voluntary action, as their infinitival complement.

(83)a. #Fred didn't bother to grow taller.
   b. #Fred promised Louise to grow taller.[46]
      (Culicover & Jackendoff 2005 (38b) p.431)
   c. #Fred persuaded Louise to grow taller.
      (Culicover & Jackendoff 2005 (38b) p.431)

As for the difference between double complement verbs that exhibit subject control and those that exhibit object control, J&C and C&J argue that what determines the choice of controller is the meaning of the control head. Namely, their argument is that there could not be a control verb that meant the same thing as *promise* but did not exhibit subject control, for example. Conversely, there could not be a control verb that meant the same thing as *persuade* but did not exhibit object control.[47]

However, such an approach is apparently inconsistent with control shift. Consider the examples below (see also (18) and (19)).[48]

(84) Susan$_j$ was promised (by John$_i$) to $_{*i}$be allowed to take care of himself/$_j$be

allowed to take care of herself.   (Jackendoff & Culicover 2003 (44) p.530)

(85)a. Peter$_i$ asked Amy$_j$ to $_{*i/j}$leave.   (Also appeared as (11b) ch.1 p.6)

  b. Peter$_i$ asked Amy$_j$ to $_{i/*j}$be allowed to leave.

While *promise* normally exhibits subject control, as shown in (74b), in (84) it is the Goal argument (=the underlying object) that controls the subject of the infinitive.[49]   On the other hand, while *ask* usually exhibits object control, as can be seen in (85a), in (85b) its controller is shifted to the subject.   With respect to such instances, J&C and C&J explain that some extra material is introduced by the conventionalized principle of coercion. Specifically for the above cases, they propose that the complement infinitives are overlaid with something like 'enable someone to'.   As a result, sentence (84) is interpreted as in (86), and (85b) is construed as in (87).

   (86) Susan$_j$ was promised (by John$_i$) to $_i$enable her$_j$ to be allowed to take care of
     herself.

   (87) Peter$_i$ asked Amy$_j$ to $_j$enable him$_i$ to be allowed to leave.

Therefore, (84) is still (underlying) subject control, and (85b) is still object control, at the level of semantics.

   Turning to constructions that exhibit free control and nearly free control, their infinitival/gerundive arguments do not have to denote voluntary actions.   Thus, as shown in (88a) and (88b), *grow taller* can be used as an argument of the free control verb *help*.   Also, as can be seen in (89), it can be used as the complement of the nearly free control verb *discuss*.

   (88) Growing taller would help Louise.

    b. It would help Louise to grow taller.

   (89) Fred discussed growing taller.

Furthermore, J&C and C&J note that heads that exhibit nearly free control are restricted to verbs of communication or thought (e.g. *discuss ...ing*, *talk about ...ing*, *think about ...ing*) and nouns that denote information-bearing objects (e.g. *book about ...ing*, *paper about ...ing*, *hypothesis about ...ing*).

   My reaction to J&C and C&J's radical semantic approach to control is in a way mixed.   On the one hand, I am quite sympathetic to their attitude to seek in semantics clues to the puzzle of how the controller is selected with double complement verbs like

promise and *persuade* (see section 4.2 for my view on this issue, which is slightly different from J&C and C&J's).   On the other hand, I believe that it is unreasonable to assume that what distinguishes unique control from the other types of control is a semantic factor such as the selectional restriction that the infinitival/gerundive argument should denote a voluntary action.   In fact, J&C and C&J themselves realize that such a selectional restriction is inadequate as the only source of unique control.   Observe the example below.

(90) Nancy hopes to grow taller.   (Jackendoff & Culicover 2003 (26b) p.525)

As indicated in (90), *hope* can select for an infinitive that does not denote a voluntary action.   Nevertheless, it does not allow "long-distance" control, as shown in (91a), nor generic control, as can be seen in (91b).

(91)a. *Judy_i thinks [that Henry hopes to _iredeem herself].
        (Jackendoff & Culicover 2003 (109a) p.551)
     b. *Judy thinks [that Henry hopes to _genredeem oneself].
        (Jackendoff & Culicover 2003 (109a) p.551)

Therefore, J&C and C&J argue that there is another semantic factor that makes *hope* a unique control verb.   Specifically, they suggest that it is being an experiencer verb that is the relevant factor.

However, such an approach is highly questionable for two reasons.   First, it is only when it selects for an infinitival complement that this verb exhibits a unique control-like effect.   Consider the following examples, in which the infinitival complements in (91) are replaced by their finite counterparts.

(92)a. Judy_i thinks [that Henry hopes that she_i will redeem herself].
     b. Judy thinks [that Henry hopes that one can redeem oneself].[50]

I believe that *hope* is still an experiencer verb in (92).   Nonetheless, the requirement that its complement subject must be identical with its matrix subject is absent here.   Thus, whatever may make *hope* with an infinitival complement a unique control verb, it is quite unlikely that it is its semantics like being an experiencer verb that is relevant.

Moreover, although J&C and C&J's proposal might provide a potential solution for the dilemma posed by *hope*, it does not eliminate the problem on the fundamental

level. Namely, predicates that do not select for an actional argument but exhibit unique control are not restricted to experiencer verbs. First, observe the examples in (93).

(93)a. Fred managed to grow taller.
   b. Fred will be able to grow taller.
   c. Fred admitted having grown taller.
   d. Fred claimed to have grown taller.
   e. Fred denied having grown taller.

The above sentences demonstrate that *manage*, *be able to*, *admit, claim* and *deny*, which are all non-experiencer predicates, can take an infinitive that does not denote a voluntary action as their complement. Nevertheless, these predicates exhibit the unique control effect. That is, as shown in (94), they do not license "long-distance" control, and as can be seen in (95), they do not allow generic control.

(94)a. *Amy$_i$ thinks [that Ben managed to $_i$take better care of herself].
   b. *Amy$_i$ thinks [that Ben will be able to $_i$take better care of herself].
   c. *Amy$_i$ thinks [that Ben admitted $_i$having taken better care of herself].
   d. *Amy$_i$ thinks [that Ben claimed to $_i$have taken better care of herself].
   e. *Amy$_i$ thinks [that Ben denied $_i$having taken better care of herself].
(95)a. *Sally managed to $_{gen}$take better care of oneself.
   b. *Sally will be able to $_{gen}$take better care of oneself.
   c. *Sally admitted $_{gen}$having taken better care of oneself.
   d. *Sally claimed to $_{gen}$have taken better care of oneself.
   e. *Sally denied $_{gen}$having taken better care of oneself.

Of course, one can postulate yet another semantic reason why they exhibit unique control for each of these predicates. For example, one can say that for *manage*, it is because the predicate is implicative, for *be able to*, because the predicate is modal, for *admit*, because the predicate is factive, and for *claim* (and perhaps also for *deny*), because the predicate is propositional. However, this is not an explanation but simply a stipulatory list that enumerates types of predicates that exhibit unique control.

Furthermore, according to J&C and C&J's analysis, the control pattern of a given control head should be constant across languages so long as its semantics is the same. However, there are cases where a control verb in one language and its equivalent in another appear to behave alike at first glance, but their control patterns are subtly

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different on closer inspection.   Consider first the following Japanese sentences.

(96)a. Tantei$_i$-ga　　　irainin-ni　[konsyuutyuu-ni ziken-o
　　　detective$_i$-Nom   client-Dat   [this.week-in　 case-Acc
　　　$_i$kaiketu-su-ru-to]　　　　　yakusoku-si-ta.
　　　$_i$solution-do-Nonperf-Comp]   promise-do-Perf
　　　'The detective$_i$ promised his client to solve the case during this week.'

b. Koutyou-ga　　　sono seito$_i$-ni　[sibaraku　　ie-de
　　　principal-Nom   that pupil$_i$-Dat   [for.a.while   home-at
　　　$_i$ryouyou-su-ru-you]　　　　　motome-ta.
　　　$_i$recuperation-do-Nonperf-Subj]   beg-Perf
　　　'The principal begged the pupil to stay at home for a while to recuperate.'

At first sight, (96a) looks like a typical subject control example, and (96b) like a typical object control example.   Yet these control patterns can be somewhat relaxed, as shown in (97).

(97)a. Tantei$_i$-wa　　　[hisyo-ga　　　　irainin-ni [konsyuutyuu-ni ziken-o
　　　detective$_i$-Top   [secretary-Nom   client-Dat [this.week-in　　 case-Acc
　　　$_i$kaiketu-su-ru-to]　　　　　yakusoku-si-ta-to]
　　　$_i$solution-do-Nonperf-Comp]   promise-do-Perf-Comp]
　　　omot-te-i-ta.
　　　think-Prt-Prog-Perf
　　　'The detective$_i$ thought that his secretary had promised his client that he$_i$ would solve the case during this week.'

b. Koutyou-ga　　　sono seito$_i$-no　ryousin-ni　[sibaraku　ie-de
　　　principal-Nom   that pupil$_i$-Gen   parents-Dat   [for.a.while home-at
　　　$_i$ryouyou-su-ru-you]　　　　　motome-ta.
　　　$_i$recuperation-do-Nonperf-Subj]   beg-Perf
　　　'The principal begged the pupil's$_i$ parents that he$_i$ stay at home for a while to recuperate.'

In the above sentences, it is not the case that the subject or the object per se controls the silent subject of the complement clause.   Rather, it is simply that the referent of the subject in the case of *yakusokusuru* 'promise' and that of the object in the case of *motomeru* 'beg' are in a position with influence over the referent of the subordinate

subject. This phenomenon is first reported by Uchibori (2000) and is termed semi-control (see section 4.2.4 for more on this subject). Crucially, however, such a loosening of the control pattern is not available in English. Consider the examples in (99) as compared with those in (98).

(98)a. The detective$_i$ promised his client [to $_i$solve the case during this week].

b. The principal begged the pupil$_i$ [to $_i$stay at home for a while to recuperate].

(99)a. *The detective$_i$ thought [that his secretary had promised his client [to $_i$solve the case during this week]].

b. *The principal begged the pupil's$_i$ parents [to $_i$stay at home for a while to recuperate].

Of course, one can maintain that Japanese *yakusokusuru* and English *promise* are not semantically equivalent, nor are *motomeru* and *beg*. But as far as I can tell, there is no significant difference in meaning between the two verbs in each pair that may account for their divergent control behaviors.

Lastly, J&C and C&J's theory also predicts that with respect to unique control verbs that take a gerundive complement, they should still exhibit the unique control effect even if the gerund is displaced out of the object position. Yet this prediction is false, as discussed in section 3.3.2. Observe the repeated examples below.

(47)a. Geoffrey$_i$ believes [that his children$_j$ will remember [PRO$_{*i/j}$ climbing Mt. Everest]].

c. Geoffrey$_i$ believes [that [PRO$_i$ climbing Mt. Everest] will be remembered φ_{by} pro$_j$].

To conclude, J&C and C&J are probably right in that with double complement verbs such as *promise* and *persuade*, it is their semantics that determine which of the two arguments is chosen as the controller. However, for unique control, there seems to be extra machinery that sets up a "local" domain and requires the controller to be within this range, which is independent of semantics. In the Principles and Parameters approach, this machinery is called OC PRO.

3.4 OC and PRO in OC Contexts

In the preceding section we saw some of the existing approaches to the OC/NOC distinction that have emerged in the literature.   In the present section and the following one, I will spell out my own analysis of this issue.   First, this section will deal with OC[51], whose licensing mechanism I will argue is the Chain Condition, introduced in section 2.5. The discussion of NOC will be deferred until section 3.5.

3.4.1 A Unified Approach to OC and Anaphor Binding

3.4.1.1 The OC Hypothesis

Up to this point, we have provisionally understood that OC is control in which PRO has a "local" antecedent or controller, setting aside the issue of how to define "locality".   This is reminiscent of anaphors in argument positions of syntactic predicates[52], because such anaphors, as is well known, also require a local antecedent. In this subsection I will rigorously define OC and clearly specify the "local" domain of PRO.

As argued in chapter 2, anaphors need to be formally licensed due to their referential deficiency.   With respect to anaphors in argument positions of syntactic predicates, licensing is carried out by the Chain Condition, which is manifested as the requirement of an antecedent in their local domain, called the A-Chain Projection Domain (ACPD).   It is obvious that PRO in OC contexts is also referentially defective, since by definition, it never directly picks up a referent from the real world like a pronoun. Instead, it takes an antecedent in its "local" domain, which supplies it with referential content.   It would not be surprising then if the Chain Condition were also the licensing mechanism for OC PRO.   Let us call this the OC hypothesis and formally express it as follows.

(100) The OC Hypothesis:
    OC is control in which PRO is licensed by the Chain Condition.

The remainder of this section will be devoted to verifying the validity of this hypothesis.   In the next subsubsection I will briefly review my version of chain theory as a preliminary step.

3.4.1.2 Chain Theory

The Chain Condition is a condition that restricts the distribution of A-chains. All and only DPs in argument positions of syntactic predicates form A-chains, including those that do not have any antecedent-anaphor relation with other elements (such elements constitute trivial chains).

The Chain Condition is formulated derivationally in terms of the R-property of the maximal A-chain link, as shown in (101).

(101) The Derivational Condition on A-Chains:

A maximal A-chain link α_r, when its ACPD is determined, must either

a. itself be -R and have an antecedent link α_s in this domain, or

b. itself be both +R and Case-marked

(Also appeared as (91) ch.2 p.54)

R is a syntactic property of referential independence, and having the positive value of this property is a necessary condition for an expression to function as an independent argument. It is standardly assumed that R-expressions, lexical pronouns, PRO, pro and A'-trace are +R and that lexical anaphors and NP-trace are -R. Chain formation is checked whenever the ACPD of a maximal A-chain link is determined. If an A-chain link is -R, then it must find an antecedent link in its ACPD. If it is +R, then it must be Case-marked.

Furthermore, the ACPD is defined as given in (102).

(102) A-Chain Projection Domain (ACPD):

Let P_1 and P_2 be argument positions of syntactic predicates, then

P_2 is in the A-Chain Projection Domain of P_1, iff P_2 c-commands P_1, and

a. P_1 and P_2 are arguments of the same syntactic predicate, or

b. P_1 is at the A-edge (i.e. in the highest A-position) of a syntactic predicate that is immediately contained by the syntactic predicate of P_2, and the former predicate is selected by the head of the latter.

(Also appeared as (63) ch.2 p.39)

To visualize this, P_2 is in the ACPD of P_1 in either of the following two configurations.

(103)a. [$_{SP}$ ... P_2 ... P_1 ...]

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b. [$_{SP_2}$ ... P$_2$ ... [$_{SP_1}$ ... (*P$_3$) ... P$_1$ ...]]

(where the head of SP$_2$ selects SP$_1$)

Namely, as in (103a), P$_2$ is an argument of the same syntactic predicate as P$_1$. Or as in (103b), P$_2$ is an argument of a syntactic predicate the head of which selects the syntactic predicate of P$_1$, and there is no A-position P$_3$ that is an argument of the latter predicate and c-commands P$_1$.

However, it turns out that this chain theory, as it is, is not compatible with the OC hypothesis in (100). Thus, I will make a minor amendment to it in the next subsubsection.

3.4.1.3 The R-Property of PRO in OC Contexts and the Derivation of OC Sentences

In the traditional version of chain theory (e.g. Chomsky 1986a & 1986b and Rizzi 1990a), PRO is supposed to head an A-chain. This is because PRO itself is assigned a θ-role in its base position, while it is assumed that an A-chain must have exactly one θ-role. That is, a controller assumes its own θ-role as well, and if PRO and its controller were to come together to form a single A-chain, this chain would improperly contain two θ-roles.

This view does not change in Reinhart & Reuland (1993), upon which my version of chain theory is based. Thus, as mentioned in the preceding section, PRO is treated as +R, whereby it heads an A-chain. However, in Reinhart & Reuland's chain theory, the θ-requirement has already been dropped. Therefore, there is no reason why we have to cling to the idea that PRO is the head of an A-chain.

The gist of the OC hypothesis is that PRO in OC contexts is referentially defective and therefore must be licensed by the Chain Condition. Thus, in order for this hypothesis to fall into place, PRO, at least in OC contexts, has to be -R. In fact, this would make more sense, since OC PRO cannot stand as an independent argument. So let us modify my version of chain theory and suppose that PRO in OC contexts is -R just like an anaphor. At the same time, it follows that the local domain of OC PRO is its ACPD. In what follows, I will discuss how OC sentences are derived, using some concrete examples. Specifically, my particular interest lies in how the controller of OC PRO is determined.

Consider first sentence (104), whose derivation is depicted in (105).

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(104) Mary$_i$ managed [PRO$_i$ to win].

(105) The Derivation of *Mary$_i$ Managed [PRO$_i$ To Win]*:

    1. PRO win

    2. to PRO win

    3. PRO$_i$ to t$_i$ win

    4. managed PRO$_i$ to t$_i$ win

    5. Mary managed PRO$_i$ to t$_i$ win

    6. Mary$_j$ t$_j$ managed PRO$_i$ to t$_i$ win

At the first step, PRO and the verb *win* are merged together to form a VP, with which *to* is merged at step 2.   At step 3, PRO moves to the Spec of the infinitival IP, leaving an NP-trace behind.   Since PRO is in the highest A-position of this syntactic predicate, its ACPD is the next syntactic predicate up, which is still undecided at this point.   Then at step 4, the control verb *managed* is merged with this complex.   At step 5, the matrix subject *Mary* is merged, whereby the ACPD of PRO is determined to be the matrix VP. Because *Mary* is the only potential antecedent link in this domain, it is automatically chosen as the controller of PRO.   Finally, at step 6, *Mary* raises to the Spec of the matrix IP.

    Furthermore, even if the control clause is embedded under an ECM construction, as in (106), the situation is basically the same.   Observe the derivation in (107). (Although I assume that *Mary* moves to the Spec of some functional projection to get accusative Case, and *believe* raises past this functional head, these movements are left out for simplification.)

(106) We believe Mary$_i$ to be trying [PRO$_i$ to win].

(107) The Derivation of *We Believe Mary To Be Trying [PRO To Win]*:

    1. PRO win

    2. to PRO win

    3. PRO$_i$ to t$_i$ win

    4. trying PRO$_i$ to t$_i$ win

    5. Mary trying PRO$_i$ to t$_i$ win

    6. be Mary trying PRO$_i$ to t$_i$ win

    7. to be Mary trying PRO$_i$ to t$_i$ win

    8. Mary$_j$ to be t$_j$ trying PRO$_i$ to t$_i$ win

    9. believe Mary$_j$ to be t$_j$ trying PRO$_i$ to t$_i$ win

    10. We believe Mary$_j$ to be t$_j$ trying PRO$_i$ to t$_i$ win

11. We$_k$ t$_k$ believe Mary$_j$ to be t$_j$ trying PRO$_i$ to t$_i$ win

Just as in the previous case, here, the ACPD of PRO is fixed at the fifth step, which is the middle VP. This domain contains only *Mary* as a potential antecedent link, and any element merged afterwards does not alter the controller choice. Therefore, this DP controls PRO. Incidentally, it is worth noting that in the present system, when the control clause is merged as the complement of a syntactic predicate, PRO in it necessarily finds an antecedent link within this syntactic predicate, hence always exhibiting OC.

Some readers might be concerned that in OC sentences like (104) and (106), the infinitival clause may actually be CP, which functions as a barrier for A-chain formation. Whether a control clause is IP or CP is a difficult question to answer empirically.[53] But broadening our horizons outside standard English, it is evident that there are at least some cases where the control clause in OC is clearly CP. Consider the Belfast dialect of English in (108a) and the Dutch in (108b).

(108)a. I$_i$ tried [$_{CP}$ for PRO$_i$ to get them].   (Belfast dialect)
   (Henry 1992 (11) p.283)
   b. Jon$_i$ probeerde [$_{CP}$ om   PRO$_i$ de kamer   te verlaten].
   Jon$_i$ tried   [$_{CP}$ Comp   PRO$_i$ the room   to leave]
   'John tried to leave the room.'

In the above sentences, the infinitival clause has the complementizer *for* in (108a) and *om* in (108b) (similar facts can also be observed in Romance languages). Hence, it must be CP of sorts rather than just IP.

However, this CP layer does not interfere with the formation of A-chains in my version of chain theory. As discussed in section 2.5.2, in the present system, CP does not constitute a barrier for A-chain formation, and the ACPD is defined solely in terms of syntactic predicates. Thus, even if the control clause proves to be CP in (104) and (106), an A-chain relation is properly established between PRO and its controller.

3.4.2 Some Potential Problems: Arguments Against
A Unified Theory of OC and Anaphor Binding

As argued in the preceding subsection, I assume that the same licensing mechanism operates for OC PRO and anaphors in argument positions of syntactic

predicates.   However, certain arguments have been made against a unified theory of OC and anaphor binding in the literature.   Thus, it is worth examining some of them at this point.   Basically, these arguments claim that the distribution of controllers in OC is not exactly parallel to that of antecedents in anaphor binding.   Here, I will take up one case in which anaphor binding is possible but OC is not and one in which conversely, OC is possible but anaphor binding is not.

3.4.2.1 The Flexibility of Antecedent choice

Lasnik (1992) notes that anaphor binding, when there is more than one nominal argument in the local domain, is flexible with respect to the antecedent choice, whereas for OC, a particular argument is designated as the controller.   Observe the following contrast).

> (109)a. John$_i$ showed Bill$_j$ himself$_{i/j}$ in the picture.
>
> b. John$_i$ told Bill$_j$ [PRO$_{*i/j}$ to look at the picture].

In (109a) the anaphor has the option of taking either the subject *John* or the object *Bill* as its antecedent.   In (109b), on the other hand, PRO must necessarily be controlled by the object, and subject control is strictly ungrammatical.   In a unified approach to OC and anaphor binding, this discrepancy is rather strange.

Based on the discussion so far in this thesis, given that more than one nominal argument is present in the ACPD, then all of them should be potential antecedents.   If an expression contains an anaphoric element with more than one potential antecedent, then it should lead to ambiguity.   Thus, from my point of view, it is OC that behaves unexpectedly.   However, an important question to ask is whether OC can never be ambiguous.   The answer seems to be negative.   There are definitely cases of OC that are flexible between subject control and object control.   Consider the examples below.

> (110)a. John$_i$ asked Mary$_j$ [PRO$_{i/j}$ to leave].
>
> (Farcas 1988 (8a) p.32)
>
> b. Ich$_i$ habe   ihm$_j$ vorgeschlagen [PRO$_{i/j}$ mich
>
> I$_i$ have   him$_j$.(Dat)   proposed   [PRO$_{i/j}$ me/myself
>
> zu erschieβen].
>
> to shoot]

'I proposed to him that I shoot myself.'
'I proposed to him that he shoot me.'
(Wurmbrand 2001 (199a) p.242)

In (110a) PRO can refer to either the subject *John* or the object *Mary*, at least for some speakers. A similar ambiguity is observed in the German sentence (110b). It is true that most control verbs are strongly inclined towards either subject control or object control. Nevertheless, English *ask* and German *vorschlagen* 'propose' are two of the few verbs that can be construed as either with relative ease.

Some control verbs have a designated argument as the controller under normal circumstances but have their control patterns altered by tuning their complement clauses somewhat. For instance, as mentioned in section 3.3.1, although *persuade* usually exhibits object control, it shifts to subject control for some speakers with the addition of *be allowed to* in its control clause. Observe the pair of examples in (19), reproduced below.

(19)a. Susie$_i$ persuaded the teacher$_j$ [PRO$_{*i/j}$ to leave early].
    b. Susie$_i$ persuaded the teacher$_j$ [PRO$_{i/*j}$ to be allowed to leave early].

As Landau (2000) points out, other verbs absolutely resist control shift. For example, English verbs like *encourage* and *force*, which exhibit object control, as in (111), never license subject control even in the presence of *be allowed to* in their control clause (for the former verb on this issue, see also Farkas (1988)). Consider the sentences in (112).

(111)a. John$_i$ encouraged Bill$_j$ [PRO$_{*i/j}$ to leave].   (Farkas 1988 (38a) p.50)
    b. John$_i$ forced Bill$_j$ [PRO$_{*i/j}$ to leave].
(112)a. *John$_i$ encouraged Bill [PRO$_i$ to be allowed to leave].
        (Farkas 1988 (38b) p.50)
    b. *John$_i$ forced Bill [PRO$_i$ to be allowed to leave].

The question then is why every control verb with two nominal arguments does not have the option of assigning either argument as the controller or license control shift. With respect to this issue, I believe that there is an additional mechanism outside syntax that determines the controller choice, which will be discussed in section 4.2.

3.4.2.2 An Implicit Dative

Rizzi (1986) notes that in Italian, while OC can have a pragmatically interpreted implicit dative as the antecedent in a sentence with specific time reference, as shown in (113a), anaphor binding does not have this option available, as can be seen in (113b). Landau (2000) indicates a similar contrast in English, given in (114).

(113)a. Lo psichiatra ha detto pro$_i$ [di PRO$_i$ parlare
the psychiatrist has said pro.(dat)$_i$ [Comp PRO$_i$ to speak
di se stessi/noi stessi].
about themselves/ourselves]
'The psychiatrist said to speak about themselves/ourselves.'
b. *Lo psichiatra ha restituito pro$_i$ se stessi$_i$/noi stessi$_i$.
the psychiatrist has given.back pro.(dat)$_i$ themselves$_i$/ourselves$_i$
'The psychiatrist gave them back to themselves.'
'The psychiatrist gave us back to ourselves.'
(Rizzi 1986 (109) & (110b) p.551)
(114)a. Mary$_i$ thought that John said (to her$_i$) [PRO$_i$ to wash herself].
b. Mary$_i$ thought that John talked *(to her$_i$) about herself$_i$.
(Landau 2000 (57a) & (57b) p.117)

Rizzi's point is that if OC and anaphor binding are ultimately governed by the same mechanism, then it is not obvious why an implicit dative, to which the latter is blind, is visible to the former. Although this argument is quite interesting, I think that it contains a few problems. First, consider the following example.

(115) Mary$_i$ thought that John shouted *(to her$_i$) [PRO$_i$ to wash herself].

I suppose that there is little reason to believe that (115) is structurally different from (114a). Furthermore, the verb *shout* is sufficiently similar to *say* in terms of its meaning. Nevertheless, the former is ungrammatical without an overt dative.[54] Logically, there are two possible explanations for this illformedness. One possible account is that for some reason, *shout* does not at all project an implicit dative at the syntactic level, where OC PRO is assumed to be licensed. The other possibility is that though an implicit dative is indeed syntactically projected, it cannot control PRO with *shout* for some reason. I do not know which account is actually the case, but whichever may turn out to be true,

it would not be surprising if a similar explanation can transfer to (113b) and (114b) as well.

Second, I do not think that the contrast in (113) straightforwardly suggests that OC and anaphor binding involve different mechanisms. For one thing, a dative in Italian, even when overt, can serve as the antecedent of an anaphor only marginally (Rizzi 1986). Observe example (116).

(116) ?Lo psichiatra   gli$_i$ ha   restituito   se stesso$_i$.
          the psychiatrist   him.(dat)$_i$ has   given.back   himself$_i$
          'The psychiatrist gave him back to himself.'
          (Rizzi 1986 (110a) p.551)

Thus, it is fair to say that there is already something strange about a dative in Italian with respect to anaphor binding even when it is overt.

Also, from my point of view, it is rather the null dative in (113a) that behaves unexpectedly and needs explanation. In (113a) a null dative controller occurs in a sentence with specific time reference. However, with respect to accusative controllers, it is not in sentences with specific time reference but in those with generic time reference that they can be null, as illustrated in (117).

(117)a. Il generale   può   constringere i soldati$_i$/pro$_i$ [PRO$_i$
           the general   can   force   the soldiers.(acc)$_i$/pro.(acc)$_i$ [PRO$_i$
           ad obbedire].
           to obey]
           'The general can force the soldiers/one to obey.'
      b. Il generale   ha   costretto i soldati$_i$/*pro$_i$ [PRO$_i$
           the general   has   forced   the soldiers.(acc)$_i$/*pro.(acc)$_i$ [PRO$_i$
           ad obbedire].
           to obey]
           'The general forced the soldiers/*one to obey.'
           (Rizzi 1986 (105a) & (106a) p.550)

Furthermore, although in (113a) the null dative controller is pragmatically interpreted, a null accusative controller can only have an arbitrary construal, as indicated in (118).

(118) Il sergente   può   costringere pro$_i$ [PRO$_i$
       the sergeant   can   force   pro.(acc)$_i$ [PRO$_i$
       a prepararsi/*a prepararci   in cinque minuti.
       to prepare oneself/*to prepare ourselves   in five minutes
       'The sergeant can force one to prepare oneself in five minutes.'
       *'The sergeant can force us to prepare ourselves in five minutes.'
       (Rizzi 1986 (107a) p.550)

Therefore, the conclusion appears to be that there is something special about a pragmatically interpreted implicit dative in Italian occurring in a sentence with specific time reference.   Not surprisingly, if the time reference in (113b) is switched to a generic one, and the implicit dative is made arbitrary in reference, then the sentence improves, as shown in (119).

(119) ??Un buono psichiatra può   restituire pro$_i$ se stessi$_i$.
        a good psychiatrist   can   give.back   pro.(dat)$_i$ oneself$_i$
        'A good psychiatrist can give one back to oneself.'
        (Rizzi 1986 (111) p.551)

Third, Landau's English anaphor example, repeated below, has a problem of its own.

(114)b. Mary$_i$ thought that John talked *(to her$_i$) about herself$_i$.

With respect to the collocation *talk about* ..., Reinhart & Reuland (1993) argue that the *about*-PP is not a θ-argument of the verb but simply an adjunct, and thus, an anaphor in it functions as a logophor (see also endnote 17 to chapter 2).   If they are correct, as I believe, then there is a reasonable explanation as to why *herself* in (114b) cannot take the implicit dative as its antecedent (even if it is syntactically projected).   That is, as discussed in section 2.6.3, an implicit element is less likely to be processed as a logophoric antecedent than an explicit one (vid. the Explicitness condition).

To conclude, the two major arguments against a unified theory of OC and anaphor binding are not so robust as they are claimed to be.   Therefore, the analysis of OC proposed in this section can still be maintained.

3.5 NOC and PRO in NOC Contexts

   In the preceding section we investigated OC and PRO in OC contexts.   In this section we will turn to the other half of the system, namely NOC and PRO in NOC contexts.   First of all, let us throw a brief look at some representative examples of this type of control.   Consider the following sentences.

   (120)a. [PRO$_{arb}$ Working on one's own] is inefficient for the project.
        b. Tom$_i$ thought that it might ruin the important day [PRO$_i$ to have his own way].

In (120a) the referent of PRO is unspecified or arbitrary.   As already discussed, this kind of control is called arbitrary control.   In (120b), on the other hand, PRO is controlled by the matrix subject *Tom*, which is clearly outside the ACPD of the former.   As already mentioned, this kind of control is called long-distance control.
   In the preceding section I argued that PRO in OC contexts is -R and is licensed by (my version of) the Chain Condition.   If this is correct, then assuming that Williams's (1980) OC/NOC dichotomy is correct, NOC can be defined as in (121).

   (121) The NOC Hypothesis:
        NOC is control in which PRO is licensed by something other than the Chain Condition.

Namely, in the above definition, the characterization of NOC as a natural category has been abandoned altogether.   Instead, this construction is defined as the elsewhere case of OC (see also Hornstein (1999, 2000 & 2003) for a similar approach).
   The main objective of this section is to demonstrate that the NOC hypothesis in (121) is on the right track.   Specifically, I will argue that PRO in NOC contexts is logophoric rather than pronominal.   In section 2.6, we saw that the use of logophors is governed by a set of discourse conditions.   For ease of reference, the summary of these conditions is reproduced in (122).   In section 3.5.1, I will show that such discourse conditions are also relevant to the licensing of PRO in NOC environments.   In section 3.5.2, I will briefly consider what kind of mechanism underlies such a property of NOC PRO.   Finally, in section 3.5.3, I will take up verbs with gerundive "complements" that exhibit the NOC effect, which can potentially be problematic for the analysis presented in

(122) The Summary of Discourse Conditions:

The Surface Structure Empathy Hierarchy	subject > object > oblique
The Speech-Act Participant Empathy Hierarchy	first person > second person > third person
The Sentence Theme Condition	theme > non-theme
The Humanness Hierarchy	human > animate nonhuman > thing
The Definiteness Condition	definite > indefinite
The θ-Role Condition	Agent/Experiencer > Goal > Theme
The Genericness Condition	generic > non-generic
The Explicitness Condition	explicit antecedent > implicit antecedent
The Closeness Condition	close antecedent > distant antecedent
The Directionality Condition	antecedent to the left > antecedent to the right
The Intrasentential Requirement Condition	antecedent in the same independent clause > antecedent in the conjugate coordinate clause > intersentential antecedent

this chapter.

3.5.1 The Logophoric Nature of NOC PRO

It has traditionally been assumed that PRO in NOC environments is a pronominal of sorts (e.g. Bresnan 1982, Mohanan 1983, Bouchard 1984 & 1985, Sag & Pollard 1991, Hornstein 1999, 2000 & 2003).   On the other hand, Landau (2000 & 2001) argues that it is actually more like a logophor.   With respect to this issue, my position coincides with the latter.   This subsection will be devoted to demonstrating that various discourse conditions, which govern the use of logophors, are also responsible for licensing NOC PRO.

Let us start with the previous NOC examples in (21), taken from Kuno (1975), which Landau also cites in his series of work.

(21)a. John said to Mary that it would be easy [PRO to prepare herself for the exam].

b. *John said about Mary that it would be easy [PRO to prepare herself for

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the exam].

While NOC PRO can take a DP embedded in a *to*-PP as its controller, as shown in (21a), it cannot be controlled by a DP embedded in an *about*-PP, as can be seen in (21b). This contrast can be explained on the assumption that NOC PRO is logophoric.[55] Namely, the Surface Structure Empathy Hierarchy says that the referent of a subject is more easily empathized with than that of an object, which, in turn, draws more of the speaker's empathy than that of an oblique (vid. (122) ch.2). Thus, in (21a), because *Mary* is a dative object, its referent attracts a modest but decent amount of empathy, which is sufficient to set it up as the controller of NOC PRO. In (21b), by contrast, since the same DP is an oblique, the empathy that its referent receives is minimum and hence cannot serve as such a controller. In fact, if PRO in NOC contexts is pronominal, as traditionally argued, then the above contrast is rather mysterious. As pointed out by Landau, if PRO in (21b) is replaced by an overt pronoun, then the sentence becomes acceptable, as indicated in (123).

> (123) John said about Mary that it would be easy [for her to prepare herself for
> the exam].   (Landau 2000 (67a) p.120)

Consider next the following examples.

> (124)a. [PRO Working by myself/yourself] is inefficient for the project.
> b. ??[PRO Working by himself] is inefficient for the project.
> (where PRO is exophoric)

As can be seen in (124a), with respect to first person and second person NOC PRO, its controller does not necessarily have to be linguistically expressed. On the other hand, as shown in (124b), it is usually quite difficult for third person NOC PRO to manage without a linguistic controller. If NOC PRO is logophoric, then the above contrast can be explained by the Speech-Act Participant Empathy Hierarchy. According to this principle, the first person is more easily empathized with than the second person, which, in turn, draws more of the speaker's empathy than the third person (vid. (123) ch.2). That is, since the first person and the second person attract relatively much of the speaker's empathy, they can serve as the controller of NOC PRO without being linguistically expressed.[56, 57] By contrast, with the third person, because the amount of empathy that it receives is conservative, it scarcely has such an option. As illustrated in

(125), a pronoun, even if third person, can be used exophorically without any difficulty.

(125) His working by himself is inefficient for our project

(where *his* is exophoric)

However, it is not the case that third person NOC PRO without a linguistic controller is absolutely prohibited.   Observe the example below.

(126) [PRO$_{arb}$ To roll down the hill] would delay this project.

Sentence (126) is an instance of arbitrary control, where PRO does not have a specific referent.   What is interesting is its interpretation.   Namely, PRO has to be human, and other interpretations (i.e. PRO=animal(s) or thing(s)) are strictly ill-formed.   Therefore, as noted by Lasnik (1992), arbitrary control PRO is strongly biased towards the human interpretation.[58]   Assuming that NOC PRO is logophoric, the above phenomenon can be explained by the Humanness Hierarchy.   According to this principle, the referent of a human DP is more easily empathized with than that of an animate nonhuman DP, which in turn, draws more of the speaker's empathy than that of an inanimate DP (vid. (124) ch.2).   That is, because arbitrary control involves antecedentless third person NOC PRO, which can attract only scant empathy, as just mentioned, the unexpressed controller must be human to make it up.   Again, not surprisingly, if a pronoun replaces PRO in the above example, then it can be interpreted as animals (e.g. goats) or a thing (e.g. rocks), as can be seen in (127).

(127) For them to roll down the hill would delay this project.

Consider finally the following examples.

(128)a. John$_i$ is the head of our project.   *[PRO$_i$ To present himself as an able leader] is crucial to our success.
    b. ??John$_i$ is the head of our project, and thus, [PRO$_i$ to present himself as an able leader] is crucial to our success.

as already discussed in section 3.3.3, when the root clause contains an animate DP, NOC PRO has difficulty in taking an intersentential controller.   This observation is reaffirmed by the ill-formedness of (128a).   As shown in (128b), the sentence slightly improves if

the two separate sentences are assembled into a single compound sentence. This is exactly the pattern that one expects if NOC PRO is logophoric. Namely, according to the Intrasentential Requirement Condition, an antecedent in the same independent clause is favored over an antecedent in the conjugate coordinate clause, which, in turn, is favored over an intersentential antecedent (vid. (139) ch.2). Once again, if PRO in (128) is replaced by a pronoun, then the contrast disappears, and both sentences are acceptable, as can be seen in (129).

(129)a. John$_i$ is the head of our project. For him$_i$ to present himself as an able leader is crucial to our success.

b. John$_i$ is the head of our project, and thus, for him$_i$ to present himself as an able leader is crucial to our success.

It appears that the use of NOC PRO is strictly governed by discourse. If PRO in NOC contexts were pronominal, as traditionally argued, it should enjoy much more freedom with respect to its controller choice. Therefore, I conclude that NOC PRO is logophoric and is licensed by discourse conditions.

3.5.2 The Mechanism of NOC

In this subsection let us give a little consideration to the mechanism of NOC. In section 3.4, I argued that OC PRO is truly anaphoric, namely like an anaphor in an argument position of a syntactic predicate. On the other hand, in the preceding subsection I concluded that PRO in NOC contexts is logophoric, the use of which is governed by a set of discourse conditions. Presumably the easiest way to induce such a dual nature of PRO is to assume that there are actually two kinds of PRO: anaphoric PRO, which appears in OC environments, and logophoric PRO, which occurs in NOC environments.

However, this solution, in effect, claims that PRO in OC contexts and PRO in NOC contexts are two distinct elements unrelated to each other, which runs against our old intuition. In other words, it is no better than saying that in OC contexts, one element A is obtained, while in NOC contexts, another element B is obtained. Moreover, such a proposal is merely a description rather than an explanation. Namely, although it is true that postulating two kinds of PRO would give the right result, it does not explain why each element has the distribution that it does. For example, it is not obvious why

anaphoric PRO rather than logophoric PRO appears in the complement infinitives of *manage* and *try*, and why logophoric PRO rather than anaphoric PRO occurs in nonfinite clauses in the subject position.

An alternative means to achieve the desired effect is to suppose that PRO is in an argument position in OC cases, whereas it, in fact, occupies a non-argument position in NOC cases. This way, there is no need to posit two kinds of PRO. There is just one type of PRO, which is anaphoric, but it behaves logophorically in NOC environments, because it appears in a non-argument position just like an anaphor in an adjunct position. This approach is better than the former, but it still does not solve the second problem. That is, we still do not know why PRO is always in an argument position in OC instances and it is always in a non-argument position in NOC instances.

Therefore, I would like to suggest a third approach. Suppose, as is standard, that PRO raises to the Spec of IP to satisfy the EPP. Suppose further, just as in the second approach, that there is only one type of PRO, which is anaphoric. Then PRO is always -R here. Because it cannot head an A-chain, it must find an antecedent link in its ACPD. Since by definition, OC is control in which PRO is licensed by the Chain Condition, PRO in OC contexts always has some controller in its ACPD, with which it forms an A-chain. But since NOC is control in which PRO is not licensed by the Chain Condition, in this type of control, the ACPD does not contain any potential controller for PRO. As a result, PRO violates the Chain Condition and would lead to ill-formedness as it is.

However, I assume that when PRO cannot find a potential antecedent link in its ACPD, it can move to some non-argument position as a last resort, leaving an A'-trace.[59] This operation virtually turns PRO into a logophoric element. Since the trace is an A'-type, it is +R and heads an A-chain. PRO, on the other hand, is in a non-argument position, and thus, the Chain Condition is irrelevant. Hence, this PRO is well-formed, so long as it is licensed by discourse conditions. That is, the discourse provides the value for the displaced PRO, which, in turn, binds its trace in the Spec of the nonfinite IP.

Now the question is where exactly PRO moves to in NOC. The landing site must be an A'-position and also fairly local to the Spec of IP. I think that there are two plausible candidates that meet these conditions. One candidate is the IP-adjoined position, in which case PRO moves just like a raised quantifier. The other possibility is the Spec of CP, in which case PRO moves just like a *wh*-phrase. At this point, it is hard to determine which of these two positions is the real landing site. At any rate, wherever NOC PRO actually may move to, it would not seriously affect the rest of the argument in this thesis.

Before closing this topic, let us consider the derivations of the two sentences that we took up at the outset of this section. First, the derivation of sentence (120a) is depicted in (130). (For simplification, the gerundive clause and the PP *for the project* are treated as single units.)

(130) The Derivation of *[PRO Working on One's Own] Is Inefficient for the Project*:
1. inefficient for the project
2. [PRO Working on one's own] inefficient for the project
3. [PRO$_i$ [t$_i$ Working on one's own]] inefficient for the project
4. is [PRO$_i$ [t$_i$ Working on one's own]] inefficient for the project
5. [PRO$_i$ [t$_i$ Working on one's own]]$_j$ is t$_j$ inefficient for the project
6. [PRO$_i$ [t$_i$ Working on one's own]]$_j$ is$_k$ t$_k$ t$_j$ inefficient for the project

At step 1, *inefficient* and the PP are merged together. At step 2, the gerund and this complex are merged into a small clause. Because PRO is at the A-edge of the gerundive clause, its ACPD is the next syntactic predicate up, which is the small clause. Since PRO cannot find a potential antecedent link in this domain, it moves to some A'-position as a last resort at step 3. At step 4, the whole thing is merged with *is*. At step 5, the gerundive clause raises to the Spec of IP to satisfy the EPP. At the last step, *is* moves to INFL.

Turning to (120b), its derivation is depicted in (131). (Again for simplification, the infinitival clause and the DP *the important day* are treated as single units.)

(131) The Derivation of *Tom Thought That It Might Ruin the Important Day [PRO To Have His Own Way]*:
1. ruin the important day
2. [PRO to have his own way] ruin the important day
3. [PRO$_i$ [t$_i$ to have his own way]] ruin the important day
4. might [PRO$_i$ [t$_i$ to have his own way]] ruin the important day
5. it might [PRO$_i$ [t$_i$ to have his own way]] ruin the important day
6. it might t$_j$ ruin the important day [PRO$_i$ [t$_i$ to have his own way]]$_j$
7. that it might t$_j$ ruin the important day [PRO$_i$ [t$_i$ to have his own way]]$_j$
8. thought that it might t$_j$ ruin the important day [PRO$_i$ [t$_i$ to have his own way]]$_j$
9. Tom thought that it might t$_j$ ruin the important day [PRO$_i$ [t$_i$ to have his

own way]]$_j$

    10. Tom$_k$ t$_k$ thought that it might t$_j$ ruin the important day [PRO$_i$ [t$_i$ to

        have his own way]]$_j$

The process is similar to the previous one.   At the second step, the ACPD of PRO is determined to be the VP headed by *ruin*.   At the third step, PRO escapes to some A'-position, because this domain does not contain any potential antecedent link.   At the fifth step, expletive *it* is merged in the Spec of IP, which satisfy the EPP.   At the sixth step, the infinitival clause is extraposed, perhaps due to a PF constraint to the effect that clausal material must be a peripheral element in a clause or a nominal (see endnote 40 to chapter 2 for discussion).   In the rest of the derivation, the remaining elements are merged one by one.   Now it is worth noting that in the present system, when the control clause is merged as the specifier of a syntactic predicate, PRO in it never finds a potential antecedent link in its ACPD, therefore always inducing NOC.

       Finally, one important note about the proposed approach is that the movement of PRO is only implemented as a last resort.   Namely, whenever PRO has a potential antecedent link in its ACPD, A-chain formation is inescapable.   In other words, PRO cannot refuse to form an A-chain by moving to whatever targeted A'-position in case a potential antecedent link is available.   This assumption is absolutely necessary to exclude sentences like (132).

    (132) *William$_i$ tried [PRO$_{arb}$ to respect him$_i$].

In the above example, *try* takes an infinitive with a PRO subject whose referent is arbitrary, and the embedded object *him* is coindexed with the matrix subject.   The derivation of this sentence is shown in (133).   (Once more, the infinitival clause is treated as a single unit.)

    (133) The Derivation of *William$_i$ Tried [PRO To Respect Him$_i$]*:
        1. tried [PRO to respect him]
        2. William tried [PRO to respect him]
        3. *William tried [PRO$_i$ [t$_i$ to respect him]]

At the second step, the ACPD of PRO is fixed as the VP headed by *tried*.   This domain indeed contains a potential antecedent link, namely *William*.   Nevertheless, at the third step, PRO moves to an A'-position, which renders the sentence ungrammatical.

Therefore, I assume that when possible, A-chain formation is obligatory.

In this subsection I have suggested one plausible mechanism of NOC. In particular, I have proposed A'-movement of PRO in NOC contexts, which virtually turns it into a logophoric element. The argument that I have constructed is purely conceptual. However, one might wonder if there is any empirical evidence in favor of such movement. Unfortunately, so far, I still have not found any data to show that PRO really moves in NOC environments. With respect to this issue, I will leave it to future research.

3.5.3 A Potential Problem: Verbs With Gerundive "Complements" That Exhibit the NOC Effect

The analysis presented in this chapter entails that whether a given construction exhibits OC or NOC is basically determined by the syntactic position in which the control clause is merged (i.e. configurational approach). In particular, when the control clause is merged as the complement of a verb or adjective, it uniformly induces OC. However, as pointed out by Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005), verbs such as *beat* and *entail* with gerundive "complements" exhibit the NOC effect.[60] Consider the following examples.

(134)a. Amy$_i$ thinks that [what you propose beats [PRO$_i$ undressing herself in public/PRO$_{arb}$ undressing oneself in public]].
b. Jeff$_i$ thinks that [this outcome entails [PRO$_i$ undressing himself/PRO$_{arb}$ oneself in public]].
(Jackendoff & Culicover 2003 (15a) p.522 & (76b) p.540)

The above sentences allow long-distance control and arbitrary control. This indicates that this construction is NOC.

Indeed, these examples pose a potential problem for my analysis. However, I suspect that the gerunds in question are not true complements in the sense that they are selected by the verbs or L-marked in Chomsky's (1986a) term. A piece of evidence to suggest this line of approach is data on *wh*-extraction. As indicated in (135), verbs that take a gerundive complement usually license *wh*-extraction.

(135)a. Who$_i$ did Mary stop [PRO calling t$_i$]?
b. Who$_i$ did Mary avoid [PRO kissing t$_i$]?

By contrast, as shown in (136), verbs like *beat* and *entail* with gerunds that superficially look like complements block *wh*-extraction, or at least extraction is not as good as in (135).

(136)a. *Who$_i$ does my plan beat [PRO dating t$_i$ on Sunday]?
    b. ?Who$_i$ does John's suggestion entail [PRO firing t$_i$]?

If the gerundive clauses in question are not selected by the verbs, then they do not satisfy the selection condition in (102), repeated below.

(102) A-Chain Projection Domain (ACPD):
    Let P$_1$ and P$_2$ be argument positions of syntactic predicates, then
    P$_2$ is in the A-Chain Projection Domain of P$_1$, iff P$_2$ c-commands P$_1$, and
    a. P$_1$ and P$_2$ are arguments of the same syntactic predicate, or
    b. P$_1$ is at the A-edge (i.e. in the highest A-position) of a syntactic
       predicate that is immediately contained by the syntactic predicate of P$_2$,
       and the former predicate is selected by the head of the latter.

Consequently, the ACPD of PRO in those clauses is not formed, as a result of which, this element is licensed as NOC PRO. If this construction is actually NOC, then it is not surprising that it permits long-distance control and arbitrary control.

Now, assuming that the gerunds at issue are not really complements of the verbs, a question immediately arises. That is, what exactly are they? I suggest that *beat* and *entail*, as used in (134), are a kind of copulative verb[61] and that these gerunds are what traditional grammarians call subject complements. Namely, the relevant parts of the sentences in (134) have a structure equivalent to that of (137a), and the ill-formedness/awkwardness of the examples in (136) can be viewed as being parallel to the ungrammaticality of (137b).

(137)a. My plan is [PRO to date Mary on Sunday].
    b. *Who$_i$ is my plan [PRO to date t$_i$ on Sunday]?

To sum up, with respect to verbs with gerundive "complements" that exhibit the NOC effect, there is a good reason why they behave in such a way. Namely, these gerunds are not true complements selected by the verbs. Therefore, this construction

does not threaten the approach proposed in this chapter.[62]

3.6 Pseudo-Obligatory Control: The Discourse Requirement of
a "Local" Controller[63]

In the last two sections I discussed how PRO is licensed in the linguistic system that I am proposing. In OC, I argued, PRO has some potential antecedent link in its ACPD, whereby an obligatory A-chain is formed between the two elements, which is interpreted as a control relation. In NOC, I argued, PRO is in a context in which no potential antecedent link can be found in its ACPD, whereby a control relation is established at the level of discourse. Thus, in my system, whether a certain construction is OC or NOC is self-evident, so long as its derivation is well-defined. That is, if the controller is within the ACPD of PRO when it is determined, then that construction is OC. On the other hand, if the controller is not within the ACPD of PRO, or such a domain is not set up at all, then that construction is NOC.

However, with respect to some constructions, their OC/NOC categorization is controversial among control researchers. These are cases where apparently, a "local"[64] controller is required, but at the same time, some alleged properties of NOC are also observed. This section is intended to shed new light on the discussion of OC/NOC classification. Specifically, my goal in this subsection is twofold. First, I would like to show that there exist control constructions that look very much like OC but are, in fact, properly classified as NOC, which I call *pseudo-obligatory control (POC)*. Second, I would like to propose a plausible method to diagnose whether a given construction is POC or not.

3.6.1 What Is POC?

First of all, consider example (138), which is an impersonal passive that takes an infinitival argument.

(138) It was decided φ_{by} pro_i [PRO$_i$ to leave].   (Landau 2000 (43a) p.174)

Landau (2000) categorizes this construction as OC. He states:

Perhaps the most straightforward demonstration that (43) (=(138) above) is not a case of NOC is the following:

(45)a. *It was decided by John$_i$ [PRO$_{arb}$ to teach him$_i$ Spanish].
b. *Mary$_i$ said that it was decided by John [PRO$_i$ to behave herself].

When the matrix agent is syntactically present, neither arbitrary nor long-distance control -- two diagnostics of NOC -- are possible. (Landau 2000: l.28 p.174-l.2 p.175)

As can be seen from the quote, Landau takes the requirement of a "local" controller as a diagnostic of OC. Since impersonal passives do require such a controller, as they resist arbitrary control and "long-distance" control, he argues that they must be OC.

Next, let us turn to the construction in (139).

(139) [PRO$_i$ To leave] was John's$_i$ aim.

As shown in (140a), this construction does not allow arbitrary control, and as shown in (140b), it does not allow "long-distance" control either.

(140)a. *[PRO$_{arb}$ To leave] was John's aim.
b. *Mary$_i$ said that [PRO$_i$ to leave] was John's aim.

Thus, following Landau's argument, the above construction is supposed to be OC as well. However, this conclusion is problematic. Practically every author, including Landau himself, agrees that intraposition constructions like (139) are uniformly NOC. Then we have to admit that there are NOC cases that require a "local" controller. Let us call such instances POC. But if there really exist POC cases, then Landau's above argument about example (138) is seriously threatened. Note that I am not necessarily challenging the conclusion that impersonal passives are OC.[65] Rather, my point is that it is quite misleading to claim that something is OC based on the fact that it requires a "local" controller.[66]

The question then is what gives rise to the POC effect. As discussed in section 3.5.1, with respect to NOC, the choice of controller is affected by discourse conditions. If that is so, then it would not be surprising if there are some cases where these conditions operate so that PRO may be forced to take a "local" controller. Accordingly, I present the following hypothesis.

(141) The POC Hypothesis:

POC is control in which PRO is required to have a "local" controller by discourse conditions.

Before proceeding any further, a comment on the term "POC" is in order. "POC" is not a term for a theoretical construct but a convenient descriptive label. Thus, the theory recognizes just one type of NOC, and POC instances should theoretically be no different from other NOC instances.

Now suppose that we have a control construction that requires a "local" controller (e.g. resisting arbitrary control and "long-distance" control). Based on the "locality" requirement, some might argue that this construction is OC. But as discussed above, such reasoning is erroneous. Then how can we judge whether a given construction is truly OC or POC? For this purpose, we can draw on sensitivity to discourse factors, a property that POC holds but OC lacks.

Having said that, the problem is that there is no such thing as "the test for discourse sensitivity". Nevertheless, we can play with the discourse factors already familiar to us when examining a candidate for POC. If manipulating a few of them can destroy the "locality" requirement of the construction, then there is a good reason to believe that we are not dealing with OC but rather POC, because discourse conditions are irrelevant to the former. By contrast, if none of the discourse factors affect the behavior of the candidate, then we can safely conclude that it is OC.[67]

Let us return to example (139). In this construction, there exists an optimal potential controller for PRO, namely the possessor of the postcopular DP.[68] Suppose that the POC relation is caused by the optimality of this potential controller in accordance with the POC hypothesis. Then if this element is made a less ideal controller in terms of discourse, the construction in (139) should behave like typical NOC. For example, according to the Humanness Hierarchy, the referent of an inanimate DP is much less empathized with than that of a human DP. As predicted, (139) comes to allow arbitrary control if *John* is replaced by an inanimate, say *the project*, as can be seen in (142).[69]

(142) [PRO$_{arb}$ To leave] was the project's aim.

In the next subsection I will investigate some of the controversial cases and determine whether they are POC (=NOC) or true OC.

3.6.2 Case Studies

Now that we have a means of judging whether a given construction is POC or true OC, let us actually apply this diagnostic to some of the controversial cases. Here, I will take up four constructions: super-equi constructions, control into adjunct clauses, control governed by desiderative predicates and control into interrogative infinitival complements. As the discussion will demonstrate, the approach proposed in the previous sections makes the right predictions about their classification.

3.6.2.1 Super-Equi Constructions

We start with the paradigm of super-equi constructions, already introduced in section 3.3.4. Observe the set of examples in (66), reproduced below.

(66)a. Mary$_j$ knew [that it disturbed John$_i$ [PRO$_i$ to perjure himself/*PRO$_j$ to perjure herself].
    b. Mary$_j$ knew [that it damaged John$_i$ [PRO$_i$ to perjure himself/PRO$_j$ to perjure herself].
    c. Mary$_j$ knew [that [PRO$_i$ perjuring himself/PRO$_j$ perjuring herself] disturbed John$_i$].
    d. Mary$_j$ knew [that [PRO$_i$ perjuring himself/PRO$_j$ perjuring herself] damaged John$_i$].

Landau (2000 & 2001) is the first to give attention to the full paradigm above. In his approach, (66a) is categorized as OC. With respect to psych-predicates, he assumes a structure where the control clause is base-generated as the complement of the lower V in the VP-shell and remains in this position throughout the derivation. Thus, the sentence resists "long-distance" control. For Landau, (66b), in which a non-psych-predicate is involved, is ambiguous -- if the base copy is interpreted, then OC is obtained, whereas if the extraposed copy is interpreted, then NOC is obtained. As for cases where the control clause is intraposed like (66c) and (66d), NOC is obtained regardless of the predicate type. See also section 3.3.4 for a more detailed exposition of Landau's analysis.

In contrast to Landau, I postulate the following derivations for the relevant part of each sentence in (66). (For simplification, the nonfinite clause is treated as a single

unit.   Also, though I assume that *John* moves to the Spec of some functional projection to get accusative Case, and *disturbed/damaged* raises past this functional head, these movements are left out.)

(143)a. The Derivation of *It Disturbed John [PRO To Perjure Himself/*Herself]*:

    1. disturbed John

    2. [PRO to perjure himself/herself] disturbed John

    3. [PRO$_i$ [t$_i$ to perjure himself/herself]] disturbed John

    4. t$_j$ disturbed John [PRO$_i$ [t$_i$ to perjure himself/herself]]$_j$

    5. it t$_j$ disturbed John [PRO$_i$ [t$_i$ to perjure himself/herself]]$_j$

b. The Derivation of *It Damaged John [PRO To Perjure Himself/Herself]*:

    1. damaged John

    2. [PRO to perjure himself/herself] damaged John

    3. [PRO$_i$ [t$_i$ to perjure himself/herself]] damaged John

    4. t$_j$ damaged John [PRO$_i$ [t$_i$ to perjure himself/herself]]$_j$

    5. it t$_j$ damaged John [PRO$_i$ [t$_i$ to perjure himself/herself]]$_j$

c. The Derivation of *[PRO Perjuring Himself/Herself] Disturbed John*:

    1. disturbed John

    2. [PRO perjuring himself/herself] disturbed John

    3. [PRO$_i$ [t$_i$ perjuring himself/herself]] disturbed John

    4. [PRO$_i$ [t$_i$ perjuring himself/herself]]$_j$ t$_j$ disturbed John

d. The Derivation of *[PRO Perjuring Himself/Herself] Damaged John*:

    1. damaged John

    2. [PRO perjuring himself/herself] damaged John

    3. [PRO$_i$ [t$_i$ perjuring himself/herself]] damaged John

    4. [PRO$_i$ [t$_i$ perjuring himself/herself]]$_j$ t$_j$ damaged John

That is, in all of the cases, the nonfinite clause is merged as the specifier of the verb (see section 4.4.2.1 for my argument against the view that the infinitive is a complement of the psych-verb in sentences like (66a)).   Accordingly, it is expected that the constructions in (66) are all NOC.   In (66a) and (66b) the control clauses are subsequently extraposed sentence-finally, while in (66c) and (66d) they raise to the Spec of IP to satisfy the EPP.   In the remainder of this subsubsection, I will provide some arguments in favor of my analysis over Landau's.

       First, as mentioned in section 3.3.4, many speakers more or less accept the "long-distance" control in (66a).   This makes me skeptical about the OC status of this

sentence.   Admittedly, there is a general consensus that when the nonfinite clause is extraposed, "long-distance" control is more awkward with psych-predicates, than with non-psych-predicates.   But this is precisely what we should anticipate from the assumption that PRO in super-equi constructions is logophoric.   According to the θ-Role condition, the referent of an Experiencer is more empathized with than that of a Goal or Theme.   In (66a) *John* assumes an Experiencer role, whereas in (66b) it is a Theme. Therefore, in the former, this DP pseudo-obligatorily controls PRO, while in the latter, the control relation is more flexible.

The contrast between (66a) and (66c) can also be explained on the same assumption.   Although in the former, *John* is an optimal controller for PRO in virtually every way, in the latter, *Mary* wins over it at least in terms of the directionality condition. Thus, control by *Mary* is better in (66c) than in (66a).

Another point in favor of my analysis is that sentence (66a) with PRO=*Mary* improves if the "long-distance" controller is brought closer to PRO than the "local" potential antecedent.   Observe example (144).

(144) It disturbed John, Mary$_i$ knew, [PRO$_i$ to perjure herself].

As the Closeness Condition suggests, this sort of effect is one of the signs of logophoricity.   As illustrated by the comparison between (145b) and (145c), mere proximity does not save ill-formed true OC cases at all.   Example (145a) is provided to show that the construction itself does not have any problem.

(145)a. Mary knew [that John$_i$ tried [PRO$_i$ to expose himself]].
    b. *Mary$_i$ knew [that John tried [PRO$_i$ to expose herself]].
    c. *John tried, Mary$_i$ knew, [PRO$_i$ to expose herself].

Furthermore, the "long-distance" control in (66a) improves if the discourse salience of the controller is somehow raised.   Consider the example below.

(146) I$_i$ knew [that it disturbed John [PRO$_i$ to expose myself]].

In (146) the control relation is still "long-distance".   Nevertheless, at least for some speakers, this sentence is detectably better than the "long-distance" control interpretation in (66a).   This is because in the former, the controller is switched to first person. According to the Speech-Act Participant Empathy Hierarchy, the first person is much

more empathized with than the third person. Hence, it can be understood that even the informants who felt that (66a) with PRO=*Mary* was rather degraded judged (146) to be acceptable. Again, this does not happen with typical OC constructions, as shown in (147).

(147) *I_i knew [that John tried [PRO_i to expose myself]].

Moreover, as indicated in (148a), psychological predicates with extraposed infinitives allow arbitrary control, at least for some speakers.

(148)a. (??)It disturbed $John_i$ [PRO_{arb} to scold him_i in public].
     b. It disgraced $John_i$ [PRO_{arb} to scold him_i in public].

Again, as can be seen in the above contrast, arbitrary control with psychological predicates is not as good as it is with non-psychological predicates[70]. But this too can be attributed to the fact that the former contain an Experiencer, which is an ideal potential controller for NOC PRO. What is more important here is that typical OC predicates do not permit arbitrary control even marginally for any speakers, as illustrated in (149).

(149) *$John_i$ tried [PRO_{arb} to scold him_i in public].

Now let us turn to non-psych-predicates with extraposed infinitives. Probably the strongest evidence that Landau provides to support his claim that sentences like (66b) are OC when their nonfinite clauses are interpreted VP-internally comes from data on *wh*-extraction. Observe the following pairs of examples.

(150)a. To $whom_j$ would it help $Bill_i$ [PRO_i to introduce himself t_j]?
     b. *To $whom_j$ would it help $Bill_i$ [PRO_{arb} to introduce him_i t_j]?
     (Landau 2000 (25b) & (26b) p.105)
(151)a. That's the talk $show_j$ that Hillary thinks it damaged $Bill_i$ [PRO_i to talk about himself on t_j].
     b. *That's the talk $show_j$ that $Hillary_i$ thinks it damaged Bill [PRO_i to talk about herself on t_j].
     (Landau 2000 (27b) p.105 & (28b) p.106)
(152)a. How_j would it be useful to $Bill_i$ [PRO_i to talk about himself t_j]?
     b. *How_j would it be useful to $Bill_i$ [PRO_{arb} to talk to him_i t_j]?

(Landau 2000 (32b) & (32d) p.106)

In his analysis, with respect to sentences whose matrix predicates are not psychological, the infinitive can potentially be interpreted either VP-internally in the base position or VP-externally in the extraposed position.   In the (b) examples above, however, the VP-internal option is out, because they are NOC.   When the *wh*-element is extracted from the infinitive, a problem arises with the (b) sentences but not with the (a) sentences. This contrast can naturally be explained, as Landau argues, in terms of the CED, according to which adjuncts, including extraposed elements, are islands to *wh*-extraction.

Thus, in Landau's approach to extraposition, it follows that a *wh*-phrase is capable of being extracted from the base copy of an extraposed element.   However, the fundamental question arises at this point whether such an operation is really permitted in the grammar.   To answer this question, consider the following sentences.

(153)a. How$_j$ did Mary$_i$ hate [PRO$_i$ fixing the car t$_j$]?   (Answer: With a wrench)

b. Mary$_i$ hated t$_j$ very much [PRO$_i$ fixing the car with a wrench]$_j$.

c. *How$_j$ did Mary hate t$_k$ very much [PRO$_i$ fixing the car t$_j$]$_k$? (Answer: With a wrench)

In (153a) the gerundive clause is in the base position, and extraction out of it is perfectly possible.   In (153b) this clause is extraposed to the right of the adverb *very much*, and the example is still grammatical.   However, as shown in (153c), once the embedded clause is extraposed, extraction out of it is prohibited even if nothing prevents it from being reconstructed in the base position.   Thus, we are forced to conclude that *wh*-extraction from the base copy of an extraposed element is not a permissible operation. Perhaps extraposition is strictly ordered before *wh*-extraction in the grammar.

If that is the case, then in (150a), (151a) and (152a), it must be the case that extraction takes place from the extraposed copy and is possible because, as is well known, a nonfinite clause constitutes only a weak island.   Sentence (154) is an example to show that a nonfinite clause evades the *Wh*-Island Constraint (Chomsky 1977).

(154) What$_i$ did Mary decide [whether PRO to buy t$_i$]?

Based on the above hypothesis, I have the following prediction.   Namely, if the infinitival clauses in the examples in question are replaced by their finite counterparts, then the resulting sentences should be unacceptable.   As can be seen below, this

prediction is indeed borne out (but see Cinque (1990) for the claim that an extraposed clause constitutes only a weak island).[71]   (The (a) examples are provided to demonstrate that the sentences are fine without extraction.)

(155)a. It helped Bill that he introduced himself to these professors.
    b. *To whom did it help Bill that he introduced himself?
(156)a. Hillary thinks it disgraced Bill that he talked about himself on the Dave Letterman show.
    b. *That's the talk show that Hillary thinks it disgraced Bill that he talked about himself on.
(157)a. It was useful to Bill that he talked about himself more modestly.
    b. *How$_i$ was it useful to Bill [that he talked about himself t_i]?
       (Answer: More modestly)

Therefore, Landau's supporting evidence to show that (66b) is OC when the base copy of the infinitive is construed is untenable.

Nevertheless, two questions still remain.   The first question is where the contrasts in (150)-(152) come from.   Regarding this issue, some comments on the data are in order.   According to my informants, examples (150b) and (151b)[72] are not as bad as a full star, probably a question mark or thereabouts, and (150a) and (151a), though indeed in the acceptable range, are not fully perfect.   Furthermore, the sentences below, which do not involve *wh*-extraction, sound a little awkward to their ears, though again more or less acceptable.

(158) It would help Bill$_i$ [PRO$_{arb}$ to introduce him$_i$ to these professors].
    (Landau 2000 (26a) p.105)
(159) Hillary$_i$ thinks it disgraced Bill [PRO$_i$ to talk about herself on the Dave Letterman show].   (Landau 2000 (28a) p.105: slightly modified)

These facts enable me to propose one plausible explanation for the contrasts in (150) and (151).   That is, with respect to this construction, as my informants judged on (158) and (159), arbitrary control and "long-distance" control are somewhat awkward.   Also, as they judged on (150a) and (151a), this construction allows *wh*-extraction only with slight marginality.   Then the degradedness of (150b) and (151b), which happen to execute both operations, can be thought of as a kind of cumulative effect, which combines the two sources of awkwardness.

Having explained the contrasts in (150) and (151), the next question to consider is why example (152a) is not sharply ill-formed. Generally, extraction of an adjunct such as *how* even from a weak island induces strong ungrammaticality, as illustrated in (160) (cf. (154): see also (153c)).

(160) *How$_i$ did Mary decide [whether PRO to fix the car t$_i$]?
        (Answer: With a wrench)

Actually, as for (152a), the judgments split among my informants -- while some of them said that it was ill-formed, others said that it was fine. But it is certain that a nonnegligible number of speakers judge this sentence to be in the acceptable range.

I suspect that this has to do with the fact that in (152) the most natural interpretation of *how* is the manner reading. Namely, the natural answer to the question would be, 'Enthusiastically', for example. A Manner adverb is generated fairly low very close to the verb (Jackendoff 1972 & Cinque 1999). Moreover, with respect to certain verbs, it behaves just like an argument. For instance, *do* in the sense of 'fare' and *treat* take a manner adverb rather obligatorily, as shown in (161) and (162), respectively.

(161)a. Our team is doing well.
        b. *Our team is doing.
(162)a. They treated the box with care.
        b. *They treated the box.

Thus, in (152) it would not be surprising if some speakers treat *how* as what I call a semi-argument, which behaves just like a true argument.

By contrast, as far as I know, there is no case in which an instrumental adverb behaves like an argument. Indeed, it is much more difficult to interpret *how* in (152a) instrumentally. Namely, the answer to the question would be, 'With a microphone', for example.[73] This can be made clearer by considering the following example, where the instrumental reading of *how* is pragmatically much more natural.

(163) *How$_j$ would it be useful to Bill$_i$ [PRO$_i$ to fix his own car t$_j$]?
        (Answer: With a wrench)

In (163) PRO is controlled by *Bill*, as forced by the expression *his own* in the control

clause.   Hence, this sentence could be OC in Landau's sense.   Nevertheless, my informants agreed that it was ill-formed.

In summary, following the approach proposed in the preceding sections, I categorize all the variants of super-equi constructions as NOC.   As illustrated in this subsubsection, every observed phenomenon makes sense under this view.   On the other hand, the evidence that Landau provides to support his analysis appears to be rather weak with careful examination.

3.6.2.2 Control Into Adjunct Clauses

It has often been claimed that control into adjunct clauses as in (164) is an instance of OC (or its equivalent) (e.g. Mohanan 1983, Borer 1989, Hornstein 1999 & 2000).[74]

(164)a. John$_i$ insulted Mary$_j$, [PRO$_i$ cursing himself/*PRO$_j$ cursing

herself/*PRO$_{arb}$ cursing oneself].[75]

(adapted from Mohanan 1983 (64) p.654)

b. John$_i$ heard Mary$_j$ [before PRO$_{i/*j/*arb}$ entering the room].

(adapted from Hornstein 1999 (37) p.88)

The major reason for this treatment is the apparent obligatory nature of the control relation in this construction.   That is, in both sentences in (164), PRO must necessarily be controlled by the matrix subject, and no other interpretation (object control, arbitrary control, etc.) is available.   Moreover, this type of construction does not allow "long-distance" control, as shown in (165).[76]

(165)a. *Sue$_i$ thinks [that John insulted Mary, [PRO$_i$ cursing herself]].

b. *Sue$_i$ thinks [that John heard Mary [before PRO$_i$ entering the room]].

On the other hand, some authors (e.g. Bresnan 1982, Williams 1994, Landau 2000) question this standard treatment.

I assume the following derivation for this type of construction.   In (166) the derivation of sentence (164a) is depicted as an example.   (For simplification, the control clause is treated as a single unit.)

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(166) The Derivation of *John Insulted Mary, [PRO Cursing Himself]*]

  1. insulted Mary

  2. John insulted Mary

  3. [John insulted Mary] [PRO cursing himself]

  4. [John insulted Mary] [PRO$_i$ [t$_i$ cursing himself]]

  5. John$_i$ [[t$_i$ insulted Mary] [PRO$_i$ [t$_i$ cursing himself]]]

At step 3, the control clause adjoins to the matrix clause. Since the former, in which PRO resides, is not selected by the head of the latter, there exists no ACPD for PRO (see the definition of ACPD in (102)). Thus, at step 4, PRO moves to some appropriate A'-position to obtain logophoricity. Therefore, in my analysis, control into adjunct clauses is an instance of NOC. In the remainder of this subsubsection, I will demonstrate that this categorization is indeed correct.

  First, with the construction at issue, it is true that control by the "local" subject is always forced when the adjunct clause is attached to the right of main clause. However, when it comes to left-adjoined adjuncts, there are some cases in which obligatoriness breaks down. This is especialy true when the matrix subject is not an Agent or Experiencer. Observe the examples in (167) and (168).[77]

(167)a. ?Mary was a wonderful change, [PRO$_{spkr}$ having spent my day with Bill].

  b. [PRO$_{spkr}$ Having spent my day with Bill], Mary was a wonderful change.

  (where spkr stands for speaker)

  (Williams 1994 (35a) & (35b) p.88)

(168)a. ?*Darkness fell quickly [after PRO$_{arb}$ pitching the tents].

  (Landau 2000 l.4-5 p.178)

  b. [After PRO$_{arb}$ pitching the tents], darkness fell quickly.

  (Kawasaki 1993 (24) p.173)

In (167) PRO refers to whoever would utter these sentences (=speaker), and in (168) arbitrary PRO emerges. Most crucially, only the (b) example in each pair is fully acceptable. Kawasaki (1993) and Landau (2000) attribute this contrast to a configurational factor; namely, a clause-initial adjunct is adjoined higher than a clause-final one. However, I view the problem in another light -- while Kawasaki and Landau's point of reference is the matrix clause, against which the adjunct appears to the left or right, I fix PRO as the reference point against which it is judged whether a (false) potential controller (i.e. *Mary* in (167) and *darkness* in (168)) is to its left or right.

Suppose that PRO in adjunct clauses is NOC, which is logophoric. As stated in the Directionality Condition, logophoric elements prefer to have an antecedent to their left rather than to their right. Consequently, with right-adjoined adjuncts, a POC relation is established between PRO and a potential controller, which would interfere with arbitrary control, whereas such a POC effect is weaker with left-adjoined adjuncts.

Second, if the matrix verbs in the examples in (164) are passivized, then the resulting sentences would be as given in (169).

(169)a. Mary$_j$ was insulted by John$_i$, [*PRO$_i$ cursing himself/PRO$_j$ cursing herself].

b. Mary$_j$ was heard by John$_i$ [before PRO$_{*i/j}$ entering the room].

In both sentences, it is not *John* but *Mary* that controls PRO.[78] Thus, if the matrix verb in this type of construction is passivized, then PRO generally must take the derived subject rather than the underlying subject as its controller.[79] However, this is not a typical behavior of OC constructions.

At this point, special attention must be paid to the terms "subject control" and "object control". These terms are, in a way, highly misleading in that "(obligatory) object control", for example, does not mean that the object is always designated as the controller. As indicated in (170a), *persuade* is a typical object control verb, but as can be seen in (170b), when it is passivized, it designates the subject as the controller.

(170)a. John$_i$ persuaded Mary$_j$ [PRO$_j$ to behave herself/*PRO$_i$ to behave himself].

b. Mary$_j$ was persuaded by John$_i$ [PRO$_j$ to behave herself/*PRO$_i$ to behave himself].

Thus, it might probably be more appropriate to call this construction "(obligatory) underlying object control" or "(obligatory) Theme/Goal control".[80] At any rate, this property is quite different from the one illustrated in the examples in (169).

Still, with respect to temporal adjunct clauses, if the discourse salience of the surface matrix subject is lowered, say by replacing it with an inanimate, then control by the demoted subject is available, as shown in (171).[81, 82]

(171) A sound was heard by John$_i$ [before PRO$_i$ entering the room].

This is, as suggested by the Humanness Hierarchy, a property of logophoric elements.

Finally, let us close this subsubsection by considering the following three-way contrast, noted by Kawasaki (1993).

(172)a. [After PRO$_i$ collecting some money], a bank account was opened by the businessman$_i$.　(adapted from Kawasaki 1993 (15a) p.168)

　　　b. *[After PRO$_i$ collecting some money], a bank account was opened by a businessman$_i$.　(Kawasaki 1993 (15b) p.168)

　　　c. [After PRO$_i$ collecting some money], a bank account can usually be opened by a businessman$_i$.

In the above sentences, the controllers are expressed in an oblique passive *by*-phrase. While a definite DP can control PRO in this context, as shown in (172a), it is very difficult for an indefinite DP to do so, as can be seen in (172b).　However, if such an indefinite DP is used generically, then it can serve as the controller in the same environment, as illustrated in (172c).　These appear to be the typical Definiteness Effect and Genericness Effect, which suggests that PRO in this construction is logophoric. When the controller is a subject, definiteness and genericness are relatively minor issues, because it already receives enough empathy.　But once it is demoted to a oblique *by*-phrase, the loss must be made up by other factors.　If control into adjunct clauses is OC, then the above data is quite puzzling.

In summary, all the evidence available suggests that control into adjunct clauses is not true OC but rather POC.[83]

3.6.2.3 Control Governed by Desiderative Predicates

Control governed by desiderative predicates (*prefer*, *want*, *wish*, etc.) as in (173) is quite controversial with respect to its taxonomy.

(173) Donna wanted [PRO to do the job on her own].

Many researchers (e.g. Williams 1980, Bresnan 1982, Koster 1984, Martin 1996, Wurmbrand 2001 & 2002) classify such control as NOC (or its equivalent).　The major reason for this treatment is that it allows the alternation between PRO and a lexical DP in the complement subject position, as can be seen in (174).

(174) Donna wanted [(for) Valerie to do the job on her own].

Other authors (e.g. Chomsky 1981, Manzini 1983, Landau 2000) categorize this construction as OC or its equivalent.

I assume the derivation depicted in (175) for sentence (173). (Again, the nonfinite clause is treated as a single unit for simplification.)

(175) The Derivation of *Donna Wanted [PRO To Do the Job on Her Own]*:
      1. wanted [PRO to do the job on her own]
      2. Donna wanted [PRO to do the job on her own]
      3. Donna$_i$ t$_i$ wanted [PRO to do the job on her own]

At step 1, the infinitival clause is merged as the complement of *wanted*. At step 2, a VP syntactic predicate is formed by the merger of *Donna*, whereby the ACPD of PRO is determined to be this domain. Since it contains only *Donna* as a potential antecedent link, this DP is automatically selected as the controller. Crucially, the control relation here should be truly obligatory. In what follows, I will provide some arguments against analyzing control governed by desiderative predicates as POC.

First of all, as shown in (176), this construction does not allow "long-distance" control.

(176) *Donna$_i$ was sure [that David wanted [PRO$_i$ to do the job on her own]].

This fact is compatible with the analysis that classifies control governed by desideratives as OC. Yet as we have seen in the preceding subsection, the mere requirement of a "local" controller does not necessarily guarantee that the construction is really OC. Relevant to the above example is the Closeness Condition, which says that logophoric elements prefer a closer antecedent. Thus, it is possible that the construction under discussion is actually NOC but that "long-distance" control is ill-formed due to this constraint. However, with respect to (176), merely making the controller close to PRO does not improve the sentence, as can be seen in (177).

(177) *David wanted, Donna$_i$ was sure, [PRO$_i$ to do the job on her own]].

Moreover, sentence (176) does not improve even if the controller is switched to first

person, which is ranked on the top in the Speech-Act Participant Empathy Hierarchy. Observe example (178).

(178) *I was sure [that David wanted [PRO to do the job on my own]].

Also, as shown in (179), even if the discourse salience of the intervenor is lowered with respect to humanness by replacing *David* with *the bear*, the sentence does not improve either.[84]

(179) *Donna was sure [that the bear wanted [PRO to do the job on her own]].

As illustrated in (180), even if the salience of the intervenor is kept low, and simultaneously, that of the controller is raised by switching it to first person, the sentence is still ill-formed.

(180) *I was sure [that the bear wanted [PRO to do the job on my own]].

Finally, even if the salience of the intervenor is lowered with respect to definiteness by replacing *David* with *a boy*, the result would be the same, as can be seen in (181). As shown in (182), even if the salience of the controller is raised at the same time by switching it to first person, no improvement is observed.

(181) *Donna was sure [that a boy wanted [PRO to do the job on her own]].
(182) *I was sure [that a boy wanted [PRO to do the job on my own]].

It seems that the data suggests that control governed by desiderative predicates is not sensitive to discourse factors.   Therefore, I conclude that this construction is true OC rather than POC.   The reason why desiderative predicates allow the alternation between PRO and a lexical DP in the complement subject position is that these predicates, unlike verbs such as *try*, do not have an entailment that requires the embedded subject to be exactly identical with the matrix subject, which Chierchia (1983, 1984a & 1984b) treats as a kind of a meaning postulate (see also section 4.3 for a relevant issue).

3.6.2.4 Control Into Interrogative Infinitival Complements

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Certain predicates take an interrogative infinitive (i.e. infinitival CP led by a *wh*-phrase) as their complement. Consider new sentence (183) together with the old example (46a).

(183) Sue asked [what PRO to buy in Rome].
(46)a. Mary wasn't sure [when PRO to introduce oneself to John].

Most studies so far have classified control into interrogative infinitival complements as NOC (or its equivalent) (e.g. Williams 1980, Manzini 1983, Bouchard 1984, Koster 1984, Martin 1996[85]). This is mainly because it can take the generic anaphor *oneself* as an argument of the control clause, as can be seen in (46a), which suggests that PRO in it can be arbitrary.[86] However, Landau (2000) argues that this construction is actually OC (see also Chomsky & Lasnik (1977) and Lebeaux (1984) for the same view). He maintains that it exhibits the PC effect, where the referent of PRO must always include that of the "local" argument. Thus, in the above two sentences, *Sue/Mary* is inevitably part of an unspecified group that PRO refers to, which can be shown by using condition B. Observe (184) and (46b), introduced in section 3.3.2.

(184) *Sue$_i$ asked [what PRO$_{arb}$ to buy her$_i$ in Rome].
        (Landau 2000 (31d) p.39)
(46)b. *Mary$_i$ wasn't sure [when PRO$_{arb}$ to introduce oneself to her$_i$].

In fact, even if *oneself* is present in the infinitive, the Condition B effect cannot be evaded, as shown in (46b). Therefore, PRO in interrogative infinitival complements is not truly arbitrary.

I assume the following derivation for this construction. In (185), the derivation of sentence (183) is depicted as an example. (The locative PP *in Rome* is left out for simplification.)

(185) The Derivation of *Sue asked [what PRO to buy]*:
        1. buy what
        2. PRO buy what
        3. to PRO buy what
        4. PRO$_i$ to t$_i$ buy what
        5. what$_j$ PRO$_i$ to t$_i$ buy t$_j$
        6. asked what$_j$ PRO$_i$ to t$_i$ buy t$_j$

7. Sue asked what$_j$ PRO$_i$ to t$_i$ buy t$_j$

8. Sue$_k$ t$_k$ asked what$_j$ PRO$_i$ to t$_i$ buy t$_j$

At step 6, the control clause is merged as the complement of *asked*. At step 7, a VP syntactic predicate is formed by the merger of *Sue*, whereby the ACPD of PRO is determined to be this domain. Since it contains only *Sue* as a potential antecedent link, this DP is automatically selected as the controller. Crucially, this should be an instance of OC, which coincides with Landau's view. In the remainder of this subsubsection, I will demonstrate that this hypothesis is indeed correct.

First of all, as mentioned in section 3.3.2, control into interrogative infinitival complements does not allow "long-distance" control. Consider example (186b). Sentence (186a) is provided to show that the construction itself has no problem.

(186)a. Mary$_i$ knows [where PRO$_i$ to hide herself].
    b. *Mary$_i$ thinks [that Bill knows [where PRO$_i$ to hide herself].

Furthermore, even if the controller is made close to PRO by parenthesizing *Mary thinks*, the sentence does not improve, as illustrated in (187).

(187) *Bill knows, Mary$_i$ thinks, where PRO$_i$ to hide herself.

Moreover, even if the discourse salience of the controller is raised by switching it to first person, the example remains ill-formed, as shown in (188).

(188) *We$_i$ think [that Bill knows [where PRO$_i$ to hide ourselves]].

Also, even if the salience of the intervenor is lowered by replacing *Bill* with nonhuman *the bear*, the sentence is still ruled out, as shown in (189).[87] As can be seen in (190), even if the salience of the controller is raised at the same time, the result would be the same.

(189) *Mary$_i$ thinks [that the bear knows [where PRO$_i$ to hide herself]].
(190) *We$_i$ think [that the bear knows [where PRO$_i$ to hide ourselves]].

Finally, even if the salience of the intervenor is lowered by replacing *Bill* with indefinite *someone*, "long-distance" control does not improve, as can be seen in (191).

Again, even if the salience of the controller is raised at the same time by switching it to first person, the sentence is no better, as shown in (192).

(191) *Mary$_i$ thinks [that someone knows [where PRO$_i$ to hide herself]].
(192) *We$_i$ think [that someone knows [where PRO$_i$ to hide ourselves]].

Next, let us consider the following pair of examples.

(193)a. Ken$_i$ asked Susan$_j$ [how PRO$_i$ to express himself/*PRO$_j$ to express herself before a large audience].
    b. Susan$_j$ was asked by Ken$_i$ [how PRO$_i$ to express himself/*PRO$_j$ to express herself before a large audience].

In (193a) PRO is controlled by the matrix subject *Ken*, and control by the object is ungrammatical. Still, there remains a possibility that this construction is actually POC, but it is only the subject that controls PRO because its referent is more empathized with than that of the object (vid. Surface Structure Empathy Hierarchy). However, in (193b), where the matrix verb is passivized, PRO takes the deep subject rather than the surface subject as its controller. This behavior, as discussed in section 3.6.2.2, is typical of OC. Above all, it is difficult to conceive of this construction as POC, because in (193b) PRO is controlled by an oblique, whose discourse salience is very low, though the subject, whose salience is quite high, is perfectly available as its controller.

Besides, there are also object-control interrogative verbs (*explain*, *instruct*, *show*, *teach*, *tell*, etc.). Observe the examples in (194).

(194)a. Kate explained to her uncle [when PRO to introduce himself/*herself to the guests].
    b. Amy showed Fred [where PRO to wash himself/*herself].

This is reminiscent of the fact that some OC verbs like *promise* and *vow* exhibit subject control, and others like *persuade* and *tell* exhibit object control.

Therefore, from all of the evidence above, I conclude that control into interrogative infinitival complements is true OC rather than POC.

3.7 Summary

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The main points of this chapter can be summarized as follows.

1. As proposed by Williams (1980), broadly classified, there are two types of control: obligatory control (OC), in which PRO takes a local controller, and non-obligatory control (NOC), in which such a controller is missing.
2. In OC, PRO is licensed by the Chain Condition.
3. The local domain of PRO is its ACPD, which is the syntactic predicate whose head selects the control clause.
4. The R-property of PRO is negative.
5. In NOC, PRO is licensed by discourse conditions.
6. When PRO does not find a potential antecedent link in its ACPD, it moves to some non-argument position as a last resort. This operation virtually turns PRO into a logophoric element.
7. There exist control constructions that look very much like OC but are, in fact, properly classified as NOC, which I call *pseudo-obligatory control (POC)*.
8. If a given construction suspected as POC is sensitive to some of the discourse factors, then it is POC, whereas if it is not responsive to any, then it is true OC.
9. While super-equi constructions and control into adjunct clauses are POC, control governed by desiderative predicates and control into interrogative infinitival complements are true OC.

Notes to Chapter 3

1. The licensing view also straightforwardly explains the following contrasts.

(i)a. There$_i$ seems t$_i$ to be a unicorn in the garden.

(Chomsky 1986b (160i) p.131)

b. *There seems that a unicorn in the garden.

c. *There seems a unicorn to be in the garden.

(Chomsky 1986b l.2-3 fn.70 ch.3)

(ii)a. The government considers him (to be) a CIA agent.

b. The government considers there ??(to be) a need for a radical change.

In (ia), before existential *there* raises to the matrix clause, it first merges with the existential predicate *to be* ..., where it is properly licensed. By contrast, (ib) (as well as (2b)) is ungrammatical, because *there* directly merges with the matrix predicate, which is not existential. Similarly, in (ic), since the Spec of the existential predicate is already filled with *a unicorn*, *there* directly merges as the Spec of the matrix IP, and the sentence is excluded. Meanwhile, as shown in (iia), when the sequence *to be* appears in the complement clause of a verb such as *consider*, it can generally be left out, retaining a similar meaning. However, when existential *there* is the subordinate subject, the omission of *to be* leads to awkwardness, as can be seen in (iib). This is also believed to be because the copula is the licenser of *there*. Note that although covert raising of the associate to the expletive (Chomsky 1986b, 1991 & 1993), which abides by locality, can account for the ungrammaticality of (ib), it does not provide any explanation for the ill-formedness of the other examples.

2. Some might claim that sentences such as those in (i) also involve PRO, coindexed with the matrix subject, as indicated in (ii) (see also Hornstein (1999 & 2000) on this issue).

(i)a. Mary behaved at the party.

interpretation: 'Mary behaved herself at the party.'

b. John washed in cold water.

interpretation: 'John washed himself in cold water.'

(Uchiumi 2005a (16a) & (16b) p.7)

(ii)a. [$_{IP}$ Mary$_i$ behaved PRO$_i$ at the party]

b. [$_{IP}$ John$_i$ washed PRO$_i$ in cold water]

If that is the case, then PRO occurs in the object position, which consequently jeopardizes the generalization introduced in the text. However, I believe that the Theme arguments in these instances are not PRO but something only active in semantics. For example, I postulate the following syntactic and semantic representations for sentence (ia).

(iii)a. [$_{IP}$ Mary behaved at the party].   (syntax)

b. [$_{IP}$ Mary behaved Th at the party].   (semantics)

The reason why (ia) and (ib) are interpreted reflexively is because, as Reinhart & Reuland (1993) suggest, heads like *behave* and *wash* are intrinsically reflexive in the lexicon.   While the former is obligatorily reflexive, the latter is only optionally so. Thus, *criticize*, which is not inherently reflexive, cannot be construed reflexively in the same context, as can be seen in (iv).

(iv) *Bill is always criticizing.

interpretation: 'Bill is always criticizing himself.'

(Uchiumi 2005a (16c) p.7)

3. In a way, this view can be regarded as a variant of the null Case account of the distribution of PRO (Chomsky & Lasnik 1993/1995 and Martin 1996 & 2001).   The null Case analysis argues that PRO has null Case to check and that this Case can only be checked in the Spec of nonfinite IP.   However, my approach differs from the null Case approach in two respects.   First, I am not necessarily committed to the idea that it is this special Case that is the licensing entity for PRO (though I by no means exclude it as a possibility).   Second, while Chomsky & Lasnik and Martin maintain that this is a profound explanation of the distribution of PRO, I rather willingly admit that it is simply a stipulation.

4. In fact, it should be noted that the two elements are not completely parallel in this respect.   Namely, with existential *there*, the licensing takes place at the underlying level, or in other words, it must directly merge with an existential predicate.   By contrast, the initial merger of PRO is not with a nonfinite IP, and PRO is licensed by movement to an appropriate position.

5. The "local" domain of PRO will be clearly defined in section 3.4.1.2.

6. The term "surface structure" here corresponds to what has later come to be called S-structure.

7. Williams defines c-subjacent as in (i).

(i) C-Subjacent:

B is c-subjacent to A iff A is dominated by at most one branching node which does not dominate B.   (Williams 1980 l.2-3 fn.1)

8. Since Williams does not specify what kind of structures he assumes for (5a) and (5b), I cannot tell how these sentences abide by or violate the c-subjacent condition.   The same comment applies to example (6) as well.

9. Williams (1980: fn.3) adds the proviso that this may be an accident of English.

10. Elsewhere in the paper, Williams also explains extraposition constructions like (i),

using the predicational theory.

> (i) It is clear that he is here. (Williams 1980 (76a) p.219)

In his analysis, the AP *clear* is a predicate, and the extraposed clause is its antecedent. However, the latter does not precede the former here.

11. According to Langacker (1969), the definition of command is as follows.

> (i) Command:
>> A node A "commands" another node B if (1) neither A nor B dominates the other; and (2) the S-node that most immediately dominates A also dominates B. (Langacker 1969 p.167 l.9-11)

12. Verbs like *begin* are ambiguous between control and raising. For a basic argument in favor of this claim, see Perlmutter (1970), though he does not use the terms "control" and "raising".

13. Martin (1996: fn.9 ch.3) reports that many young speakers reject control *promise* with a Goal DP like (14d). I also confirmed that this construction was ungrammatical for some of my informants. Incidentally, I found sentence (i), which involves the construction at issue, in the script of the movie Love Story.

> (i) I wish I hadn't promised Jenny to be strong for you. (the movie *Love Story*)

Since the film came out in 1970, it is supposed that this construction was more or less common at least around that time.

14. Petter (1998) and Landau (2000) note that sentences whose constructions are equivalent to that of (15b) are well-formed. Their actual examples are given below.

> (i)a. John$_i$ promised Mary$_j$ [PRO$_{i+j}$ to go to the movies together].
>> (Petter 1998 (58d) p.207)
> b. John$_i$ promised his son$_j$ [PRO$_{i+j}$ to go to the movies together].
>> (Landau 2000 (11a) p.31)

In fact, my informants by and large agreed that the sentences in (i) were acceptable, whereas (15b) was degraded. However, I have no idea of what factor it is that differentiates these two cases.

15. Manzini (1983) simply reports that with respect to sentences like (18b), the controller shifts to the object and does not mention the ambiguity at all.

16. The fact that the shift takes place with respect to the controller choice of *promise* under certain circumstances is first noted by Hust & Brame (1976). Their actual example is (i), in which the control verb *promise* is passivized.

> (i) Harry$_i$ was promised by Bill$_j$ [PRO to be allowed to leave]$_{i/*j}$.
>> (Hust & Brame 1976 (32) p.255)

17. Coppock (2005) also presents an example of the impersonal passive of *promise,* given

in (i), which she quotes from the World Wide Web.

> (i) The EP Delegation also participated in the presentation of a CD-ROM about UN Human Rights activities by the Canadian mission and met Canadian politicians.   It was promised to make this product available to the European Parliament.
>
> (Coppock 2005 (17) p.3, quoted from the European Parliament website, http: //www.europarl.eu.int/comparl/afet/droi/whats_new/report_unchr_2003.pdf)

18. The term "subject" here and in (26) corresponds to what Chomsky (1981) calls a SUBJECT.

19. Manzini defines c-domain as in (i).

> (i) C-Domain:
>
> γ is the c-domain of α iff γ is the minimal maximal category dominating α.
>
> (Manzini 1983 (1) p.422)

20. In Manzini's system, it seems that an anaphor lacking a governing category vacuously satisfies the "governing category" clause in (24).

21. According to Emonds (1976), an infinitive in the embedded subject position as in (32) is ungrammatical (at least for some speakers).

22. Some of my informants judged this type of sentence and the type in (37) to be slightly awkward.   Also, it seems that the latter is a little worse than the former according to their judgments.

23. I think that Manzini counts AGR as the governor for S' in (38), but I am not completely sure.

24. In this framework, the *wh*-phrase eventually moves to C, dominated by S', in the tree.

25. Since Hornstein adopts the copy theory of movement (Chomsky 1993 & 1995), the structure looks as depicted in step 2 in (50) with two copies of *John*.

26. Hornstein also categorizes the variant of super-equi construction with its control clause extraposed, as in (i), under NOC.

> (i) It is impossible [PRO$_{arb}$ to win at roulette].   (Hornstein 1999 (44a) p.92)

Although he does not discuss exactly what kind of structure he assumes for such a construction, it is safe to say that the crucial part of its derivation is the same as the derivations of the sentences in (53).

27. Although Hornstein says that sentences (54a)-(54e) are from Lebeaux (1985), (54f) from Higginbotham (1992), and (54g) from Fodor (1975), exactly the same examples are not entered in the specified articles.   As for the last two examples, however, I could find very similar sentences.

28. The argument here is based on the assumption that *expect*, *tell* and *remember* are all

OC verbs. Although I believe that this categorization is adequate, not all researchers necessarily agree with it.

29. The de se/de re distinction comes from whether or not the relevant person in the sentence recognizes her own identity. Namely, in order for (54f) to be true, *the unfortunate* must be fully aware that the potential recipient of a medal is the unfortunate himself, which is called the de se reading. On the other hand, sentence (i) has another interpretation in addition to the de se reading.

> (i) The unfortunate$_i$ believes [that [PRO$_i$ getting a medal] would be boring].
> (Hornstein 1999 (6f) p.73)

Suppose that *the unfortunate* is a war hero who suffers from amnesia. One day, he happens to learn that a man, who is actually the unfortunate himself, fought in the war very bravely. He thinks that the government might decorate this guy for his courageous exploits but that getting a medal would be boring. Under this scenario, *the unfortunate* does not understand that the potential recipient is the unfortunate himself. This is called the de re reading, which example (54f) crucially lacks.

30. Actually, with respect to this problem, a few potential solutions have been presented in the literature. Hornstein (2003) suggests treating PC as the result of an optionally applicable meaning postulate, which occurs with certain control verbs. That is, if a verb takes a non-finite [+tense] complement, then it optionally licenses in semantics the reading where the actual controller plus some contextually specified others is the complement subject. One piece of evidence that Hornstein offers to support this line of approach is that a PC interpretation is absent from control into adjunct clauses as in (i).

> (i) *John$_i$ saw Mary$_j$ [after PRO$_{i+j}$ meeting at six].
> (Hornstein 2003 (83a) p.43)

However, the ill-formed status of this sentence is not very clear. In fact, many of my informants judged it to be in the acceptable range.

On the other hand, in the movement theory of OC by Barrie (2004) and Barrie & Pittman (2004a & 2004b), a chain created by the movement from the embedded clause to the matrix clause is split into two at LF in order to satisfy the θ-criterion. Then the lower chain gets reinterpreted to accommodate the "plurality" of the subordinate predicate. Indeed, in principle, one could introduce almost any tool to make the movement analysis work. However, this sort of approach raises a number of questions. In particular, it is not clear why the grammar, if it ultimately wants two chains, does not just form two short chains in the first place instead of once creating a long chain and then breaking it into two. I believe that if one is to pursue the movement theory of OC, then a better line of solution is to restrict the application of the operation to cases in which the

value of PRO is exhausted by that of the controller, namely exhaustive control (EC), claiming that PC constructions are actually NOC, as Williams (1980), Martin (1996) and Wurmbrand (2001 & 2002) do (but see the latter part of this subsection for my argument that even this modified version is faced with problems).

31. Bowers (2005) proposes a potential solution to this problem. In his movement analysis of OC, the MLC is always respected. Namely, in (18a) and (19b), unlike in (18b) and (19a), for example, the object NPs/DPs bear inherent Case, and therefore, the embedded subjects can raise past them. (Hornstein (2000 & 2003) suggests a similar possibility for sentences like (18a) but not for those like (19b).) As for the reason why the former pair is associated with the subject control structure, and the latter pair with the object control structure, Bowers supposes that some semantic and pragmatic factors are involved. Note, however, that in order to properly describe the control facts, including those in (18) and (19), we only need the semantic/pragmatic assumption. If that is the case, then the MLC is redundant, or at least it is not clear what exactly it does in his system. Hornstein (2003), on the other hand, simply claims that sentences involving control shift are not OC but NOC.

32. Baltin marks this sentence as a full check. Yet my informants judged it to be marginal at best, though they still felt that it was better than (62a) (see also Hasegawa (1984: fn.15), who reports similar degraded judgments on this construction).

33. Although Hornstein (2000: fn.83 ch.2) does note that sentences like (62b) are somewhat better than those like (62a) for some speakers, he does not mention that there is a contrast between sentences like (61a) and those like (62a).

34. The argument here is presented in Uchiumi (2007).

35. I have chosen to use *want* as a representative OC verb, which happens to allow PC. This is to make the direct comparison of a control variant with its overt infinitival subject counterpart possible. However, readers should bear in mind that the basic argument here is valid with verbs that prohibit PC such as *try* or with any other OC verbs.

36. The movement approach to OC could be maintained by abandoning the copy theory of movement and assuming that the movement operation leaves a trace that is distinct from the moved element just as the traditional theory does. However, I think that Hornstein would not want to give up the copy theory.

37. Hornstein (2003) disagrees with such a characterization, claiming that not all instances of NOC PRO are logophoric. He mentions that while NOC PRO can support split antecedents and allows a strict reading under ellipsis, the Japanese anaphor *zibun*, which is sometimes claimed to be logophoric, does not have these options available, as indicated in (ib) and (ii). (Sentence (ia) is provided to show that the basic structure of

(ib) itself has no problem.)

    (i)a. Tarou$_i$-wa   Hanako-ni   [zibun$_i$-wa   Tomoko-o

        Tarou$_i$-Top   Hanako-Dat   [self$_i$-Top   Tomoko-Acc

        gokai-si-te-i-ru-kamosirenai-to]   it-ta.

        misunderstanding-do-Prt-Prog-Nonperf-may-Comp]   say-Perf

        'Tarou$_i$ told Hanako that he$_i$ might misunderstand Tomoko.'

       b. *Tarou$_i$-wa   Hanako$_j$-ni   [zibun$_{i+j}$-wa   otagai-o

        Tarou$_i$-Top   Hanako$_j$-Dat   [self$_{i+j}$-Top   each.other-Acc

        gokai-si-te-i-ru-kamosirenai-to]   it-ta.

        misunderstanding-do-Prt-Prog-Nonperf-may-Comp]   say-Perf

        'Tarou$_i$ told Hanako$_j$ that they$_{i+j}$ might misunderstand each other.'

    (ii) Takahasi-ga   zibun-o   home,   Kenzi-mo   sou-si-ta.

        Takahasi-Nom   self-Acc   praise   Kenzi-also   so-do-Perf

        'Takahasi praised himself, and so did Kenzi (Kenzi praised himself/*Kenzi

        praised Takahasi).'   (Hornstein 2003 (103b) p.51)

However, it is not clear why Hornstein chooses Japanese *zibun* as a representative logophoric element.   For example, some authors (e.g. Kuno 1975, Landau 2000 & 2001 and Uchiumi 2004) demonstrate that NOC PRO behaves just like a possessor-less *picture*-noun anaphor, which is, in my view, more widely accepted as a logophor than *zibun*.

38. I do not believe that a sentence like (i) is an instance of intersentential control.

    (i) John$_i$ even shaved for the interview.   [PRO$_i$ Making himself presentable] is
        very important.

As suggested by Kimball (1971), adjectives like *important* implicitly project a dative argument, at least at the semantic level (and maybe at the syntactic level as well).   In the above example, such a null dative, which is coreferential with *John* in the preceding sentence, controls PRO, as illustrated in (ii).

    (ii) John$_i$ even shaved for the interview.   [PRO$_i$ Making himself presentable] is
        very important φ_{to} pro$_i$.

Therefore, in (i) the control relation itself is established within the second sentence.

39. Landau considers the five criteria in (i) to (jointly) define the categories of OC and NOC (though he himself conflates criteria (ic) and (id) into one).

    (i) The OC/NOC Categories:

        a. Arbitrary control is impossible with OC but possible with NOC.

        b. "Long-distance" control is impossible with OC but possible with NOC.

        c. The strict reading of PRO under ellipsis is impossible with OC but

possible with NOC.

      d. When the controller contains the focus operator *only*, the referential
         reading of PRO is impossible with OC but possible with NOC.

      e. The de re reading of PRO is impossible with OC but possible with NOC.

Since these properties have already been discussed in the previous sections (see section 3.3.3 in particular), I will not mention them again here.

40. Because PRO moves out of the VP to the Spec of TP and not as far as the Spec of CP, it is not visible to the matrix functional head in Chomsky's (2000 & 2001) version of the PIC. However, Landau modifies the PIC to the effect that interpretable features are accessible wherever they may be from the immediately superordinate phase. Since PRO, according to Landau, consists of interpretable features alone, it can be accessed by the Agree triggered by the functional head.

41. Non-psychological variants equivalent to (66b) and (66d) are not discussed in Grinder (1970). Thus, the psych/non-psych-parameter is newly introduced by Landau.

42. Chomsky (1981) has already noted a contrast equivalent to that between (72a) and (72c), which is given in (i).

    (i)a. [PRO_i Finishing his work on time] is important to John's$_i$ development.

      b. *[PRO_i Finishing his work on time] is important to John's$_i$ friends.

       (Chomsky 1981 (19iii) & (19ii) p.77)

43. J&C and C&J use this notation rather than the conventional PRO notation to indicate the notional subject of an infinitive/gerund that lacks an overt subject. This is because they intend to remain neutral with respect to the issue of whether such a subjectless infinitive/gerund really has a null subject at the syntactic level.

44. In addition to the availabilities of "long-distance" control and generic control, J&C and C&J make use of the availabilities of split antecedent control, speaker/hearer control and discourse control (i.e. control by an intersentential antecedent) as diagnostics for the classification of control constructions. However, I will leave them out here to simplify the discussion.

45. This sentence is not bad according to some of my informants. However, I mark it with a * to be consistent with J&C and C&J's judgments.

46. Actually, some of my informants judged this sentence to be in the acceptable range.

47. Specifically, J&C and C&J propose the following control equations for *promise* and *persuade,* respectively. With respect to the former, they take it to be decomposable into 'undertake an obligation'. Since one cannot be obligated to perform an action other than one's own, with *promise*, it is always the undertaker of the obligation, namely the matrix subject, that controls the subject of the infinitival complement. With respect to

the latter, its decomposition gives 'cause someone to come to intend'. Since one can only execute one's own intention, with *persuade*, it is always someone who is caused to hold the intention, namely the matrix object, that controls the subject of the infinitival complement.

48. It seems that J&C and C&J believe that *persuade* never undergoes control shift. However, this assumption is wrong -- *persuade* does shift to subject control under certain circumstances for some speakers, as already illustrated in (19b), repeated below.

(19)b. Susie$_i$ persuaded the teacher$_j$ [PRO$_{i/*j}$ to be allowed to leave early].

49. Most of the examples of control shift with *promise* that J&C and C&J adopt involve the passivization of the control verb. Perhaps for this reason, they do not seem to realize that *promise*, when active, is actually ambiguous between subject control and object control under control shift. See, for instance, the previous example (18b).

50. In (92b) the modal *can* is used instead of the future auxiliary *will*. This is because when the complement subject is generic *one*, *will* is a little awkward as the complement verb, as can be seen in (i).

(i) ?Judy thinks that Henry hopes that one will redeem oneself.

51. When discussing OC in the rest of this thesis, I deliberately abstain from mentioning control in nominals such as *John's attempt [PRO to leave]*. This is because I have a strong suspicion that such control is not OC (see also Hornstein (2003) for the same view). For instance, consider the following pair of examples with *promise*.

(i)a. *Mary heard that her$_i$ father had promised the principal [PRO$_i$ to behave herself in school].

b. Mary heard about her$_i$ father's promise to the principal [PRO$_i$ to behave herself in school].

With the verbal variant, there appears to be a strict requirement that the controller must be exactly the subject of the clause immediately superordinate to the control clause, which is why (ia) is ungrammatical. With the nominal variant, on the other hand, this requirement can be somewhat relaxed. Namely, the controller does not necessarily have to be the "subject" of the nominal so long as the referent of the former is understood to be potentially influenced by that of the latter. In (ib) PRO can be controlled by the possessor of the "subject" of *promise* (or the matrix subject), since it is natural to suppose that Mary is potentially influenced by her father. This phenomenon is just like semi-control, discussed in section 3.3.5. Therefore, I believe that it is dangerous to refer to control in nominals in the discussion of OC.

52. As to what a syntactic predicate is, see section 2.3. See also Reinhart & Reuland (1993).

53. In some frameworks, an answer to this question has been provided theory-internally. For example, in the standard GB approach, an OC infinitive is supposed to be S' (or CP in the current terminology), because PRO must be ungoverned, which is sometimes called the PRO theorem.　See Chomsky (1981) for details.

54. Manzini (1986) has already observed that in (i), where the dative argument of *shout* is phonologically unrealized, PRO cannot be interpreted as being coreferential with the matrix subject.

　　　　(i) Mary$_i$ says that John shouted [PRO$_{*i/arb}$ to leave].　(Manzini 1986 (10) p.326)

Note, however, that the sentence itself is grammatical under the construal where PRO is arbitrary in reference.　This control relation is probably licensed by an arbitrary implicit dative, since the one who should leave in (i) must coincide with whomever John shouted to.　For example, if John shouted to someone, 'Have them leave right away', then the sentence is false.　It seems that PRO bound by an implicit dative with pragmatically determined reference is sanctioned in narrower contexts than one bound by an implicit dative with arbitrary reference.

55. With respect to the NOC sentences in (21), Kuno (1975) provides corresponding *picture*-noun anaphor examples, which show a striking parallelism between NOC PRO and logophors, given in (i).

　　　　(i)a. John said to Mary that there was a picture of herself with a Mafia figure in the newspaper.

　　　　　b. *John said about Mary that there was a picture of herself with a Mafia figure in the newspaper.

　　　　　(Kuno 1975 (21) & (22a) p.33)

56. As discussed in section 2.6.1, logophors display a three-way contrast with respect to the Speech-Act Participant Empathy Hierarchy.　Observe the examples in (i).

　　　　(i)a. The queen invited Lucie and myself for a drink.

　　　　　b. ?The queen invited Lucie and yourself for a drink.

　　　　　c. *The queen invited Lucie and himself for a drink.

　　　　　(Also appeared as (123a)-(123c) ch.2 p.66)

However, in (124) NOC PRO shows only a two-way contrast with first person and second person PRO being acceptable and third person PRO being awkward.　I have no idea of where such a difference comes from.

57. Logically, there is another way to interpret the data in (124).　Suppose that there exists no such element as PRO and that the gerunds in (124) lack a subject in the radical sense.　Then these gerunds do not form syntactic predicates, and the reflexives inside are logophors.　If that is the case, then the contrast in (124) can be understood virtually in

the same way as that in (i) in endnote 56, reproduced below.

(i)a. The queen invited Lucie and myself/?yourself for a drink.

b. *The queen invited Lucie and himself for a drink.

However, the following pair of examples eliminates such a possibility.

(ii)a. [PRO Working on my/your own] is inefficient for the project.

b. ??[PRO Working on his own] is inefficient for the project.

(where PRO is exophoric)

The sentences in (ii) have a pronominal rather than a reflexive. Nevertheless, the contrast is still there. Thus, it must be concluded that in (124), as well as in (ii), the logophoric effect is not induced by the reflexives but by something else such as PRO. I think that this is strong evidence in favor of the existence of PRO in infinitives/gerunds lacking an overt subject.

58. In (i) PRO can be interpreted as an animate nonhuman.

(i) [PRO To hibernate in the winter] would be necessary.

However, in the above sentence, *necessary* projects an implicit dative argument (i.e. *necessary to ...*) (see endnote 38 for a similar example), and PRO is controlled by this element which happens to be generic. Thus, the control relation in this example is not truly arbitrary.

59. As Jon Nissenbaum (pc) points out, this operation is countercyclic. My intuition is that it is somehow permitted, because it involves movement to a non-argument position. Note that though countercyclicity is generally regarded as problematic, some operations apparently of this kind have been proposed in the literature. For example, late adjunction, suggested by Lebeaux (1988), arguably does not obey cyclicity.

60. Another type of verb with a gerundive complement that Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005) report exhibits an NOC-like effect is some sort of communication verb such as *discuss* and *mention*. However, I will abstain from providing any analysis for this construction, because I am still uncertain about how to deal with it. The major reason why I am undecided about my position on it lies in the obscurity of the judgments on this construction. For example, though it is sometimes noted in the literature that "long-distance" control examples like (81), reproduced below, are ungrammatical, they do not sound so bad according to my informants, as mentioned in endnote 45.

(81) *Amy$_i$ thinks that [Ben discussed [PRO$_i$ taking better care of herself]].

Also, while the fact that (ia) is ill-formed indicates that arbitrary control is prohibited in this construction, it seems that (ib) is judged to be more or less acceptable, which suggests that such control might be possible.

(i)a. *Sharapova$_i$ discussed [PRO$_{arb}$ beating her$_i$ in a match].

    b. (?)Goebbels$_i$ discussed [PRO$_{arb}$ devoting oneself to him$_i$].

61. Although copulative verbs usually denote some form of equality, *beat* expresses inequality, namely 'being better than'.

62. Another potential problem with the analysis presented in this chapter is that some sort of gerund in the subject position exhibits an OC-like effect, as noted by Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005).   Observe the following example.

(i) Amy$_j$ thinks that [[PRO$_i$ calling attention to himself/*PRO$_j$ calling attention to herself/*PRO$_{arb}$ calling attention to oneself] was rude of Bert$_i$].

(Jackendoff & Culicover 2003 (65) p.535)

Indeed, in the present system, a nonfinite clause merged as the specifier of a syntactic predicate should always exhibit NOC.   My intuition about this issue is that the construction itself is syntactically NOC but that some other factors such as semantics and pragmatics force PRO to take the "local" argument as its controller (see section 3.6 for the view that there exists such a phenomenon).   Unfortunately, however, I do not have any evidence at hand to show that this is actually the case.

63. The material provided here is presented in Uchiumi (2004).

64. Readers should note that "local to something" in this section does not necessarily mean 'being in its ACPD'.   Rather, the term is used in the loose way as it was used in sections 3.2 and 3.3, where the local domain of PRO was not rigorously defined yet. Thus, "local" here should simply be understood as 'being fairly close'.   Likewise, the term "long-distance" in this section is used in the sense of 'being more or less far away'.

65. However, Petter (1998) provides the following example, which casts doubt on this conclusion itself.

(i) Miss Reed$_i$ wanted to take her class$_j$ on a school trip.   It was decided (by the board) [PRO$_{i+j}$ to leave on Friday morning at 8:00].

(Petter 1998 (53c) p.205)

In (i) the referent of PRO is *Miss Reed and her class*, which is clearly distinct from that of the matrix agent.   Observe also the sentence below, constructed by Lisa Travis (pc).

(ii) [John and Mary]$_i$ had not been getting along for years.   It was decided by their mediator [PRO$_i$ to separate for a while].

In (ii) it is grammatically impossible for PRO to be coindexed with the matrix Agent *their mediator*, because intransitive *separate* requires a plural subject of sorts.

66. Although the proposition that if a construction requires a "local" controller, then it is OC is indeed false, the converse of this statement is true as far as the present system is concerned.   Namely, if something is OC, then it always requires a "local" controller.

67. Some might challenge this conclusion by the following line of argument. That is, this diagnostic can never prove that something is really OC. Namely, even if it is shown that a given construction is insensitive to all of the discourse factors that we know of at this point, there is always a chance that a new one will be discovered in the future, which happens to be relevant to the construction at issue. Indeed, I recognize such a criticism, but this argument commits a logical falacy called the negative proof. That is, the burden of proof should be on the one proposing existence rather than on the one questioning it. Otherwise even an absurd statement like, 'A unicorn exists', cannot be refuted, since no one can check the whole universe. Therefore, in science, not being able to prove the existence of something is generally regarded as its nonexistence. For example, we consider aspirin to be safe, not because there is absolute evidence that it is safe, but because no evidence has been found so far to show that it can be dangerous in the appropriate use. By the same token, in the absence of proof that a certain construction is POC, it can legitimately be claimed that it is OC.

68. In (139) *John* appears to the right of PRO rather than to its left, which should make it a less optimal potential controller according to the Directionality Condition. It seems that unlike logophors, NOC PRO does not give high priority to this condition.

69. For some reason, this construction does not allow "long-distance" control even with the substitution, as can be seen in (i).

(i) *Mary$_i$ said that [PRO$_i$ to leave] was the project's aim.

Although I do not have any explanation for this phenomenon, for the purpose of demonstrating that the construction under discussion is not true OC, showing that arbitrary control is possible would be sufficient.

70. In (148b) *disgrace* is used rather than *damage* as the non-psychological predicate, because most of my informants complained that they could not say *to damage someone*.

71. In (155) and (157) the matrix tense is altered to simple past so that it may fit with the modality of the finite embedded clause. Also, in (156) *disgrace* is used as the matrix verb for the same reason as specified in endnote 70.

72. Again for the same reason as specified in endnote 70, when this sentence and (66b) were presented to my informants, the matrix verb was replaced by *disgraced*.

73. The semi-argument analysis is also supported by the following contrast.

(i)a. (*)How didn't Mary talk to the children? (Answer: Abusively)

b. *How didn't Mary disassemble the car? (Answer: With a wrench)

Matrix negation as in (i) is another typical weak island, called the negative island (Ross 1984). As expected, for some speakers, manner *how* can be extracted in this environment, while extraction of instrumental *how* is impossible for everyone. It is well

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known that complement clauses of factive verbs such as *admit* and *regret* also constitute weak islands (viz. factive island of Cinque (1990)).   However, among my informants, only one reported that sentence (iia) was significantly better than (iib).

  (ii)a. (*)How$_i$ did Bill admit [that Mary had driven the dump truck t$_i$]?
    (Answer: Recklessly)

  b. *How$_i$ did Bill admit [that Mary had broken the dump truck t$_i$]?   (Answer: With a hammer)

74. In this subsubsection I will restrict the discussion to participial adjunct clauses as in (164a) and temporal adjunct clauses as in (164b).   Although the analysis presented here may also be applicable to adjunct clauses headed by *while* as in (ia) and those headed by *without* as in (ib), it is worth noting that with rationale clauses as in (ii), many additional factors are involved.

  (i)a. Douglas finished two magazines [while PRO waiting for his wife in the coffee shop].

  b. Pennie left [without PRO saying good-bye].

  (ii) They went as far as the neighboring city [(in order) to PRO purchase a new computer].

75. I agree with Williams (1994) that there exists a distinct type of participial adjunct similar to what is being discussed, which he calls *direct predication*.   It is typically characterized by the right-adjunction to the matrix clause with no pause, as in the example below.

  (i) The device arrived spewing forth sparks.   (Williams 1994 (25c) p.84)

Although the dividing line between the two is sometimes blurred, direct predication as in (i) should be kept apart from control into adjunct clauses as in (164).

76. This fact has already been reported by Mohanan (1983) with respect to participial adjunct clauses and by Manzini (1986) with respect to temporal adjunct clauses.

77. There also exists a class of adjunct clause constructions (*considering (that)*, *depending on*, *judging from*, etc.) that do not require "local" subject control even when right-adjoined, as shown in (i).

  (i) The team is doing well, considering that they do not have much experience.

As Mohanan (1983: fn.7) suggests, I think that these are different from regular "control into adjunct" instances, presumably idiomatic and not involving control at all.

78. Actually, among my informants, there were a few speakers who said that they could take the deep subject as the controller of PRO in both sentences.

79. The fact that if the matrix verb is passivized, then PRO in right-adjoined adjuncts usually takes the surface subject rather than the deep subject has already been reported by

Mohanan (1983) with respect to participial adjunct clauses and by Adler (2006) with respect to temporal adjunct clauses.

80. The ditransitive verb most frequently cited as one exhibiting (obligatory) subject control is *promise*. Observe example (ia).

(i)a. John$_i$ promised Mary$_j$ [PRO$_i$ to behave himself/*PRO$_j$ to behave herself].

b. Mary$_j$ was promised by John$_i$ [?/*PRO$_i$ to behave himself/*PRO$_j$ to behave herself].

However, this verb is not easily passivized, as shown in (ib). This fact is known as Visser's Generalization (Bresnan 1982), which states that subject control verbs never passivize. I suspect that the source of this constraint is that in the passives of subject control constructions, PRO is not c-commanded by its controller, since the latter is embedded in a *by*-phrase. Still, as specified by the mark, (ib) was judged to be marginally acceptable by some of my informants. I assume that for these speakers, an element can somehow c-command out of a *by*-phrase so long as it expresses a demoted subject. As expected, for those who accepted (ib), the controller was the underlying subject *John* rather than the derived subject *Mary*.

81. This fact has already been noted by Adler (2006). Landau (2000) also reports a similar phenomenon.

82. With respect to participial adjunct clauses, a similar effect is not observed, as evidenced by the ill-formedness of (i). (Although the speakers who allowed control by the underlying subject in (169a) also accepted this sentence, those judgments are not counted in.)

(i) *Some countries were insulted by John$_i$, [PRO$_i$ cursing himself].

83. Another piece of evidence to suggest that control into temporal adjunct clauses is not true OC is that PRO in this construction, even if taken as the antecedent of a reciprocal, can marginally take split controllers (see Hornstein (2000) for a different report on this issue). Compare (i) with the previous example (59a), which contains a typical OC verb *persuade*.

(i) ?John$_i$ was reconciled with Mary$_j$ [after PRO$_{i+j}$ being at odds with each other$_{i+j}$ for a while].

(59)a. *John$_j$ persuaded Mary$_i$ [PRO$_{i+j}$ to meet each other$_{i+j}$ at six].

With respect to participial adjunct clauses, however, this option seems to be unavailable, as illustrated in (ii).

(ii) *John$_i$ kissed Mary$_j$, [PRO$_{i+j}$ holding each other$_{i+j}$ tight].

It is true that Bresnan (1982) presents example (iii), which suggests otherwise, but it is probably grammatical because the adjunct clause is left-adjoined (recall that left-adjoined

adjunct clauses are less restricted with respect to the controller choice). Thus, if this clause is attached to the right of the matrix clause, then the sentence is quite awkward, as shown in (iiib).

> (iii)a. Mary lost track of John because, [PRO$_{i+j}$ having been angry at each
> other$_{i+j}$], he$_i$ had gone one way and she$_j$ the other.
> (Bresnan 1982 (66b) p.347)
> b. ??Mary lost track of John because, he$_i$ had gone one way and she$_j$ the
> other, [PRO$_{i+j}$ having been angry at each other$_{i+j}$].

84. Here, the salience cannot be reduced to the lowest by using an inanimate, because desiderative predicates require an animate subject.

85. As for control into interrogative infinitival complements led by *whether*, Martin (1996) exceptionally treats it as OC.

86. As noted by Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005), *oneself* cannot occur in interrogative infinitival complements led by *whether*. Consider example (i).

> (i) Harry asked Sally whether to take care of *oneself.
> (Jackendoff & Culicover 2003 (20b) p.524)

87. Just as in the case of desiderative predicates, the salience here cannot be reduced to the lowest by using an inanimate, because predicates that select for an interrogative infinitive require an animate subject.

Chapter 4 Some Residual Issues in Control Theory

4.1 Introduction

In chapter 3, I dealt with PRO and related issues.   Among other things, I discussed how PRO is interpreted in control constructions, paying particular attention to the distinction between obligatory control (OC) and non-obligatory control (NOC).   But of course, that is not all there is to say about control.   In fact, there remain a number of other issues that we must resolve in order to fully understand how control works.   In this chapter I would like to give some consideration to a few of them.   However, one note is in order.   Because the space devoted to each problem is rather small, my solutions presented here are admittedly sketchy.   Still, It is intended that they will lay the groundwork for future research.

The rest of the chapter is organized as follows.   In section 4.2, I will shed some new light on how the controller is selected with OC double complement verbs, where the local domain of PRO contains more than one DP argument.   For instance, consider the following pair of examples.

(1)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].
    b. Peter$_i$ asked Amy$_j$ [PRO$_{*i/j}$ to leave].
       (Also appeared as (11a) & (11b) ch.1 p.6)

In the above sentences, both the matrix subjects and the matrix indirect objects are within the local domain of PRO, called the A-Chain Projection Domain (ACPD) (see section 3.4.1 for the definition of ACPD with respect to PRO).   Nevertheless, with *promise*, it is only the subject *Peter* that can control PRO, as indicated in (1a), whereas with *ask*, it is natural to take the object *Amy* as the controller, as can be seen in (1b).[1]   In section 4.2.1, I will first set up the basic issue.   In section 4.2.2, I will then summarize some of the existing approaches to this phenomenon.   In section 4.2.3, I will offer my own account.   Specifically, I will argue that the above difference comes from two distinct semantic features that the verbs, *promise* and *ask*, each inherently carry.   Lastly, in section 4.2.4, I will take up a phenomenon in Japanese called semi-control, which further supports my analysis in an interesting way.

In section 4.3, I will investigate partial control.   Partial control is a phenomenon in which the value of a controller is a proper subset of that of PRO.   The effect is typically induced by a control predicate that requires a "plural" subject combined with a

singular controller, as in the following example.

(2) The chair$_i$ hated [PRO$_{i+j}$ gathering without a concrete agenda].
   (Landau 2000 (52a) p.45)

In (2) the referent of PRO has to be a plural of sorts because the control predicate is a collective one *gather*.   However, the controller is *the chair*, which does not exhaust the value of PRO.   I will argue that this effect arises as a result of PRO being lexically prespecified as plural in semantic number.

   In section 4.4, I will explore the puzzle of why, among one-place predicates that take an infinitive as an argument, some exhibit raising while others arbitrary control. For example, while *seem* is a raising predicate and not a control predicate, as indicated in (3), the opposite is true of *(be) possible*, as can be seen in (4).

(3)a. John$_i$ seems [t$_i$ to underestimate costs].
   b. *When the numbers are so big, it seems [PRO$_{arb}$ to underestimate costs].
      (Uchiumi 2005b (1a) & (1b) p.1)
(4)a. *John$_i$ is possible [t$_i$ to underestimate costs].
   b. When the numbers are so big, it is possible [PRO$_{arb}$ to underestimate costs].
      (Uchiumi 2005b (2a) & (2b) p.1)

In section 4.4.1, a cursory sketch of my approach will be provided.   Specifically, I will illustrate that the different behaviors of these two predicates can be attributed to the underlying structures to which each predicate is assigned.   In section 4.4.2, I will discuss psychological predicates and the adjective *likely*, which can potentially be taken as counter-evidence to my analysis, and show that they both merely constitute apparent counterexamples.

   Finally, the main points of this chapter will be repeated in the summary given in section 4.5.

4.2 The Choice of Controller With OC Double Complement Verbs and Control Shift

4.2.1 The Issue of the Choice of Controller With OC Double Complement Verbs

   In section 3.4, I argued that OC is control in which PRO has a potential

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antecedent link in its local domain, called the ACPD, whereby an A-chain is formed between the two elements.   If this is so, given that more than one nominal argument is present in the ACPD of PRO, then all of them should be potential controllers, leading to ambiguity.   However, although such ambiguous cases do exist, most OC verbs designate a particular argument as the controller.   For example, as briefly mentioned in section 4.1, sentence (1a) shows that with *promise*, PRO must take the matrix subject as its controller, and control by the matrix object is strictly ungrammatical.   On the other hand, (1b) demonstrates that with *ask*, it is usually the indirect object that controls PRO, and the interpretation where the subject is the controller is more difficult at least.

(1)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].
    b. Peter$_i$ asked Amy$_j$ [PRO$_{*i/j}$ to leave].

A further complication is that the controller choice strays from the usual pattern under certain circumstances.   Consider the examples below.

(5)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/j}$ to be allowed to leave].
    b. Peter$_i$ asked Amy$_j$ [PRO$_{i/*j}$ to be allowed to leave].
      (Also appeared as (18b) ch.3 p.129 & (85b) ch.3 p.157)

In (5a), unlike in (1a), the sentence with *promise* is ambiguous between subject control and object control.   Also, in (5b), even though the control verb is *ask*, PRO is controlled by the subject, which is different from the pattern in (1b).

In this section I will investigate the choice of controller with OC double complement verbs like those introduced above.   I will argue that though the requirement that the controller of OC PRO must be within its ACPD is syntactic, which element is actually selected as the controller among the potential antecedents is determined by semantic/pragmatic restrictions imposed by the matrix verb.   It is often considered that the phenomenon of control shift as in (5) is an obstacle to the study of the controller choice with OC double complement verbs.   However, I believe that it is rather an important clue to unraveling the issue of the choice of controller in general.

4.2.2 The Existing Approaches to the Choice of Controller
With OC Double Complement Verbs

Regarding the issue of the controller choice with OC double complement verbs, two kinds of analyses have been presented in the literature. In the first kind, called the syntactic approach, the choice of controller with OC double complement verbs is based on syntax (e.g. Larson 1991, Martin 1996, Hornstein 1999 & 2003). In particular, the most influential within this approach is the Minimal Distance Principle (MDP) of Rosenbaum (1967), which argues that the DP closest in the tree to the control clause is chosen as the controller. However, the obvious problem with the MDP is the existence of OC double complement verbs that exhibit subject control such as *promise* (vid. (1a)). Larson (1991) maintains that *promise* abides by the MDP, assigning it a special underlying structure. Martin (1996) also claims that the MDP is exceptionless, but he exempts *promise* from its application, arguing that this construction is actually NOC. Hornstein (1999/2000) takes the position that the MDP is a markedness condition, which is potentially violable, and treats *promise* as a marked OC verb.

In the second kind of analysis, which I call the semantic/pragmatic approach, the choice of controller with OC double complement verbs is determined by semantic/pragmatic factors (e.g. Jackendoff 1972, Manzini 1983, Farkas 1988, Landau 2000). Jackendoff (1972), for example, argues that the controller is selected on the basis of thematic role. In Farkas (1988), on the other hand, the notion of "responsibility" is identified as the determining factor for controller choice. Finally, Manzini (1983) and Landau (2000) suspect that some semantic/pragmatic factors are crucial for controller choice, but they do not pin down what exactly those factors are.

While each analysis has its own advantages, none of the approaches presented so far are free from problems. In the following subsection I will offer my own account of the choice of controller with OC double complement verbs, which is a variant of the semantic/pragmatic approach.

4.2.3 The Account

In this subsection I will illustrate my own account of the choice of controller with OC double complement verbs. My basic claim is that the controller is selected primarily based on the semantics/pragmatics of the control verb. More specifically, I will argue that there are three primitive semantic features: INTEND, APPEAL and ALLOW, one of which each OC double complement verb carries, and that these features impose semantic/pragmatic restrictions on the controller choice.

Furthermore, it will be maintained that when the controller is shifted, the notion

of the controllability of a predicate is playing an important role.   Namely, when a control verb that requires a controllable predicate takes a noncontrollable predicate as its complement, a sort of rescue operation is invoked to make the sentence acceptable (see Sag & Pollard (1991), Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005) for similar ideas).   The analysis presented here is by no means complete.   In particular, I will be leaving out a discussion of constructions where the propositional complement is expressed by a preposition plus a gerund as in *Peter persuaded Amy into leaving*.   Nevertheless, I believe that this study can at least set forth the basic direction one should go in future research towards the full answer to the issue.   In what follows, I will begin by clarifying what is exactly meant by the controllability of a predicate.

4.2.3.1 The Notion of Controllability of a Predicate

Every predicate is either controllable[2] or noncontrollable with respect to the subject.   For example, while the predicate *kick the ball* is clearly controllable, *be tall* is usually considered to be noncontrollable.   This property can be easily tested using imperative constructions.   Observe the sentences below.

(6)a. Kick the ball!
  b. ??*Be tall!   (Sag & Pollard 1991 (62d) p.83)

Since one can only order someone to perform an action that she herself can control, it is only controllable predicates that can be used as imperatives.   In (6a) *kick the ball* can naturally be used as an imperative.   Thus, this predicate is regarded as controllable.   On the other hand, in (6b) *be tall* is infelicitous as an imperative.   Therefore, this predicate is considered to be noncontrollable.
  Consider next the following pair of examples.

(7)a. ??Be reelected!
  b. Get reelected!

Sentence (7a) is a regular passive, whose verbal part consists of the auxiliary *be* and the past participle of a verb.   Example (7b) is what is usually called a *get*-passive, where the lexical verb *get* is used instead of *be*.   Interestingly, only the latter is fully acceptable. Thus, according to the imperative diagnostic, while regular passives are noncontrollable,

get-passives are controllable.[3]

However, one complication is that predicates like *be tall* and *be reelected* can be coerced into controllable ones (see Sag & Pollard (1991) for a similar claim). This is especially evident when a *by ...ing*-phrase is added, as illustrated in (8).

(8)a. Be tall by wearing platform shoes. (Lora Bolton pc)
   b. Be reelected by bribing the constituency!

Therefore, (6b) and (7a) can also be acceptable to the extent that one can imagine an unexpressed appropriate *by ...ing*-phrase for each sentence. Likewise, although *be allowed to ...* is a noncontrollable predicate out of context, as can be seen in (9a), it can be coerced into a controllable one, as shown in (9b).

(9)a. ??Be allowed to leave!
   b. Be allowed to leave by bribing the guard!

In the next subsubsection I will elucidate the choice of controller with OC double complement verbs and control shift by drawing upon this notion of controllability of a predicate.

4.2.3.2 The Five Types of OC Double Complement Verbs

In this subsubsection I will argue that OC double complement verbs can be broadly classified into five types. Although it is possible that the list may be expanded in the future, I tentatively believe that the enumeration is exhaustive at this point. Let us then look into the characteristics of each class of verbs.

I. The *Promise*-Type

The first type of OC double complement verb is what I call the *promise*-type. Consider the previous example (1a), reintroduced below.

(1)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].

As already mentioned a few times, *promise* exhibits subject control under normal circumstances. Since sentence (1a) can roughly be paraphrased as in (10a) and not as in (10b), I assume that there is no hidden modal in the complement clause of control *promise*.[4]

        (10)a. Peter$_i$ promised Amy that he$_i$ would leave.
           b. Peter$_i$ promised Amy that he$_i$ *should/could leave.

I characterize this fact as, 'The *promise*-type verbs select for a modal-less infinitive (viz. infinitive without any null modal)'.
        Turning to its semantic aspect, control *promise* roughly means 'make a pledge'. Hence, sentence (1a) entails[5] (11).

        (11) Peter intended to leave.

Therefore, the meaning of control *promise* is decomposable into 'intend' plus some other elements. I postulate that the former is semantically primitive, which I represent as semantic feature INTEND. This feature impose two conditions on the verb that carries it. The first condition is that either the complement subject must be identical with the matrix subject, or its referent must be potentially influenced by the referent of the matrix subject (or at least so the referent of the matrix subject believes) (see Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005) on a related issue).[6] Consider the following set of examples.

        (12)a. The five-year-old girl$_i$ intended [PRO$_i$ to do the dishes this evening].
           b. The five-year-old girl intended [for her brother to do the dishes this
              evening].
           c. ??The five-year-old girl intended [for Saddam Hussein to do the dishes
              this evening].

Thus, (12a) is well-formed, because the complement subject is PRO, which is identical with the matrix subject. Sentence (12b) is also acceptable, since it is easy to imagine that the five-year-old girl thinks that she has some influencing power over her brother. By contrast, (12c) is ruled out, because it is inconceivable that the five-year-old girl believes that she can somehow control Saddam Hussein.
        In the case of control *promise*, the complement subject is PRO. This element is

syntactically required to find a controller within its local domain, called the ACPD (see section 3.4 for discussion). In the present case, the ACPD contains two DP arguments: the matrix subject and the matrix object. However, due to the first condition of the feature INTEND, the subject is automatically selected as the controller.[7]

The second condition of the feature INTEND requires the complement VP to be controllable. This effect can be illustrated by the contrast in the pair of examples below.

(13)a. Peter intended to kick the ball.
    b. ??Peter intended to be tall.

That is, (13a) is fully acceptable, because the embedded VP *kick the ball* is a controllable predicate. By contrast, (13b) is awkward, since *be tall* is noncontrollable.

However, with respect to control *promise*, it is not necessarily the case that when combined with a noncontrollable predicate, the sentence immediately becomes unacceptable. Observe, for instance, example (5a), repeated below.

(5)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/j}$ to be allowed to leave].

As mentioned in section 4.2.3.1, predicates that start with *be allowed to* are noncontrollable under normal circumstances. Nevertheless, the above sentence is grammatical. Besides, it is ambiguous between subject control and object control.[8] I believe that this is the result of the application of two rescue strategies to save the sentence.

As discussed in section 4.2.3.1, noncontrollable predicates can be coerced into controllable ones. Hence, *be allowed to leave* in (5a) can be coercively reinterpreted as a controllable predicate. When this operation is exercised, subject control is obtained, because the predicate here is, after all, controllable.

Alternatively, another rescue operation can be invoked. Namely, instead of coercing the complement clause, one can delete the semantic feature INTEND from control *promise*. As a result, the meaning of the verb is shifted to something along the lines of 'to give ... one's assurance that ...'.[9] Now that the feature INTEND is no longer there, the complement VP does not have to be controllable. At the same time, the first condition of this feature is no longer applicable either. Thus, in this case, PRO can take either the subject or the object as its controller. Therefore, sentence (5a) is, in fact, three-way ambiguous, as indicated in (14).

(14)a. Peter$_i$ made a pledge to Amy that he$_i$ would manage to be allowed to
        leave.

   b. Peter$_i$ gave Amy his assurance that he$_i$ would be allowed to leave.

   c. Peter gave Amy$_i$ his assurance that he$_i$ would be allowed to leave.

Indeed, in (5a), even when the subject is understood as the controller, the sentence seems to still be ambiguous.   That is, what Peter told Amy might have been that he would never fail to actively do something in order to be allowed to leave or that he assured that he would never fail to be allowed to leave.

Furthermore, consider the following contrast.

(15)a. Bill$_i$ promised Hillary$_j$ [PRO$_{i/j}$ to be reelected].

   b. Bill$_i$ promised Hillary$_j$ [PRO$_{i/??j}$ to get reelected].

As illustrated in (15a), control *promise* with a regular passive complement can be interpreted either as subject control or as object control.   On the other hand, as shown in (15b), the same verb with a *get*-passive complement is strongly inclined towards the former.   Recall that it is only regular passives that are inherently noncontrollable.   Thus, (15a) is three-way ambiguous in the same way as (5a).   By contrast, in (15b) subject control is forced, just as in (1a).[10]

Therefore, *promise* is primarily a subject control verb but can be ambiguous with either type of control when combined with a noncontrollable predicate.[11]   As far as I know, *promise* is the only verb that works in this way.   Presumably such a rarity of this type of verb explains why the acquisition of control *promise* is somewhat late, compared with that of other OC double complement verbs like *tell* (see Chomsky (1969)).

II. The *Vow*-Type

The second type of OC double complement verb is the *vow*-type, which also includes *pledge*, *swear*, etc. besides *vow* itself.   The semantics of the members of this class are almost identical with that of control *promise*.   Consider the actual example of *vow* in (16) and its paraphrase in (17), where the complement clause is replaced by its finite counterpart.

(16) Peter$_i$ vowed to Amy$_j$ [PRO$_{i/*j}$ to leave].

(17) Peter$_i$ vowed to Amy that he$_i$ would leave.

As evidenced by the paraphrase, the complement clause of control *vow*, like that of control *promise*, does not contain a null modal. Thus, this type of verb selects for a modal-less infinitive as the *promise*-class does. Furthermore, since (16) also entails (11), repeated below, I assume that *vow* also has the feature INTEND.

(11) Peter intended to leave.

The difference between the *vow*-type and the *promise*-type is that the object control reading is very difficult to obtain with the former even when it is combined with a noncontrollable predicate, as illustrated in (18).

(18) Peter$_i$ vowed to Amy$_j$ [PRO$_{i/??j}$ to be allowed to leave].

I believe that this is because the feature INTEND cannot easily delete from the *vow*-type verbs. As a result, sentence (18) lacks the paraphrases that correspond to (14b) and (14c). For ease of reference, paraphrases (14a)-(14c) are reproduced below.

(14)a. Peter$_i$ made a pledge to Amy that he$_i$ would manage to be allowed to leave.
  b. Peter$_i$ gave Amy his assurance that he$_i$ would be allowed to leave.
  c. Peter gave Amy$_i$ his assurance that he$_i$ would be allowed to leave.

Since (18) is well-formed as subject control, it appears that the option of coercing the noncontrollable VP into a controllable one is still available.

As briefly touched on in endnote 8, I found a few speakers who never allowed object control with *promise* under any circumstances. I suspect that for such speakers, *promise* is also categorized under this class.

III. The *Ask*-Type

Verbs like *ask*, beg and *persuade* belong to the third type. Observe the previous example of *ask* in (1b).

(1)b. Peter$_i$ asked Amy$_j$ [PRO$_{*i/j}$ to leave].

The above sentence can be paraphrased with a finite complement as in (19).

(19) Peter asked of Amy$_i$ that she$_i$ should leave.[12]

Unlike the previous two types, the paraphrase of this class contains the deontic modal *should* in the complement clause.[13] This fact is characterized as, 'The *ask*-type verbs select for a null *should* infinitive rather than a modal-less infinitive.

Furthermore, based on the fact that (1b) entails (20), I assume that this type of verb can be decomposed into 'appeal' plus some other elements.

(20) Peter appealed to Amy to leave.

I assume that the former portion of the meaning is primitive, which I represent as the semantic feature APPEAL. Verbs that carry this feature select either for a complement clause with the modal *should* or for one with the modal *can/may*. When the feature APPEAL co-occurs with *should*, the following condition is imposed on the complement subject. Namely, it must be exactly identical with the matrix object, as in (21a). Or alternatively, its referent must be what the referent of the matrix object has some control over (or at least so the referent of the matrix subject believes), as in (21b). Otherwise the sentence is ruled out, as shown in (21c).

(21)a. The president appealed to the commander$_i$ that he$_i$ should charge.[14]
    b. The president appealed to the commander that his soldiers should charge.
    c. *The president appealed to the commander that the enemy should charge.

On the other hand, when the feature APPEAL co-occurs with the modal *can/may*, the complement subject must be identical with the matrix subject, or its referent must be what the referent of the matrix subject has some control over (or at least so the referent of the matrix subject believes). Consider the sentences in (22). Here, readers should focus on the meaning of *appeal* relevant to its control use, namely 'to make an earnest request', and ignore other meanings, such as 'to try to convince'.

(22)a. The commander$_i$ appealed to the president that he$_i$ could/might charge.
    b. The commander appealed to the president that his soldiers could/might

charge.

    c. *The commander appealed to the president that the enemy could/might

       charge.

With respect to (1b), the complement subject is PRO, which is syntactically required to take either the matrix subject or the matrix object as its controller. Since a null *should* infinitive is selected for in this case, the condition imposed by the feature APPEAL on the complement subject is targeted at its relation with the matrix object. Therefore, the object is chosen as the controller.[15]

Another important point to notice is that deontic *should* selects for a controllable VP. Observe the examples below.

(23)a. Bill should kick the ball.   (in the deontic sense)

    b. ??Bill should be tall.   (in the deontic sense)

As a result, it is expected that the complement clauses of the *ask*-type verbs, which contain deontic *should*, are also required to take a controllable VP. However, just as in the case of control *promise*, even if control *ask* is combined with a noncontrollable predicate, the sentence is still well-formed, though the controller is shifted to the subject.[16] Observe the previous example (5b).

(5)b. Peter$_i$ asked Amy$_j$ [PRO$_{i/*j}$ to be allowed to leave].

Thus, some sort of rescue operation must be at work here. It seems that coercion of the embedded predicate into a controllable one is not available, because normal object control is not possible with (5b). Also, INTEND deletion is not applicable, since this type of verb does not carry the feature INTEND in the first place. Deleting the feature APPEAL does not help either, because the controllability requirement is not connected with this feature but rather with the modal *should* in the complement clause.

As an alternative rescue operation, I propose that a null modal can be deleted in the complement clause when another modal-like element such as *be allowed to* is present. That is, (5b) inherently has the representation in (24a), which can be converted into the one in (24b).

(24)a. Peter asked Amy [PRO φ_{should} to be allowed to leave]

    b. Peter asked Amy [PRO   to be allowed to leave]

Representation (24b) induces subject control, because *ask*, which carries the feature APPEAL, co-occurs with *be allowed to*, which is equivalent to the modal *may*. In other words, (5b) is well-formed in the same way as (25).

(25) (?)Peter$_i$ asked of Amy that he$_i$ would be allowed to leave.[16]

Finally, one prediction can be made regarding this type of verb. As noted above, when a verb that carries the feature APPEAL takes a control clause with the modal *should*, the complement subject must either: (i) be identical with the matrix object, or (ii) refer to what the referent of the matrix object has some influencing power over as far as the referent of the matrix subject believes. However, if someone who fits the description in (ii) happens to be the referent of the matrix subject, then subject control should be obtained without making the complement VP noncontrollable. I suspect that sentence (26) from Farkas (1988) may be a case in point.

(26) The pupil$_i$ asked the teacher [PRO$_i$ to leave early].[18]
      (Farkas 1988 (30) p.47)

Thus, with the understanding that the pupil believes that he is under the control of the teacher, the subject control reading of PRO is possible in the above example, at least for some speakers.

IV. The *Order*-Type

Next, the fourth type consists of verbs such as *order*, *authorize* and *force*. Consider the examples in (27).

(27)a. Peter$_i$ ordered Amy$_j$ [PRO$_{*i/j}$ to leave].
      b. Peter$_i$ authorized Amy$_j$ [PRO$_{*i/j}$ to leave].

This class of verbs is similar to the third type in that they also select for an infinitive with a null modal. Observe the paraphrases of the above sentences, given in (28).

(28)a. Peter ordered that Amy should leave.[19]

b. Peter authorized Amy$_i$ that she$_i$ could/might leave.[20]

While the infinitive of (27a) contains null *should*, that of (27b) has null *can/may*. These two cases can technically be treated separately. But since their behaviors are very alike in other respects, I will put them together under one type.

Note that just like the *ask*-type, (27a) entails (20), repeated below.

(20) Peter appealed to Amy to leave.

Thus, *order* also carries the semantic feature APPEAL. Since in (27a) this feature co-occur with the modal *should*, and the complement subject is PRO, object control is forced.[21]

As for (27b), it entails (29).

(29) Peter allowed Amy to leave.

Thus, the verb *authorize* can be decomposable into 'allow' plus some other elements. I assume that the former is semantically primitive, which I represent as the semantic feature ALLOW. This feature imposes a condition similar to that of the feature APPEAL on the complement subject. Namely, when it co-occurs with the modal *can/may*, the complement subject must be identical with the matrix object, or its referent must be what the referent of the matrix object has some control over (or at least so the referent of the matrix subject believes). Consider the examples in (30).

(30)a. The president allowed the commander that he could/might charge.[22]
    b. The president allowed the commander that his soldiers could/might charge.
    c. *The president allowed the commander that the enemy could/might charge.

Therefore, in (27b), just as in the case of *order*, object control is forced.

As well as deontic *should*, ability *can*, and permission *may*, which appear in the complement clause of *authorize*, select for a controllable predicate. Observe the examples in (31).

(31)a. Amy can/may kick the ball. (in the ability/permission sense)

b. ??Amy can/may be tall. (in the ability/permission sense)

Since *order* selects for a *should* infinitive, and *authorize* for a *can/may* infinitive, the complement VPs of these verbs are required to be controllable. However, unlike the *ask*-class, if they are combined with a noncontrollable predicate, then the sentences are simply unacceptable, as indicated in (32).

(32)a. *Peter$_i$ ordered Amy [PRO$_i$ to be allowed to leave].
    b. *Peter$_i$ authorized Amy [PRO$_i$ to be allowed to leave].

This is because the representations of the sentences in (32) with the application of modal deletion are semantically ill-formed. That is, in (32a) Peter is both an orderer and an allowee simultaneously, and in (32b) he is both an authorizer and an allowee simultaneously, which is a contradiction. These semantic anomalies can be confirmed in the following sentences with finite complements. With *order*, since it does not take a Goal argument and a finite complement simultaneously in English, a French example is provided in (33b), which should be compared to (33a) with *demander* 'ask'. With *authorize*, an English example is given in (34).

(33)a. Pierre$_i$ a   demandé à Aimée qu'il$_i$ puisse   partir.[23]
       Peter$_i$ has   asked   to Mary that.he$_i$ may.(subj)   leave
       'Peter$_i$ asked Amy that he$_i$ might leave.'
    b. *Pierre$_i$ a   ordonné   à Aimée qu'il$_i$ puisse   partir.
       Peter$_i$ has   ordered   to Amy that.he$_i$ may.(subj)   leave
       'Peter$_i$ ordered Amy that he$_i$ might leave.'
(34) *Peter$_i$ authorized Amy that he$_i$ would be allowed to leave.

Therefore, the examples in (32) are excluded on the same grounds as well.

V. The *Signal*-Type

Finally, there is a class of verbs such as *signal*, *assure* and *threaten*, which can inherently exhibit both subject control and object control.[24] Consider the following examples.

(35)a. Col. Jones$_i$ signaled (to) the pilot$_j$ [PRO$_{i/j}$ to land].[25]
    (Sag & Pollard 1991 (110a) p.97)
  b. Peter$_i$ assured Amy$_j$ [PRO$_{i/j}$ to leave].

In (35a) PRO can be understood as the matrix subject *Col. Jones* or the matrix object *the pilot*. A similar ambiguity can be observed with *assure* in (35b).[26]

Let us consider the paraphrases of the above sentences that correspond to each interpretation, which are provided in (36) and (37).

(36)a. Col. Jones$_i$ signaled (to) the pilot that he$_i$ would land.
    (subject control interpretation)
  b. Col. Jones signaled (to) the pilot$_i$ that he$_i$ should land.
    (object control interpretation)
(37)a. Peter$_i$ assured Amy that he$_i$ would leave.   (subject control interpretation)
  b. Peter$_i$ assured Amy$_i$ that she$_i$ could/might leave.
    (object control interpretation)

Thus, while a modal occurs in the paraphrases that correspond to the object control reading, such an element is absent in the paraphrases that correspond to the subject control reading.

Next, when (35a) and (35b) are interpreted as subject control, they have the entailments in (38a) and (39a), respectively, with *intend*.   On the other hand, when these sentences are construed as object control, they have the entailments in (39a) with *appeal* and (39b) with *allow*.

(38)a. Col. Jones intended to land.
  b. Col. Jones appealed to the pilot to land.
(39)a. Peter intended to leave.
  b. Peter allowed Amy to leave.

Therefore, I assume that the control ambiguities in (35) can ultimately be attributed to the semantic features that the relevant verbs contain.   Namely, if the verb carries the feature INTEND, then it exhibits subject control taking a modal-less infinitive.   By contrast, if the verb carries the feature APPEAL or ALLOW, then it exhibits object control, taking an infinitive with a null modal.

Finally, let us investigate whether any of the rescue operations is available to this

class of verbs.　Consider the examples below, where noncontrollable predicates are used as the complement VPs.

(40)a. Col. Jones$_i$ signaled (to) the pilot$_j$ [PRO$_{i/j}$ to be allowed to land].
b. Peter$_i$ assured Amy$_j$ [PRO$_{i/j}$ to be allowed to leave].

These sentences are acceptable to my informants as either type of control.　It seems that coercion of the complement predicate into a controllable one is available, which is more or less distinct in meaning.　It is likely that either INTEND deletion or modal deletion is also available, but which one is actually sanctioned or whether both are permissible is not clear.　The two representations created as a result of the application of these operations are so similar that they cannot be easily distinguished.

Summary

To summarize, the choice of controller with OC double complement verbs is primarily determined by the semantics/pragmatics of the matrix verb.　Broadly classified, there are five types of OC double complement verbs.　The basic properties of these

(41) The Five Types of OC Double Complement Verbs:

Verb Type	Control Property	Feature	Inf Type	Rescue Operation (Resulting Control)
promise-type	subj	INTEND	mod-less	coercion (subj)/INTEND del (subj/obj)
vow-type	subj	INTEND	mod-less	coercion (subj)
ask-type	obj	APPEAL	*should*	mod del (subj)
order-type a. order b. authorize	 obj obj	 APPEAL ALLOW	 *should* *can/may*	 N/A N/A
signal-type a. signal b. assure	 subj obj subj obj	 INTEND APPEAL INTEND ALLOW	 mod-less *should* mod-less can/may	 coercion (subj)/?INTEND del (subj/obj) ?mod del (subj) coercion (subj)/?INTEND del (subj/obj) ?mod del (obj)

types of verbs are outlined in table (41).   Control shift is a result of the application of rescue operations such as coercion of the complement predicate into a controllable one, INTEND deletion and modal deletion.   These operations are invoked when a noncontrollable predicate is used with a verb that requires a controllable complement.

4.2.4 The Semi-Control Phenomenon in Japanese

The main claim of this section is that the determination of the controller with OC double complement verbs is a two-step process.   That is, syntax first specifies the local domain of PRO (i.e. ACPD), and then semantics/pragmatics chooses the actual controller among potential controllers within this domain.   If this scenario is correct, then readers might have a question as follows.   Suppose that in a given language, the constructions equivalent to (1a) and (1b), repeated below, have pro instead of PRO in their complement clause.

(1)a. Peter$_i$ promised Amy$_j$ [PRO$_{i/*j}$ to leave].
   b. Peter$_i$ asked Amy$_j$ [PRO$_{*i/j}$ to leave].

The syntactic requirement of locality would then be lifted, and the null complement subject would be able to take a DP that is neither the matrix subject nor the matrix object as its antecedent, so long as it abides by the semantic/pragmatic restrictions imposed by the control verb.

I believe that such a hypothetical language does exist and that the language in question is Japanese.   The relevant phenomenon is what Uchibori (2000) names semi-control.   Compare the sentences in (42) with those in (43).

(42)a. Tantei$_i$-ga   irainin$_j$-ni   [e$_{i/*j}$ konsyuutyuu-ni ziken-o
        detective$_i$-Nom   client$_j$-Dat   [e$_{i/*j}$ this.week-in   case-Acc
        kaiketu-su-ru-to]   yakusoku-si-ta.
        solution-do-Nonperf-Comp]   promise-do-Perf
        'The detective$_i$ promised his client to solve the case during this week.'
     b. Koutyou$_i$-ga   sono seito$_j$-ni   [e$_{*i/j}$ sibaraku   ie-de
        principal$_i$-Nom   that pupil$_j$-Dat [e$_{*i/j}$ for.a.while home-at
        ryouyou-su-ru-you]   motome-ta.
        recuperation-do-Nonperf-Subj]   beg-Perf

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'The principal begged the pupil to stay at home for a while to recuperate.'
(Also appeared as (96a) & (96b) ch.3 p.160)

(43)a. Tantei$_i$-wa   [hisyo-ga   irainin-ni [e$_i$ konsyuutyuu-ni

detective$_i$-Top [secretary-Nom client-Dat [e$_i$ this.week-in

ziken-o   kaiketu-su-ru-to]   yakusoku-si-ta-to]

case-Acc   solution-do-Nonperf-Comp]   promise-do-Perf-Comp]

omot-te-i-ta.

think-Prt-Prog-Perf

'The detective$_i$ thought that his secretary had promised his client that he$_i$ would solve the case during this week.'

b. Koutyou-ga   sono seito$_i$-no   ryousin-ni [e$_i$ sibaraku

principal-Nom   that pupil$_i$-Gen parents-Dat [e$_i$ for.a.while

ie-de   ryouyou-su-ru-you]   motome-ta.

home-at recuperation-do-Nonperf-Subj] beg-Perf

'The principal begged the pupil's$_i$ parents that he$_i$ stay at home for a while to recuperate.'

(Also appeared as (97a) & (97b) ch.3 p.160)

In (42) the control relations are just like those in (1) in English. However, in (43) the control patterns are somewhat relaxed. The only requirement is that the referent of the matrix subject in the case of *yakusokusuru* 'promise' and that of the matrix object in the case of *motomeru* 'beg' should be in a position with influence over the referent of the complement subject. This is exactly the result that we expect if the syntactic requirement is absent, and only the semantic/pragmatic restrictions are at work.

Note that this is not a case of metonymy like (44a), which is not restricted to control contexts, as shown in (44b). Compare (43) with (45).

(44)a. Bush tried to attack Iraq.
'Bush tried to have his soldiers attack Iraq.'

b. Bush attacked Iraq.
'Bush had his soldiers attack Iraq.'

(45)a. Tantei-no   hisyo-ga   konsyuutyuu-ni ziken-o

detective-Gen secretary-Nom this.week-in   case-Acc

kaiketu-su-ru-darou.

solution-do-Nonperf-will

'The detective's secretary will solve the case during this week.'

          *'The secretary will have the detective solve the case during this week.'

     b. Sono seito-no   ryousin-ga   sibaraku   ie-de

       that   pupil-Gen   parents-Nom   for.a.while   home-at

       ryouyou-su-ru-darou.

       recuperation-do-Nonperf-will

       'The pupil's parents will stay at home for a while to recuperate.'

       *'The pupil's$_i$ parents will have him$_i$ stay at home for a while to recuperate

As can be seen in the above examples, the effect in question is absent in non-control environments and seems to be truly restricted to control contexts.

     Sakaguchi (1990) maintains that *yakusokusuru* 'promise' that takes a clausal complement with a null subject exhibits obligatory subject control. Likewise, Hasegawa (1984), Sakaguchi (1990) and Aoshima (2000, 2001a, 2001b & 2003) classify verbs that select for a control clause headed by the subjunctive particle *you* such as *motomeru* 'beg' under obligatory object control (or its equivalent). Yet based on the data on semi-control, I argue that the complement subjects of these constructions are pro rather than PRO, following Uchibori's line of analysis.[27]

     In fact, a similar effect can also be observed in English with overt pronouns in finite clauses. Consider the following pair of examples.

     (46)a. We begged Mary$_i$ that she$_{i/?j}$ (should) agree to an amicable settlement.

        b. We begged Mary's$_i$ attorney that she$_i$ (should) agree to an amicable

           settlement.

Since *beg* is another *ask*-type verb, its complement subject must be identical with the matrix object, or its referent must be potentially influenced by the referent of the matrix object (or at least so the referent of the matrix subject believes). Thus, sentence (46a) sounds most natural when the pronoun *she* refers to the matrix object. Also, (46b) is well-formed, because it is easy to imagine that Mary's attorney has some control over her (see also the translation of (43b) for the same effect). Therefore, this can be taken as evidence to suggest that the element in question in semi-control constructions, which has a similar effect, is also some pronominal of sorts.

4.3 Partial Control

The fact that certain control predicates allow partial control has received meager attention until recently in the literature. Yet reports of the phenomenon date back to Lawler (1972). In partial control, the value of PRO includes but is not exhausted by that of the controller. Landau (2000) is one of the first studies that extensively investigate this issue (see also Martin 1996, Hornstein 2003, Barrie & Pittman 2004, Bowers 2005, Culicover & Jackendoff 2005 among others on this subject). The ideas contained in this subsection have been greatly inspired by his work. Before anything else, to appreciate the phenomenon, compare (2), repeated below, and (47) on the one hand with the examples in (48) on the other.

(2) The chair$_i$ hated [PRO$_{i+j}$ gathering without a concrete agenda].
(47) Mary asked John if he$_i$ planned [PRO$_{i+j}$ to dance together at the party].
   (Landau 2000 (48b) p.44)
(48)a. *The chair$_i$ avoided [PRO$_{i+j}$ gathering without a concrete agenda].
   b. *Mary asked John if he$_i$ dared [PRO$_{i+j}$ to dance together at the party].
   (Landau 2000 (48a) p.44)

When the control predicate of an OC construction is collective (i.e. lexically collective as in the case of intransitive *gather* or containing the adverb *together*), a singular controller is typically rejected, as can be seen in (48). However, some classes of control predicates (desideratives, exercitives, factives, propositionals, etc.) permit a singular controller in the same context, as illustrated in (2) and (47). This phenomenon is referred to as partial control (henceforth PC).

The above observation may lead us to conclude that PRO is plural in PC contexts, even though its controller is singular. However, as pointed out by Landau, the following examples reveal that such a characterization is too sloppy.

(49)a. *The chair$_i$ hated [PRO$_{i+j}$ talking about themselves].[28]
   b. *Mary asked John if he$_i$ planned [PRO$_{i+j}$ to advertise themselves as the
      best dancers in town].
(50)a. *The chair$_i$ hated [PRO$_{i+j}$ each speaking freely without his permission].
   b. *Mary asked John if he$_i$ planned [PRO$_{i+j}$ to each enter the contest].

Thus, even in PC contexts, the control predicate cannot take a plural anaphor as an argument, as shown in (49), nor does it allow a floating quantifier, as can be seen in (50).

Landau, following Munn (1999), assumes that it is the notion of semantic and

syntactic plurality that is relevant to distinguish between collective predicates and predicates with a plural anaphor or a floating quantifier. That is, predicates of the first kind can be predicated of group names (*committee*, *government*, *team*, etc.), which are semantically plural but syntactically singular. By contrast, predicates of the second type must be licensed by a subject both semantically and syntactically plural. Observe the contrast between (51) on the one hand and (52) and (53) on the other.

(51)a. The committee gathered without a concrete agenda.

b. The team danced together at the party.

(52)a. *The committee/The members talked about themselves.[29, 30]

b. *The team/John and Mary advertised themselves as the best dancers in town.

(53)a. *The committee/The delegates each spoke freely without his permission.

b. *The team/Those participants each entered the contest.

Therefore, the correct conclusion appears to be that PC PRO functions as a semantically plural element just like a group name, even though the semantic number of its controller is singular.

The question then is how this conclusion should be embodied in the grammar. I take the simplest approach. That is, PRO is lexically prespecified as plural in semantic number, though it inherits a syntactic number from its controller.[31] This lexical prespecification of semantic number in PRO usually brings about no significant consequence. However, when this element appears in PC contexts, it plays a crucial role in mediating between the semantic singularity of the controller and the semantic plurality of the control predicate. This idea is supported by the following observation. As Landau properly comments, PC sentences, where the control predicates are collective, but the controllers are singular, usually require some contextual setting (linguistic or nonlinguistic) so that the extra participants in the reference of PRO can be supplied by something other than the controller itself. However, when PRO has no controller, namely in arbitrary control, it easily licenses without such facilitation a predicate that requires semantic plurality. Compare the PC sentences in (54) and arbitrary control sentence (55), for neither of which any special linguistic context has been set up.

(54)a. John$_i$ likes [PRO$_{i+j}$ working together].

b. Mary$_i$ wants [PRO$_{i+j}$ to gather before it gets dark].

(55) [PRO$_{arb}$ Doing everything together] is undesirable to the society.

Both constructions are well-formed, but the latter is recognizably better than the former. Note that arbitrary control does not work in the way that one can provide for PRO whatever controller one wants to, say 'people' in (55). This can be shown by the following example.

(56) ??Doing everything by themselves is undesirable to the society.

If PRO_{arb} could be supplied with whatever controller would be appropriate for the context, then (56) should be completely well-formed in the reading, say, "People's doing everything by themselves is undesirable to the society", which is not the case.[32] These observations strongly suggest that the default status of PRO's semantic number is plural.

One technical concern is whether the assumption that PRO is semantically plural does not create a contradiction when the reference of PRO is exhausted by that of a semantically singular controller. However, whether a given lexical item is semantically plural or not is a linguistic matter and does not necessarily have to reflect facts in the real world. For example, we know that the word *committee* is semantically plural, but consider the following situation. Suppose that a certain committee was comprised of five members, but four of them have resigned due to some scandal. We can still legitimately call this body a "committee", even though it has only one member.[33] Likewise, it would not be a problem if PRO, which is inherently plural in semantic number, is exhaustively controlled by a semantically singular controller.

The remaining question is why certain predicates never allow PC. That is, why do some control predicates require their complement subjects to be strictly identical with their matrix subjects? However, this requirement is independent of control, as pointed out by Wurmbrand (2002). Consider the examples below.

(57)a. $Peter_i$ attempted [PRO_i to rob the bank]/[PRO_{*i+j} to rob the bank together].
   b. *Peter attempted [(for) Sam to rob the bank].
(58)a. Peter attempted a robbery of the bank.
   b. *Peter attempted Sam's robbery of the bank.

As can be seen in (57a), *attempt* is not a verb that licenses PC. Furthermore, as indicated in (57b), this verb does not allow its complement subject to differ from its matrix subject. However, as illustrated in (58), this property is not confined to control contexts. Sentence (58a) is only grammatical in the reading in which the potential

robber is Peter.   What is more, overtly specifying a different subject as the possessor of the nominal does not help, as evidenced by the ungrammaticality of (58b).   Moreover, in (59), whatever the demonstrative *that* may refer to, it is always Peter who would end up doing it if the attempt is successful.

(59) Peter attempted that.

Chierchia (1983, 1984a & 1984b) proposes that such a requirement is due to an entailment of the verb, which can be captured by a meaning postulate.   To put it more simply, it does not make sense or no longer means what the verb should mean if the complement subject differs from the matrix subject with verbs like *attempt*.   Therefore, the prespecified semantic plurality of PRO never comes into play with non-PC predicates, such as *attempt*, *avoid* and *dare*, due to their meaning postulates.

Meanwhile, Landau (2000) argues that the possibility of PC depends on the presence of tense material in the complement T.   He shows that the complements of PC predicates are tensed, whereas the complements of predicates that do not allow PC are untensed.   First of all, observe that the verb *manage* does not allow PC, as shown in (60b), whereas *decide* does, as can be seen in (60a).

(60)a. John$_i$ decided [PRO$_{i+j}$ to meet at six].
    b. *John$_i$ managed [PRO$_{i+j}$ to meet at six].
       (Landau 2000 (43a) p.44 & (2a) p.27)

Consider then the following contrast.

(61)a. Yesterday, John decided [to solve the problem tomorrow].
    b. *Yesterday, John managed [to solve the problem tomorrow].
       (Landau 2000 (91a) p.57 & (95b) p.58: both slightly modified)

Assuming that a conflicting temporal modifier between the matrix clause and the embedded clause signals the presence of two distinct tense operators, it follows that in (61a) the complement of *decide*, which licenses PC, is specified for its own tense.   On the other hand, in (61b) the complement of *manage*, which does not allow PC, contains no independent tense and thus is interpreted as occurring simultaneously with the matrix event.

Landau argues that in OC, which includes PC, the matrix functional head enters

into Agree relations with the controller and PRO, respectively, mediating the coindexation between the two. However, he proposes, taking a hint from Pesetsky & Torrego (2001), that when the complement clause is tensed, T, which contains AGR, raises to C. In such a situation, it is not with PRO but with AGR in C that the functional head agrees. Although AGR has already entered into an Agree relation with PRO in situ, it remains [φsemantic plural], since Landau stipulates that PRO cannot value an unvalued functional head. In PC contexts, the nonfinite AGR, pied-piped to C, acquires [-semantic plural] from the singular controller via the matrix functional head. This value does not contradict [φsemantic plural], which AGR has even after it has agreed with semantically plural PRO, because Landau assumes that [φsemantic plural] is nondistinct from [-semantic plural]. Therefore, PC is possible with predicates whose complements are tensed like *decide*, *hate* and *plan* but impossible with those whose complements are untensed like *avoid*, *dare* and *manage* in his system.

In the present analysis, such a cumbersome mechanism is not needed to derive the PC effect. Moreover, the restriction that predicates that license PC cannot take a tensed complement can also be attributed to their meaning postulates. Namely, those predicates also entail the simultaneity of the event expressed by the matrix clause and that expressed by the complement clause. Interestingly, as reported by Karttunen (1971), predicates like *manage* even exclude spatial mismatches between the matrix clause and the embedded clause, as shown in (62).

(62)a. On the sofa, John decided [to sleep in the bed].
   b. *On the sofa, John managed [to sleep in the bed].
      (Karttunen (1971 (28b) & (28a) p.347)

Although Landau (2000: fn.24 ch.2) takes up this fact, he does not make it clear how it can fit into his theory. To me, this looks like a typical meaning-postulate effect. Suppose that it actually is, then it would not be surprising if the other two restrictions mentioned above, namely the subject match and the tense match, are also the results of the meaning postulates of the *attempt*-type predicates.[34]

However, Martin (1996) opposes treating the subject match requirement, observed with certain control predicates, as the result of a meaning postulate. He provides the following argument. First of all, as indicated in (63), *try* is a control predicate that does not allow PC.

(63) *Bill$_i$ tried [PRO$_{i+j}$ to come together].

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(Also appeared as (60) ch.3 p.145)

In some languages, a verb that means 'try' allows a lexical subject in its quasi-nonfinite complement clause. Citing Mohawk example (64a) from Baker (1996) and Modern Greek example (64b) from Joseph (1992), Martin points out that these two languages do permit the complement subject to be different than the matrix subject.

> (64)a. Sak$_i$ wa-ha-[a]te'nyẮtʌ-'   raúha$_{i/j}$ a-ha-nhotúko-'.
> Sak$_i$ Fact-ms.sg.su-tried-Punc   him$_{i/j}$ ᴏpt-ms.sg.su-open-Punc
> 'Sak$_i$ tried to have him$_{i/j}$ open it.'
> (Martin 1996 (2a) p.116, quoted from Baker 1996 (78a) p.486)
> b. Prospatho   [na erthi   o Ianis].[35]
> try.(1.sg)   [Subj come.(3.sg)   the John.(Nom)]
> 'I try to have John come.'
> (Martin 1996 (2b) p.116, quoted from Joseph 1992 (17b) p.208)

Furthermore, he continues that the complement subject of "try" in these languages need not be coindexed/coreferential with the matrix subject even when the former is a silent category. Consider the sentences in (65).

> (65)a. Λ-ha-[a]te'nyẮatʌ-'   ne   a-yako-yéshu-'.
> Fut-ms.sg.su-try-Punc   NE   Opt-fm.sg.ob-laugh-Punc
> 'He will try for her to laugh.'
> (Martin 1996 (3a) p.116, quoted from Baker 1996 (77a) p.486)
> b. Ego prospathisa   [na erthis   e].
> I   tried.(1.sg)   [Subj come.(2.sg)   e]
> 'I tried for you to come'
> (Martin 1996 (3b) p.116)

Indeed, if there exists a meaning postulate that requires the complement subject to be identical with the matrix subject, then the above subject mismatches are quite unexpected.

However, a question that I want to raise here, which is always an issue in crosslinguistic research, is whether we are really comparing apples with apples. That is, it may be true that the closest English translations of the verbs in question in Mohawk and Greek are 'try', Yet it has not been shown that they are actually identical with English

try in the relevant respects. In particular, I suspect that "try" in (64) and (65) may involve some sort of causativity, which is missing from the English counterpart.[36]   If the Mohawk and Greek verbs are not truly equivalent to English *try*, then it would be unreasonable to make any inference about the latter based on the former.   Therefore, I am still not convinced that the evidence that Martin provides is a strong argument against the meaning postulate approach to the subject match requirement.

4.4 Raising and Arbitrary Control[37]

There has been a long-standing problem with one-place predicates that take an infinitive as an argument.   Namely, some of them exhibit raising, while others arbitrary control.   For example, while *seem* is a raising predicate and not a control predicate, as indicated in (3), reintroduced below, the opposite is true of *(be) possible*, as can be seen in (4), repeated below.

(3) a. John$_i$ seems [t$_i$ to underestimate costs].
   b. *When the numbers are so big, it seems [PRO$_{arb}$ to underestimate costs].
      (Uchiumi 2005b (1a) & (1b) p.1)
(4) a. *John$_i$ is possible [t$_i$ to underestimate costs].
   b. When the numbers are so big, it is possible [PRO$_{arb}$ to underestimate costs].
      (Uchiumi 2005b (2a) & (2b) p.1)

In this section I will elucidate why these two predicates display different behaviors, arguing that this is at least in part syntactically determined.

4.4.1 The Basic Approach

My approach to the present issue consists of two key pieces.   In this subsection I will introduce these pieces and illustrate how the different behaviors of the two predicates can be explained with them.   First of all, I suspect that *seem* and *(be) possible* have different underlying structures.   More specifically, I believe that the infinitive of the former is underlyingly an internal argument, as shown in (66a), whereas for the latter, the infinitival argument is base-generated externally and subsequently extraposed sentence-finally, as depicted in (66b).

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(66)a. [IP e seems [IP John to underestimate costs]]

      b. [IP e is [SC [IP PRO$_{arb}$ to underestimate costs] possible]]

Actually, there are some pieces of evidence to support this line of analysis. First, as indicated in (67b), *(be) possible* licenses another variant with the infinitive in the subject position, which is called an intraposition construction. However, as can be seen in (67a), *seem* does not allow such a variant.

(67)a. *When the numbers are so big, [PRO$_{arb}$ to underestimate costs] seems.

      b. When the numbers are so big, [PRO$_{arb}$ to underestimate costs] is possible.

As demonstrated in (68) and (69), the fact remains the same even if the infinitival clauses are replaced by *that*-clauses.[38]

(68)a. It seems that John underestimates costs.

      b. *That John underestimates costs seems.

(69)a. It is possible that John underestimates costs.

      b. That John underestimates costs is possible.

This makes sense along the lines of the structures proposed in (66) in the following way. For *(be) possible*, the infinitive or the *that*-clause is inherently an external argument, as illustrated in (66b). Thus, it is (67b) and (69b) that more or less reflect the base position of the clausal element. In addition, this structure has an alternative derivation, namely (4b) and (69a), which involves extraposition and the use of an expletive. On the other hand, for *seem*, the infinitive/*that*-clause is a complement, as illustrated in (66a). Hence, although (3a) and (68a) are well-formed, in which the clausal element is in situ, the intraposed variants, (67a) and (68b), are ruled out.[39]

    Second, as generalized under the Condition on Extraction Domains (CED) of Huang (1982), a *wh*-phrase cannot be extracted from an extraposed element. For instance, observe the following pairs of examples of double complement constructions. (Sentences (70a) and (70b) are provided to show that the constructions themselves have no problem.)

(70)a. They told Bill that John underestimated costs.

b. What did they tell Bill that John underestimated?

(71)a. They mentioned to Bill that John underestimated costs.

b. *What did they mention to Bill that John underestimated?

As shown in (70b), *wh*-extraction is generally possible from an argument clause of a double complement construction. However, when the clause is extraposed, extraction is blocked, as can be seen in (71b).[40] Also, while the adjective *wrong* projects a clausal argument externally, as shown in (72a), extraction out of it is disallowed, as can be seen in (72b).

(72)a. That the ancients built this edifice is wrong.

b. *What is that the ancients built wrong?

Furthermore, extraposition does not enable extraction, as illustrated in (73).

(73)a. It is wrong that the ancients built this edifice.

b. *What is it wrong that the ancients built?

Thus, extraction is prohibited from an extraposed element under any circumstances.

This fact can be used as a diagnostic to examine whether the clausal arguments of the two predicates at issue are extraposed elements or not. Consider the sentences below.

(74)a. What does John seem to underestimate?

b. What is it possible to underestimate?

As can be seen in (74), extraction out of the embedded clause is licensed by both *seem* and *(be) possible*. However, as is well known, a nonfinite clause such as an infinitive and a gerund constitutes only a weak island. Observe the examples in (75).

(75)a. It is wrong to blame John for this accident.

b. Who is it wrong to blame for this accident?

If that is the case, then the data in (74) is not very informative to the present discussion.

One way of getting around this problem is to replace the infinitives by finite clauses, as in (76), assuming that the basic structures are not altered.

(76)a. What does it seem that John underestimates?

     b. *What is it possible that John underestimates?[41]

As can be seen from the above examples, *seem* and *(be) possible* behave differently in this context.   Namely, while extraction is possible with the former, it is blocked with the latter.   Alternatively, one could extract an adjunct, keeping the argument clause nonfinite. Consider the sentences in (77) and (78).   The matrix reading of *how*, if at all available, should be ignored.

(77)a. John seems to have fixed the car with a wrench.

     b. How does John seem to have fixed the car?   (Answer: With a wrench)

(78)a. It is possible to fix the car with a wrench.

     b. *How is it possible to fix the car?   (Answer: With a wrench)

Here again, a contrast can be observed between the behaviors of the two predicates. Therefore, it can be concluded that, as suggested at the outset of this subsection, the infinitive is an internal argument for *seem*, whereas it is underlyingly an external argument for *(be) possible*.

     The second piece of my analysis is the Chain Condition.   As is standard in the Principles and Parameters approach, I assume that every instance of A-movement results in the formation of an A-chain between the trace and its corresponding moved element. Thus, it follows that raising is licensed only where a licit A-chain can be formed.   In addition, as argued in section 3.4, I believe that OC is also a manifestation of an A-chain between PRO and its controller, which does not involve movement.   On the other hand, NOC, under which arbitrary control is subsumed, is viewed as a case in which PRO fails to form an A-chain due to lack of a potential controller in its local domain, called the ACPD.

     As discussed in section 2.5, an A-chain can and must be formed when an anaphoric element has some potential antecedent in its ACPD.   With respect to the two given argument positions of syntactic predicates, P_1 and P_2, P_2 is in the ACPD of P_1 in either of the two configurations, depicted in (79).

(79)a. $[_{SP} ... P_2 ... P_1 ...]$

     b. $[_{SF_2} ... P_2 ... [_{SP_1} ... (*P_3) ... P_1 ...]]$

     (where the head of SP_2 selects SP_1)

Namely, as in (79a), P_2 is an argument of the same syntactic predicate as P_1. Or as in (79b), P_2 is an argument of a syntactic predicate the head of which selects the syntactic predicate of P_1, and there is no A-position P_3 that is an argument of the latter predicate and c-commands P_1.

Now, bearing in mind how the Chain Condition works, consider the derivations of (3a) and (4b), schematized in (80a) and (80b), respectively.

(80)a. [$_{IP}$ John$_i$ seems [$_{IP}$ t$_i$ to underestimate costs]]

b. [$_{IP}$ it is [$_{SC}$ [IP PRO*arb* to underestimate costs] possible]]

In (80a) the trace is in the outermost A-position of a syntactic predicate, namely the embedded IP, and its antecedent *John* is in an argument position of the matrix IP, which is the next syntactic predicate up.[42] Thus, an A-chain is formed between the two elements, whereby raising is licensed. On the other hand, in (80b) the formation of an A-chain is impossible, since although PRO is at the A-edge of the embedded IP[43], no potential controller can be found in the next syntactic predicate up, the small clause. Hence, NOC is obtained in this structure.

Consider next the derivation of (3b), schematized in (81a), and that of (4a), schematized in (81b) and (81c).

(81)a. *[$_{IP}$ it seems [$_{IP}$ PRO to underestimate costs]]

b. *[$_{IP}$ John$_i$ is [$_{SC}$ [$_{IP}$ t$_i$ to underestimate costs] possible]]

c. *[$_{IP}$ John$_j$ is [$_{SC}$ [$_{SC}$ t$_i$ possible] [$_{IP}$ t$_j$ to underestimate costs]$_i$]]

In (81a) expletive *it* is in the ACPD of PRO. This configuration requires that the latter is controlled by the former, which does not make sense semantically. Thus, sentence (3b) is ill-formed. Furthermore, in (81b), since *John* and its trace are separated by two

syntactic predicate boundaries, a licit A-chain cannot be formed between them. Also, extraposing the infinitive before raising, as in (81c), would not help, because then the selection condition of the ACPD could not be satisfied (see section 2.5.1.2 for details). Hence, sentence (4a) is also ungrammatical.

However, one might be opposed to my version of the Chain Condition based on the following examples.[44]

(82)a. We tried to be clever.
   b. We wonder how to be clever.

As indicated in (82), *try* and *wonder* take an infinitival clause as their complement. Consider then the following examples, where the matrix verbs in the above sentences are passivized.

(83)a. *$John_i$ was tried [t_i to be clever].
   b. *$John_i$ is wondered [how t_i to be clever].

According to (79), *John* is in the ACPD of its trace in the sentences in (83), and therefore, an A-chain formation should be possible between the two elements. Nevertheless, as evidenced by the ungrammaticality of the above examples, the underlying embedded subject cannot raise to the matrix subject position, even though the ability to assign accusative Case to the embedded subject position is absorbed.

First, with respect to (83a), I believe that verbs like *try* have an entailment that requires the complement subject to be identical with the matrix subject. To put it more simply, for such verbs, it does not make sense or no longer means what the verb should mean if the two subjects differ from each other (see also section 4.3). However, in passives, when the demoted subject is implicit, it is usually interpreted as being distinct from the derived subject, as can be seen in (84).[45]

(84) John was blamed.
   interpretation: 'Someone else blamed John.'
   interpretation: *'John blamed himself.'

Thus, in (83a) as well, the implicit underlying matrix subject should be distinct from the underlying subordinate subject, which is raised to the matrix subject position. As a result, the sentence is ruled out on semantic grounds.[46]

In order to exclude (83b), it must be stipulated that *wonder* cannot take an infinitival clause with a lexical subject as its complement. However, this stipulation does not weaken the present analysis at all, because it is independent of the operation of raising. Observe the example below.

(85) *We wonder how (for[47]) John to be clever.

In (84) no movement of the infinitival subject is involved, but the sentence is nonetheless ill-formed. Therefore, the selectional stipulation is inevitably required whatever kind of approach one may take towards the passive example.

One might further challenge the proposed analysis, citing examples like the following.

(86)a. We would prefer John to be clever.
　　b. *John would be preferred to be clever.

As indicated in (86a), *prefer* can select for an infinitival clause with a lexical subject. However, as can be seen in (86b), subject raising is still impossible in this construction (Bresnan 1972).

As a clue to solving this problem, let us digress for a moment and consider another verb *believe*, which permits raising in the passive context.

(87)a. We believe John to be clever.
　　b. John is believed to be clever.

In (87a), as argued by Postal (1974), Johnson (1991), Koizumi (1993 & 1995), Runner (1995), Tanaka (1999) among others, the embedded subject raises to some matrix position, where the object of a simple transitive sentence would typically receive accusative Case, which is called raising-to-object (RTO) (see also Lasnik & Saito (1991) for a similar proposal). Consequently, if the accusative position is suppressed, then the infinitival subject further moves to the Spec of IP for Case, as illustrated in (87b). One basis for believing that *John* in (87a) is really in the matrix clause comes from a sentence like (88).

(88) ?/*We believe John sincerely to be clever.

In the above example, the adverb *sincerely*, which modifies the matrix verb, is marginally permitted to the right of the embedded subject, at least for some speakers.[48] This suggests that the latter is in the matrix domain.

Returning to *prefer*, I do not think that the infinitival subject of this verb raises to the matrix domain in the same way (see Lasnik & Saito (1991) for the same view).   That is, I suspect that (86a) has the structure depicted in (89), where the embedded subject is Case-marked by the null variant of the complementizer *for*.[49]

(89) We would prefer [$_{CP}$ φ_{for} John to be clever].

One argument in favor of such a structure is that in American English, *prefer* licenses an alternative variant in which the complementizer *for* is overtly realized, as indicated in (90a).   This contrasts with the fact that *believe* does not allow such a variant even in American English, as can be seen in (90b).

(90)a. We would prefer for John to be clever.
   b. *We believe for John to be clever.

Second, as illustrated in (91), unlike *believe*, *prefer* does not permit the matrix adverb to appear to the right of the infinitival subject even marginally, which suggests that the latter stays within the embedded clause.[50]

(91) *We would prefer John very much to be clever.

Finally, as shown in (92a), *prefer* allows a pseudo-cleft variant (Bresnan 1972), which is to be compared with the example of *believe* in (92b).

(92)a. What we would prefer is for John to be clever.[51]
   b. *What we believe is for John to be clever.

Believe, when taking a nonfinite complement, selects for an IP rather than a CP, and as noted above, its infinitival subject raises to the matrix domain to obtain Case.   Thus, (92b) is ungrammatical, because its clausal complement is CP whose subject is Case-marked in situ by *for*.   If *prefer* were also an RTO verb, it should not license pseudo-clefting either by the same token.   Therefore, it can be concluded that in (86a) the embedded subject is assigned Case by the null complementizer, and it would not raise

even if the matrix verb is passivized, as in (86b).

4.4.2 Potential Counterexamples

In the preceding subsection I argued that whether a given predicate exhibits raising or arbitrary control depends on where its infinitival argument is generated. That is, if the infinitive is projected as an external argument, then arbitrary control is obtained, whereas if no external argument is projected, and the infinitive is generated as an internal argument, then raising is obtained. However, there are some predicates that might cast doubt on this generalization. In this subsection I will take up two such cases: psychological predicates and the adjective *likely*, and argue that they merely constitute apparent counterexamples.

4.4.2.1 Psychological Predicates

A psychological predicate does not allow raising, as shown in (93a), but licenses arbitrary control (marginally for some speakers[52]), as can be seen in (93b).
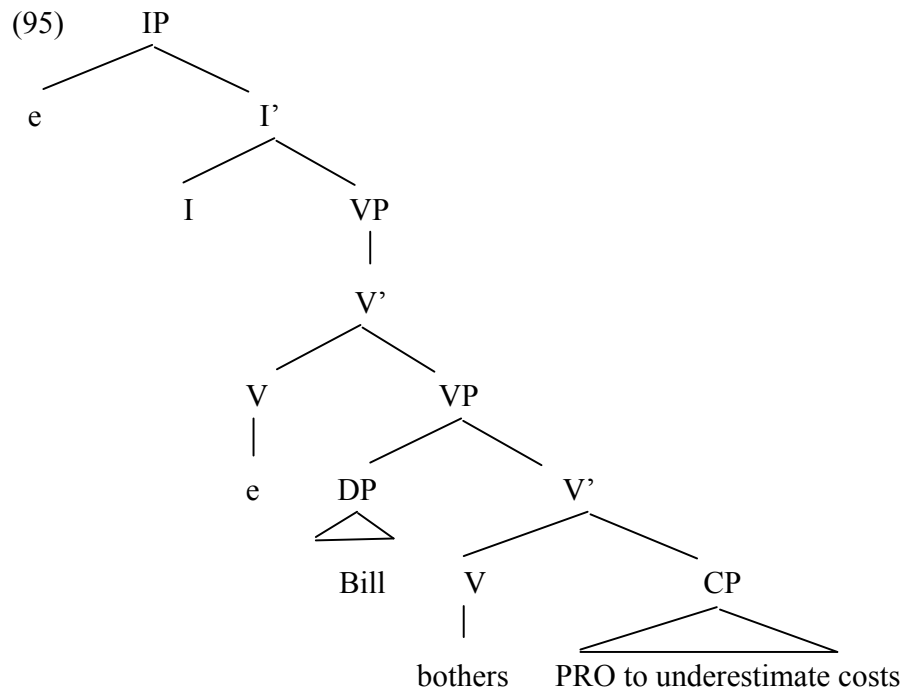
(93)a. *John$_i$ bothers Bill [t$_i$ to underestimate costs].
   b. (??)It bothers Bill [PRO$_{arb}$ to underestimate costs].[53]

Thus, it is suspected that the infinitive in this construction is projected externally and subsequently extraposed sentence-finally.

However, Landau (2000 & 2001) maintains that such an infinitive is an internal argument of a psych-predicate. For example, he would postulate the structure schematized in (95) for sentence (94).

(94) It bothers Bill$_i$ [PRO$_i$ to underestimate costs].

Namely, the infinitive is base-generated as the complement of the lower verb in the Larsonian shell (Larson 1988), whose external argument is unprojected. If the above structure is correct, then it is quite mysterious in the present analysis why psych-predicates do not allow raising and reject arbitrary control in the same way as *seem*

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(95)

```
            IP
          /    \
         e      I'
               /  \
              I    VP
                   |
                   V'
                  /  \
                 V    VP
                 |   /   \
                 e  DP    V'
                    /\   /   \
                  Bill  V     CP
                        |    /  \
                     bothers  PRO to underestimate costs
```

does.   Some might suspect that it is the Experiencer argument on the movement path that blocks raising in (93a).   However, such an approach is rather off the mark, because *strike* also has an intervening Experiencer but permits raising, as illustrated in (96).

(96) John$_i$ struck Bill [t$_i$ as practical].

In fact, I do not agree with the structure in (95).[54]   Instead, I believe that the infinitive in question is an external argument, as the data in (93) suggests.   In the remainder of this subsubsection, I will give some arguments that justify this approach.

First, a psych-predicate allows an intraposed variant.   Sentence (97) is such a variant of (93b), and (98b) such a variant of (98a).

(97) [PRO$_{arb}$ To underestimate costs] bothers Bill.[55]

(98)a. It bothers Bill that John underestimates costs.

    b. That John underestimates costs bothers Bill.

Second, a psych-predicate does not license *wh*-extraction from its clausal argument. Observe the examples in (99) and (100).

(99) *What does it bother Bill that John underestimates?

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(100)a. It bothers Bill to fix the car with a wrench.

     b. *How$_i$ does it bother Bill [to fix the car t$_i$]?   (Answer: With a wrench)

That is, the two diagnostics discussed in the preceding section indicate that the infinitive of a psych-predicate is underlyingly an external argument.

     Therefore, the fact that a psych-predicate exhibits arbitrary control rather than raising does not pose any problem for the analysis presented in this section.

4.4.2.2 *Likely*

     The adjective *likely* licenses raising, as can be seen in (101).

(101) John$_i$ is likely [t$_i$ to underestimate costs].

However, according to some speakers, this predicate also allows arbitrary control, as indicated in (102), contrary to the typical characterization.[56]

(102) (*)When the numbers are so big, it is likely [PRO$_{arb}$ to underestimate
      costs].

     Furthermore, *likely* allows an intraposed variant (at least marginally), as shown in (103) and (104).

(103) ?When the numbers are so big, [PRO$_{arb}$ to underestimate costs] is likely.

(104)a. It is likely that John underestimates costs.

     b. (?)That John underestimates costs is likely.[57]

This is problematic for the analysis proposed in the preceding subsection. Basically, it claims that when the infinitive of a predicate is an external argument, arbitrary control is obtained, whereas when no external argument is projected, and the infinitive is generated as an internal argument, raising is obtained. Yet it appears that *likely* allows both operations, which is a contradiction.

     As the first step towards solving the problem, let us apply the *wh*-extraction diagnostic to this predicate. As can be seen in (105) and (106), *likely* licenses *wh*-extraction from its clausal argument.

(105) What is it likely that John underestimates?

(106)a. John is likely to fix the car with a wrench.

b. How$_i$ is John likely [to fix the car t$_i$]?   (Answer: With a wrench)

The above examples suggest that the embedded clause of this predicate is an internal argument.   Taking this data straightforwardly, the question to be answered is how this predicate allows arbitrary control and intraposition.   One possible explanation is that for some speakers, *likely* is simply ambiguous between the familiar raising predicate as in (101) and the control predicate as in (102).   But the problem with this approach is that it essentially argues that the two uses of *likely* are totally unrelated to each other, and the fact that they share the identical phonological form is merely an accident.

Thus, I will give the following solution instead.   For *likely*, the infinitive/*that*-clause is inherently an internal argument.   However, it can optionally be externalized in the lexicon just like the internal argument of an adjectival passive in Levin & Rappaport's (1986) analysis.   In support of this proposal, even for speakers who allow arbitrary control with *likely*, adjunct extraction is impossible with this construction, as illustrated in (107).[58]

(107)a. (*)When the numbers are so big, it is likely to underestimate costs out of confusion.

b. *When the numbers are so big, how$_i$ is it likely [to underestimate costs t$_i$]?   (Answer: Out of confusion)

Another piece of evidence that corroborates the suggested approach is that if it is made clear that the infinitive has been extraposed, then even among those who basically reject *likely* as a control adjective, there are some who come to permit this construction.   For example, some of my informants judged (108a) to be ungrammatical but still accepted (108b), where the infinitive appears to the right of the locative adjunct.

(108)a. (*)When driven by anger, it is likely [PRO$_{arb}$ to commit a murder for an absurd reason].

b. (*)When driven by anger, it is likely in this crazy world [PRO$_{arb}$ to commit a murder for an absurd reason].

To sum up, *likely* is inherently a *possible*-type predicate, but it can optionally be

turned into a *seem*-type by a certain lexical operation.   Consequently, this predicate licenses both raising and arbitrary control, at least for some speakers.

4.5 Summary

The main points of this chapter can be summarized as follows.

1. Every predicate is either controllable or noncontrollable with respect to the subject.
2. Broadly classified, there are five types of OC double complement verbs: *promise*-type, *vow*-type, *ask*-type, *order*-type and *signal*-type.
3. There are three semantic features relevant to the controller choice with OC double complement verbs: INTEND, APPEAL and ALLOW.   Eech OC double complement verb inherently carries one of these features, which in part determines its behavior.
4. There are three rescue operations to save sentences when a control verb that requires a controllable complement takes a noncontrollable predicate: coercion, INTEND deletion and modal deletion.   The last two can lead to control shift.
5. Semi-control is control in which pro appears where PRO would typically occur in OC. In this type of control, the semantic/pragmatic restrictions imposed by the control verb is at work, but the syntactic requirement of locality, which pertains to PRO, is absent.
6. PRO is lexically prespecified as plural in semantic number.   This licenses partial control with certain control predicates.
7. Whether a given predicate exhibits raising or arbitrary control depends on where its infinitival argument is generated.   If the infinitive is an external argument, then arbitrary control is obtained, as in the case of *(be) possible*, whereas if no external argument is projected, and the infinitive is generated as an internal argument, then raising is obtained, as in the case of *seem*.
8. The infinitives of psychological predicates are projected as external arguments.   Thus, they reject raising and allow arbitrary control.
9. The infinitive of *likely* is inherently an internal argument, but it can optionally be externalized in the lexicon.   Thus, it allows both raising and arbitrary control.

Notes to Chapter 4

1. As mentioned in Chomsky (1981), Farkas (1988) and Landau (2000), some speakers can actually interpret sentences like (1b) as subject control as well. This will be discussed in section 4.2.3.2.

2. The notion of controllability of a predicate is quite similar to the notion of action, adopted by Sag & Pollard (1991). However, I am not quite sure whether the two are exactly identical or not.

3. This is probably related to Lakoff's (1971) observation that the subject of a *get*-passive, unlike that of a regular passive, can be interpreted agentively.

4. In paraphrase (10a) appears *would*, which is the past form of the future auxiliary *will*. I do not take this to be evidence that the infinitive of control *promise* contains the null variant of *will* or some tense operator. Rather, I tentatively assume that this infinitive does not have any tense material and that the future interpretation arises as part of the default interpretation of an infinitive. But see Stowell (1982) and Martin (1996 & 2001) for a different view.

5. I adopt (i) as the definition of entailment.

      (i) Sentence X entails sentence Y iff: if X is true, then Y is true.

6. Jackendoff & Culicover (2003) and Culicover & Jackendoff (2006) also suggest that some control verbs contain 'intend' as part of their meaning, which determines their controller choice. Although the present analysis is quite similar to theirs, I think that the two approaches are rather different in detail. First, while the former assumes that INTEND is one of the semantic features of which *promise* is composed, the latter argues that it is another decomposed meaning 'be obligated' that determines the controller choice with this verb. Second, while Jackendoff & Culicover and Culicover & Jackendoff argue that the verb *persuade* contains 'intend' as part of its meaning, I believe that it is the feature APPEAL that is relevant to the controller choice with this verb.

7. Suppose that the referent of the matrix object of control *promise* happens to be someone over whom the referent of the matrix subject has some control (or at least so the referent of the matrix subject believes). Then even if the former is identical with the referent of PRO, the first condition of the feature INTEND is not violated. However, even under such circumstances, control by the object is impossible with *promise,* as shown in (i).

      (i) *The professor promised the student$_i$ [PRO$_i$ to write a paper].

This is because in the presence of the feature INTEND, X promising Y about Y's action is pragmatically odd where X≠Y.   Thus, (ii) is also ill-formed, in which the complement

clause is finite.

(ii) *The professor promised the student$_i$ that she$_i$ would write a paper.

8. In my survey, there was a small class of informants who rejected the object control reading of *promise* with any kind of complement. In the following part of this subsubsection, I will briefly speculate the reason for such judgments.

9. Bresnan (1982) also suggests that control *promise*, when the object control reading is available, has a different meaning than when used as a normal subject control verb. She argues that its secondary meaning is equivalent to what is found in *promise* with a finite complement as in *John promised Bill that it would rain*. However, this analysis is criticised by Sag & Pollard (1991). They show that object control *promise* and *promise ... that* are not exactly synonymous by providing the contrast in (i).

(i)a. #The fortune cookie promised Montana to be allowed to play in the Super Bowl.

b. The fortune cookie promised Montana that he would play in the Super Bowl.

(Sag & Pollard 1991 (70) p.86 & (69) p.86)

Thus, while *promise* with a finite complement is compatible with an inanimate subject, as shown in (ib), the matrix subject of object control *promise* must always be animate, as can be seen in (ia) (but (ib) is not as good as it is claimed to be either for some of my informants). Note that this criticism does not apply to my approach, because *give ... one's assurance* also requires an animate subject, as illustrated in (ii).

(ii) #The fortune cookie gave Montana its assurance that he would be allowed to play in the Super Bowl.

10. Now I am also in a position to be able to account for the contrast in (i), reported by Chomsky (1980).

(i)a. John$_i$ was promised [PRO$_i$ to be allowed to leave].

b. *John$_i$ was promised [PRO$_i$ to get permission to leave].

(Chomsky 1980 fn.40 l.5 & fn.40 l.7-8)

Since *be allowed to ...* is a noncontrollable predicate, in (ia) the deep object can be taken as the controller. In (ib), on the other hand, because *get permission to ...* is controllable, this option is not available. For a piece of evidence that *get permission to ...* is controllable, observe (ii), where this expression is naturally used as an imperative.

(ii) Get permission to leave!

11. It is not the case that when control *promise* is combined with a noncontrollable predicate, it always triggers control shift. Observe example (i).

(i) *Peter promised Amy to be tall.

Thus, (i) is ill-formed under any interpretation, where *promise* is combined with the noncontrollable predicate *be tall*. However, this unacceptability is due to semantics/pragmatics and has nothing to do with control, because, as shown in (ii), the sentence is still quite awkward even if the infinitive is replaced by its finite counterpart.

(ii) ??Peter promised Amy that he/she would be tall.

12. For some reason, when the propositional argument of *ask* is finite, it is more natural to express the Goal argument in an *of*-PP rather than in a bare DP.

13. In some dialects, especially in American English, the complement clauses of verbs like *ask*, must be subjunctive present, as in (i), rather than indicative with the modal *should*.

(i) Peter asked of Amy$_i$ that she$_i$ leave the room.

I put aside this fact for the purpose of my discussion.

14. In some dialects, *appeal* cannot take a finite complement.

15. Although ditransitive control *ask* takes a null *should* infinitive as its complement, which forces object control on it, simple transitive control *ask* as in (i) selects for a null *can/may* infinitive, as evidenced by the paraphrase in (ii).

(i) Peter$_i$ asked [PRO$_i$ to leave the room].

(ii) Peter asked that he could/might leave the room.

This type of infinitive, together with the feature APPEAL, makes transitive control *ask* a subject control verb.

16. While *persuade* is also categorized under the *ask*-type, it appears that control shift with this verb is difficult for some speakers, which has already been noted by Chomsky (1981). I have no explanation of why this is the case. Note, however, that control shift with *persuade* is perfectly available to other speakers, which has already been reported by Sag & Pollard (1991). Consider their example (ib) in comparison with (ia).

(i)a. Susie$_i$ persuaded the teacher$_j$ [PRO$_{*i/j}$ to leave early].

(Also Appeared as (19a) ch.3 p.129)

b. Susie$_i$ persuaded the teacher$_j$ [PRO$_{i/*j}$ to be allowed to leave early].

(Sag & Pollard 1991 (71) p.86)

17. For a reason, about which I am clueless, this sentence is not perfect for some speakers.

18. This sentence, of course, can be construed as object control as well, which is irrelevant to the present discussion.

19. Sentence (28a) is not a perfect paraphrase of (27a), since unlike the latter, it lacks a Goal argument. This is because *order* has the restriction that when taking a finite complement, the Goal argument is not syntactically expressed. Nevertheless, this

paraphrase is good enough for the purpose of knowing whether a modal lurks in the complement clause of (27a).

20. In some dialects, *authorize* cannot take a finite complement either.

21. Unlike the *ask*-type, the semantics of *order* is incompatible with the situation where someone over whom the referent of the matrix object has some control happens to be the referent of the matrix subject. Thus, this verb never exhibits subject control with a controllable complement. Consider the following example.

(i) *The pupil$_i$ ordered the teacher [PRO$_i$ to leave early].

In (i) the pupil is an orderer to the teacher and someone under her control at the same time, which is a contradiction. Therefore, the sentence is infelicitous in the specified reading.

22. Again, for some speakers, a finite complement is incompatible with the verb *allow*.

23. In (33a) and (33b) *pouvoir* 'may' is used as the French counterpart of *be allowed to*, since the Goal argument of *permettre* 'allow' cannot be promoted to the subject position by passivization.

24. As far as my informants are concerned, *signal* is primarily an object control verb, whereas *threaten* usually exhibits subject control. However, the ambiguity of the former is reported by Sag & Pollard (1991), and that of the latter by Coppock (2005). Also, with *assure*, there were some among my consultants who did not permit an infinitival complement at all.

25. Hornstein (2003) suggests that in sentences like (ia), it is the presence of the preposition *to* that makes subject control possible. As a piece of evidence to support this view, he points out that if *to* is absent, as in (ib), object control is forced.

(i)a. I$_i$ committed to Bill [PRO$_i$ to leave].

b. John$_i$ committed Bill$_j$ [PRO$_{*i/j}$ to leave early].

(Hornstein 2003 (67) p.34 & (i) fn.60)

However, in the light of example (35a), which allows either type of control regardless of the presence of *to*, the above fact about *commit* is perhaps just an accident. Note further that for speakers who can only interpret (35a) as object control, *to* can still be present, which is not consistent with Hornstein's proposal.

26. It seems that the verb *assure* can also be associated with an ECM structure. For example, in the ECM reading, (35b) means, 'Peter assured (someone) that Amy would leave'. I will ignore such an interpretation here.

27. According to Uchibori, not only pro but also PRO can be used as a silent subject in control constructions in Japanese. She argues that the silent category is pro when the controller is not local, as in (43), but that it is either pro or PRO when the controller is

local, as in (42).   I will leave this issue open in this thesis.

28. As mentioned in Landau (2000: fn.15 ch.2), speakers of British English (and some speakers of Canadian English) find sentences like those in (49) grammatical.   For the explanation of this phenomenon, see endnote 28.   Also, for a reason, which I do not understand, my British informants did not accept (49a).

29. As mentioned in Landau (2000: fn.16 ch.2), sentences like those in (52) are again grammatical in British English (though my informants from Britain did not like (52a) very much).   This is because semantic plurality can often license syntactic plurality in British English.   The same account can be extended to the grammaticality of the examples in (49).   See Landau (2000: 50-51) for details.

30. To make matters more complicated, even in American English, in which the sentences in (52) are ill-formed, the noun *couple* can still license a plural anaphor, as shown in (ia), but not plural agreement, as can be seen in (ib).

> (i)a. The couple advertised themselves as the best dancers in town.
>
>   b. *The couple are dancing.

I suppose that this is because *couple* clearly signifies a pair of persons, which prevents it from being referred to by *itself*, whose antecedent is usually inanimate.

31. Landau maintains that the phenomenon of split control as in (i) should be distinguished from PC, providing the contrast in (ii) as a piece of supporting evidence.

> (i) Mary$_j$ proposed to John$_i$ [PRO$_{i+j}$ to dance together at the party].
>
> (ii)a. *John told Mary that he$_i$ preferred [PRO$_{i+j}$ to meet each other at six].
>
>   b. John$_i$ proposed to Mary$_j$ [PRO$_{i+j}$ to meet each other at six].
>
>   (Landau 2000 (79a) & (79b) p.53)

Thus, split control, unlike PC, can license syntactic plurality like a plural anaphor in the complement clause (but see Martin (1996) for the claim that PC can also license a reciprocal in the complement clause).   However, these judgments do not appear to be prevalent at least among the speakers that I consulted (see Lebeaux (1985) and Hornstein (1999 & 2003) for the same line of judgments as my informants).   For example, as indicated in (iiia) *persuade* licenses split control.   Nevertheless, as shown in (iiib), none of my informants permitted *each other* with this predicate (see also Hornstein (2003: fn.13) on this issue).

> (iii)a. John$_j$ persuaded Mary$_i$ [PRO$_{i+j}$ to meet at six].
>
>   b. *John$_j$ persuaded Mary$_i$ [PRO$_{i+j}$ to meet each other at six].

Therefore, I provisionally regard split control as a special case of PC, namely PC where the portion of the reference of PRO not provided by the controller is supplied by an argument in the local domain other than the controller.   If I am on the right track, then I

could provide an answer to a potential problem with a unified theory of OC and anaphor binding, which Landau (2000) brings up.　　He argues that if OC PRO and an anaphor are governed by the same mechanism, then it is rather strange that the former can have split antecedents (i.e. split control), while the latter does not have this option available.　　But perhaps split control is not control in which the antecedent is split in the real sense but simply a special case of PC, as discussed above.　　As for sentence (iib), it may be an error of sorts.

32. For the reason why (i) is well-formed, see the discussion in section 3.5.

      (i) [PRO$_{arb}$ Doing everything by ourselves/yourselves] is undesirable to the
         society.

33. As for words like *couple* and *trio*, if there is only one member, then one can no longer call this as such.　　But this has nothing to do with semantic number.　　These words already contain as part of their meanings the information as to how many members they consist of, which is incompatible with the situation where they only have a single member.

34. Jackendoff & Culicover (2003) and Culicover & Jackendoff (2005), on the other hand, explain PC with the notion of "collective intention", proposed by Searle (1995).　　In order to understand what a collective intention is, consider, for example, the situation where Amy and Beth are together carrying a long table, one at each end.　　Obviously, Amy does not simply intend to carry one end of the table, though that is all she is doing. Instead, her intention should be directed towards the activity of carrying the table together while she understands that her role is to carry that end.　　Jackendoff & Culicover and Culicover & Jackendoff argue that PC appears in contexts where the controller holds an intention with respect to some joint activity described by the complement.　　If this hypothesis is correct, then only voluntary joint activities should be permitted as PC complements.　　On the other hand, collective states and collective nonvoluntary events should be infelicitous as such complements.　　Observe the following examples, which Culicover & Jackendoff (2005) provide to support their hypothesis.

      (i) Hildy told me that she$_i$ wants [PRO$_{i+j}$ to form/#constitute an alliance].
        (Culicover & Jackendoff 2005 (104b) p.461)

      (ii)a. ?George told Dick that he$_i$ looked forward to [PRO$_{i+j}$ being jointly
         examined by the doctor].

        b. #George told Dick that he$_i$ looked forward to [PRO$_{i+j}$ being jointly elected
         by the voters].
        (Culicover & Jackendoff 2005 (105a) & (105b) p.461)

      (iii)a. The chair$_i$ hopes [PRO$_{i+j}$ to adjourn shortly after calling a vote].

b. #The chair$_i$ hopes [PRO$_{i+j}$ to adjourn shortly after receiving a bomb threat].

(Culicover & Jackendoff 2005 (106a) & (106b) p.461)

In (i), while forming an alliance can be taken as a joint activity, constituting an alliance is only a state, and thus, the latter is remarkably worse as a PC complement. Similarly, (iia) is less acceptable than (iib), because one can voluntarily be jointly examined by the doctor, whereas it is impossible to voluntarily be jointly elected by the voters. Lastly, (iiib) is worse than (iiia), since adjourning in reaction to a bomb threat is not a preplanned voluntary action, compared with adjourning after a vote.

However, these examples do not necessarily show with clarity that PC is restricted to contexts where the control complement expresses a voluntary joint activity. First, although it is true that (ib) is degraded, the reason why it is bad has nothing to do with PC. This is evidenced by the fact that (iv) is still ill-formed, where the referent of PRO is exhausted by that of the controller.

(iv) #[Hildy and Bill]$_i$ want [PRO$_i$ to constitute an alliance].

The control verb *want* resists taking *constitute an alliance* as its complement VP for whatever reason, which is why (ib), as well as (iv), is ill-formed.

Furthermore, the last two pairs of examples are not free from problems either. Namely, (iia) and (iiib) are somewhat pragmatically odd in their intended interpretations due to the incompatibility between the control verb and its complement clause. Although I presented these sentences to my informants with *looked forward to* in (ii) and *hopes* in (iii) replaced by *hated* and *decided*, respectively, which also allow PC, it appears that the contrasts in (ii) and (iii) were still subtle.

35. This type of sentence, as well as the type in (65b), is not grammatical for my Greek informants. See also Terzi (1992) for a relevant issue.

36. Terzi (1992) has already reached a similar conclusion about Modern Greek *prospatho* 'try'. Her argument is based on the fact that this verb licenses *wh*-extraction when the complement subject is null and non-distinct from the matrix one, as shown in (ia), whereas extraction is blocked when the complement subject, which is distinct from the matrix one, is lexically expressed, as can be seen in (ib).

(i)a. Ti$_j$ prospathise   i Maria$_i$ [na diavasi   e$_i$ t$_j$]?
   what.(Acc)$_j$ tried.(3.sg)   the Mary.(Nom)$_i$ [Subj read.(3.sg)   e$_i$ t$_j$]
   'What did Mary try to read?'
   (Terzi 1992 (55) p.43)

   b. *Pia vivlia$_i$ prospathise i Maria   [na diavasoun
   which books.(Acc)$_i$ tried.(3.sg)   the Mary.(Nom)   [Subj read.(3.pl)

ta pedia   t$_i$]?

        the children.(Nom)   t$_i$]

        'Which books did Mary try for the children to read?'

        Terzi 1992 (53) p.41)

37. The material presented in this subsection is published in Uchiumi (2005b).

38. The fact that *seem* does not allow its *that*-clause argument to be intraposed has already been reported by Chomsky (1986b).

39. In order for this argument to hold, it must be the case that unaccusative verbs/adjectives with clausal complements do not allow them to raise to the subject position for some independent reason. There are a few conceivable reasons for this restriction. For example, as suggested in Koster (1978) and Haegeman & Gueron (1999), clausal elements might not be permitted in the subject position (in the intraposed variant, the clausal material occupies some A'-position).   Or alternatively, it might be the case that clausal elements do not need Case, and raising the clausal complement of an unaccusative verb/adjective to the subject position is superfluous, which violates the principle of "movement as a last resort" (Chomsky 1991).   At any rate, whatever may be the actual reason for the restriction, it would not affect the rest of the argument in this section.

40. I suspect that there exists a PF constraint that requires clausal material to be a peripheral element in a clause or a nominal (see endnote 40 to chapter 2 for discussion). To see that the sentences in (71) really involve extraposition, consider the examples with *mention* in (i), whose Theme argument is nominal rather than clausal.

        (i)a. They mentioned John's mistake to Bill

          b. ?(?)They mentioned to Bill John's mistake.

Thus, when the Theme is not clausal in this construction, the order where it precedes the *to*-PP is less marked than the other way around.

41. Although a few native speakers who read the draft of this section commented that (76b) was acceptable to them, many of my informants judged it to be quite degraded if not completely ungrammatical.

42. Though, as discussed in section 2.5.4, I assume that *seems* in (80a) also forms a syntactic predicate, sharing the subject with the matrix INFL, it is ignored here for simplification.   The same comment applies to *seems* in (81a) and maybe the copulas in (80b), (81b) and (81c).

43. I think that a CP might be further layered over the infinitival clause in (80b). However, in my system, CP does not interfere with the formation of A-chains (see section 2.5.2 on this issue).

44. I thank Luigi Burzio (pc) for drawing my attention to this issue.

45. In (i) the implicit demoted subject is seemingly interpreted as being identical with the derived subject.

> (i) John was devoted to physics.
>
> interpretation: 'John devoted himself to physics.'

However, I do not think that the above example is really passive.   Namely, *devoted* here is not a past participle of the verb but simply an adjective.   Thus, it is compatible with the intensifier *very*, as shown in (iia), though past participles cannot be intensified by such an element, as can be seen in (iib).

> (ii)a. John was very devoted to physics.
>
> b. *John was very blamed.

46. Sentence (i) is ill-formed, even though the complement subject is identical with the matrix subject.

> (i) *We tried ourselves to be clever.

Here, I assume that a more general version of the Avoid Pronoun Principle (Chomsky 1981) is at work.   In its original formulation, this principle forces the choice of a null element over an overt pronoun.   But I suspect that it is more general to the effect that where a null alternative is available, the use of an overt element should be avoided, unless there is a special reason to do so.   In the context of (i), of course, PRO can be used instead of the reflexive for the same interpretation, as in (82a).   But see Martin (1996: fn.3 ch.3) for an argument against such a view.

47. Kyle Johnson (pc) suspects that the complementizer *for* can only occur in declarative environments.   However, in some variants of nonstandard English, *for* can occur in interrogative complements with null subjects.   For instance, (i) is an example from the Belfast dialect, reported by Henry (1992).

> (i) I don't know where for to go.   (Belfast dialect)
>
> (Henry 1992 (34) p.287))

48. In Postal (1974) this type of sentence is marked with either a full check or one question mark, but my informants felt that (88) was worse than that.   In fact, a fair number of them judged it to be simply ungrammatical (see Johnson (1991) and Runner (1995), who report similar degraded judgments).   This is because, as Runner (1995) suggests, for such speakers, a manner adverb like *sincerely* cannot follow the accusative argument, which is even true in simple sentences, as shown in (i).

> (i)a. We sincerely believe John.
>
> b. (??)We believe John sincerely.

49. If *John* is really Case-marked by null *for* in (86a), some might wonder why the

impersonal passive in (i) is ungrammatical.

> (i) *It would be preferred John to be clever.

As discussed in endnote 53 to chapter 2, I believe that in impersonal passives taking a clausal argument with an overt subject, the complementizer must be phonologically realized. Thus, (ii) is acceptable, in which *for* is overtly manifested.

> (ii) It would be preferred for John to be clever.

50. Postal (1974) and Koizumi (1993) maintain that the *prefer* construction as in (86a) also involves RTO. Their argument is based on the following pair of examples.

> (i)a. Harry would prefer Bob, unfortunately, to marry Sheila.
>
>   (Koizumi 1993 (iib) fn.12 quoting from Postal 1974 (141b) p.148)
>
>   b. *Harry would prefer for Bob, unfortunately, to marry Sheila.
>
>   (Koizumi 1993 (iia) fn.12)

Namely, in (ia), just as in (88), an adverb can follow the embedded subject, while in (ib) such adverb placement is impossible, where the Case-marker *for* blocks raising.

> However, though it is true that there were a handful of speakers who felt that (ia) was better than (ib), many of my informants judged the latter to be as grammatical as or even better than the former (some dialects favor a *for* ... *to*-infinitive as the complement of *prefer*). I believe that the reason why a number of speakers accept both of these examples is that *unfortunately* is a speaker-oriented adverb and does not really modify the matrix verb. Thus, the two sentences can be roughly paraphrased as, 'I/We think that it is unfortunate that Harry would prefer (for) Bob to marry Sheila'. In support of this claim, even the subjunctive variant in (ii) is acceptable, where raising absolutely does not take place.

> (ii) Harry would prefer that Bob, unfortunately, marry Sheila.

Also, it should be added that many of my consultants who did not accept (88) judged (ia) and (ib) to be more or less well-formed.

51. Again in pseudo-cleft contexts, a complementizer is supposed to be overtly realized, which is why (i) is ungrammatical (see endnote 52 to chapter 2 for details).

> (i) *What we would prefer is John to be clever.

This constraint can also be observed when the focused element is a finite clause, as in (ii).

> (ii)a. What we believe is that John is clever.
>
>   b. *What we believe is John is clever.

52. The reason why it is difficult for some speakers to obtain the arbitrary reading of PRO in (93b) is that the Experiencer DP causes what I call the pseudo-obligatory control effect in this construction (Uchiumi 2003 & 2004). See also section 3.6.2.1

53. As will be discussed shortly, this sentence permits another interpretation where *Bill* is

the controller, which is actually more natural.   In fact, Landau (2000 & 2001) argues that this is the only possible construal for the construction in (93b) (but see sections 3.3.4 & 3.6.2.1 for my argument against such judgments).

54. See also Pesetsky (1995) for arguments against Belletti & Rizzi's (1988) approach to psych-predicates, which is a precursor of Landau's analysis.

55. Just like (93b), this sentence has a second interpretation where PRO is controlled by *Bill*.

56. The arbitrary control use of likely seems to be very pervasive among young people in the United States and Canada according to my grammaticality judgment survey.   But I am not sure if this is true of other English-speaking areas such as Britain and Australia as well.

57. If a native speaker of English feels that this sentence is a little awkward, then she should consider example (i) instead, which sounded better to many of my informants.

> (i) That John will underestimate the cost of having a huge wedding is extremely
>   likely.   (Lisa Travis pc)

58. In fact, with control *likely*, even argument extraction is difficult, as shown in (i). Example (ia) should be compared with (102), and (ib) with (108a), which will appear shortly.

> (i)a. ?(?)When the numbers are so big, what is it likely to underestimate?
>   b. ??/*When driven by anger, which crime is it likely to commit for an absurd
>   reason?

I am not sure why this is the case, since, as discussed in section 4.4.1, infinitives usually constitute only weak islands.

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