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Person in Partial Control

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Abstract

Background: Obligatory Control and Its Exceptions

Since Rosenbaum (1967), generative linguists have incessantly sought to discover underlying mechanisms of control observed in various languages. Control is a broad phenomenon that has been taken to involve some kind of referential dependency of one linguistic element on another. After Williams (1980), the classification of the phenomenon into two subtypes, obligatory control (OC) and non-obligatory control (NOC), has been widely accepted. The focus of the present thesis, complement control, is often subsumed under OC.

The definition of OC varies by linguist, but OC complement control, under a prevalent view, is said to hold when the reference of the null subject PRO of a nonfinite complement is identical to that of the predetermined argument (the controller) of the immediately higher clause. For instance, in the English sentence (1), the reference of the matrix subject *Ernie Banks* and that of PRO are identical at least in a pre-theoretical way; it represents a typical OC case.

- (1) Ernie Banks_{*i*} hopes PRO_{*i*} to move to New York. (Morgan (1970))

However, since Landau (2000), attention to atypical or exceptional behaviors of complement control PRO has grown significantly. PRO and its alleged controller do not always refer to the same set of individuals. For example, (2) exhibits partial control in which the reference of PRO constitutes a superset of the reference of the matrix subject *The chair*. (3) allows control shift; the controller is not predetermined in the way presupposed for OC; the controller may be the subject or the object of the matrix clause. The same sentence, (3), also permits split control where the reference of PRO includes both the matrix subject and object reference sets. We find discussions dealing with these phenomena in the earlier literature on control, but they had long been treated as exceptions to OC, or sometimes subsumed under NOC.

- (2) The chair_{*i*} preferred PRO_{*i+*} to meet at 6. (Landau (2000))

- (3) Kim_{*i*} proposed to Sandy_{*j*} PRO_{*ij/i+j*} to do the dishes. (Rooryck (2000))

Implicit control, such as (4) below, also challenges the OC view of complement control. The controller is left implicit, or at least not pronounced. PRO is understood to refer to the agent of

the matrix predicate *decide*. If OC assumes a syntactic representation of the controller and if implicit controllers lack such a representation, it would fall outside OC. In fact, implicit control is often subsumed under NOC.

(4) It was decided PRO to have dinner at 6. (Williams (1980))

We need a generalization beyond OC that would range over such broader scope of exceptional patterns of complement control.

Goal: Providing a Systematic Account for Exceptions – *De Se* and Partial Control

The present thesis aims at proposing a syntactic mechanism behind various complement control patterns that do not necessarily fall under the traditional view of OC. Towards this goal, first, I presuppose two types of OC proposed in Landau (2000): one is Exhaustive Control (EC) involving predicates including implicatives (e.g. *force* and *manage*) and aspectuals (e.g. *begin* and *finish*); the other is Partial Control (PC) typically associated with desiderative predicates such as *hope* and *prefer*. Crucially, PC allows *both* partial and exhaustive control while EC permits only exhaustive control. Interestingly, this divide is aligned with a cluster of other phenomena: PC permits control shift, split control, and implicit control, which constitute exceptions to the traditional OC, while EC allows none of these patterns (Landau (2015)). The duality of complement control is now widely accepted (Bianchi (2003), Grano (2012), Landau (2000 *et seq.*), Pearson (2013, 2016), Wurmbrand (2003)).

Second, this study pays special attention to the correlation between *de se* construals and partial control, a recent important discovery due to Landau (2015). In PC, a *de se* reading of PRO is obligatory; in EC, *de se* is non-obligatory. Why are the requirement for *de se* and availability of partial control connected in this way? Finding a solution to this question may lead us to a deeper understanding of PC structures. More concretely, the central puzzle for this thesis can be stated as (5).

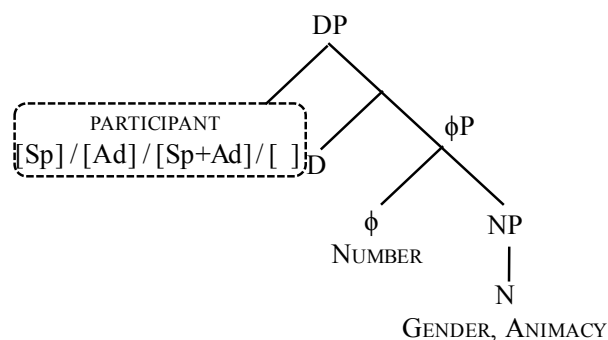
(5) What are the common factors bringing about both *de se* and partial control?

The present study shows that a solution to (5) paves the way to a unified account for various OC exceptions including not only partial control, but also control shift, split control, and implicit control.

Proposal: Person and PC

This thesis argues that PC, the structure permitting both partial and exhaustive control, is reducible to the person system. I propose that *de se* construals and partial control observed for PC PRO derive from the same structural reasons that give rise to *de se* readings and *associative plurality* of the first and second person pronouns. The common factors shared by PC PRO and the first/second person pronouns are the notions of the speaker (or author) and the addressee, the primitives of person indexicals. These primitives are represented in the internal structure of PC PRO, the first/second person pronouns, and some instances of the third person pronouns as in (6). This analysis builds on Harley and Ritter (2002) and Déchaine and Wiltschko (2002, 2009).

(6)



Sp=Speaker (Author), Ad=Addressee

Evidence for the connection between PC PRO and the speaker/addressee primitives comes from Japanese PC complements, in which a force independent from the matrix force is overtly expressed. Intriguingly, the relevant complement forces correspond to those with certain subject restrictions. Previous literature has shown that some forces such as imperative, promissive, and exhortative restrict the reference of the subject to be a certain set of individuals inclusive of the speaker or the addressee, or both (Nitta (1991), Hasegawa (2009, 2010)). Similar observations are made for Korean, for instance, by Pak (2004) and Zanuttini, Pak, and Portner (2012). The present proposal extends such assumptions to PC complements, and to languages beyond Japanese and Korean. In fact, the restriction on the imperative force that its subject must include the addressee is a well-known cross-linguistic phenomenon.

It will be proposed that *de se* interpretations of PC PRO and the first/second person pronouns are brought about by the movement of the PARTICIPANT element at Spec DP in (6) to

the clausal CP domain above TP. This creates a self-ascriptive property out of the proposition denoting TP. The analysis is based on previous proposals on *de se* including Chierchia (1990) and Percus and Sauerland (2003ab). Importantly, I assume that the above-mentioned forces such as the imperative denote a self-ascriptive property, bringing about a *de se* (or *de te*) construal both in root and embedded environments. Such a view is in line with Portner (2004, 2007).

Furthermore, the present study adopts the analysis of Vassilieva (2005, 2008) on associative plurals. She assumes that the N head of associative plurals designates a non-descriptive human group. The associative plurality of the first/second person plural pronouns such as the English *we* and *you* arise from such a structure. The first/second person plurals do not refer to multiple speakers or addressees, but to a set of individuals inclusive of the speaker and/or the addressee. PC PRO bears a similar structure, allowing partial control. Control shift and split control as in (3) will also be accounted for by natural extensions of this analysis.

A crucial difference between PC PRO and the first/second person pronouns lies in the context against which their primitive speaker/addressee features are evaluated. While the primitives of the first/second person pronouns are indexed to the actual speech context, those of PC PRO are indexed to a reported speech, thought, or belief context. In this respect, PC PRO is comparable to shifted indexicals. The contrast in their morphologies, the zero-morphology of PC PRO and the overt forms of the first/second person pronouns, arises from the shift in contexts.

Nevertheless, this thesis argues that PC PRO is independently referential just as the first/second person pronouns are. Both PC PRO and the first/second person pronouns (in their canonical uses) are free variables with their semantic values assigned by the relevant context (Heim and Kratzer (1998), Heim (2008)). The reference of PC PRO and that of the alleged controller in the matrix clause often coincide, obeying the traditional OC definition. This is because the argument of the matrix clause often designates the speaker or the addressee of the shifted context. However, their referential identity is not a syntactic necessity. The current proposal denies the direct syntactic relation between the alleged controller and PC PRO. Their frequent overlaps in reference can be accounted for by the selectional properties of the matrix predicate. The predicate selects certain complement forces, which in turn restrict the subject reference to be inclusive of the speaker/addressee of the shifted context. Implicit control as in (4)

receives a natural account under this proposal. This part of my proposal is a radical departure from the previous literature, but it constitutes one of the most important contentions of the present thesis.

Conclusion: Reducing PC to No Control

The proposal that PC is reducible to the person system amounts to saying that it is reducible to non-controlled structures. After all, in the current proposal, PC PRO is not *controlled* by the matrix argument. It behaves just like the first/second person pronouns, putting aside the contrast in contexts. The PARTICIPANT element of PC PRO in a way serves the role of the controller, determining its reference; the PARTICIPANT is also the source of the relevant forces and obligatory *de se* interpretations. The corresponding element within the first/second person pronouns plays similar roles in root contexts. Although analyses for EC are almost entirely left to future study, at least for PC, we do not seem to need a construction-specific theory of control. Even if EC turns out to be something that requires an independent theory of control, my proposal for PC does not lead to complication of the theory. PC is simply subsumed under no control.

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List of Abbreviations

1	first person (in cited examples)	INT/Int	intentive
2	second person (in cited examples)	Loc	locative
3	third person (in cited examples)	LOG	logophor (in cited examples)
1P	first person	M	masculine
2P	second person	NEG	negative (in cited examples)
3P	third person	Neut	neuter (in cited examples)
Acc	accusative	NOC	non-obligatory control
Ad	addressee	Nom	nominative
Adj	adjective	Nonpast	nonpast tense
AH	attitude holder	Obl	oblique (in cited examples)
Assoc.pl.	associative plural	OC	obligatory control
ATC	Agree Theory of Control	Op	operator
C	complementizer	OPT/Opt	optative
C_{koto}	<i>koto</i> -complementizer	Past	past tense
CL	classifier	PC	Partial Control
Comp	complementizer (in cited examples)	PER	perfective (in cited examples)
COMPL	complementizer (in cited examples)	Pl	plural
Cop	copula	Pn	person
COP	copula (in cited examples)	Poss	possessive
C_{to}	<i>to</i> -complementizer	Pres	present tense
C_{yooni}	<i>yooni</i> -complementizer	PRM/Prm	promissive
Dat	dative	PROG	progressive
Dec	declarative (in cited examples)	PRP	preposition (in cited examples)
Decl	declarative	Prt	particle
Def	definite	Q	question
Dem	demonstrative	RE	referring expression
e	empty category	Sg	singular
EC	Exhaustive Control	sg	singular (in cited examples)
ec	empty category (in cited examples)	SG	singular (in cited examples)
eLC	external Logophoric Center	S_L	speech location
Excl	exclusive	Sp	speaker
EXH/Exh	exhortative	S_T	speech time
FEM	feminine (in cited examples)	Top	topic
Fut	future tense	TTC	Two-tiered Theory of Control
Gen	genitive	<i>ui-</i>	uninterpretable
Ger	gerundive	<i>uv-</i>	unvalued
<i>i-</i>	interpretable	<i>v-</i>	valued
iLC	internal Logophoric Center	Λ_A	logophoric agent
IMP/Imp	imperative	Λ_P	logophoric patient
IMPER	imperfective (in cited examples)		

Chapter 1. Introduction

1.1. Background: Obligatory Control and Its Exceptions

Since Rosenbaum (1965, 1967), generative linguists have incessantly sought to discover underlying mechanisms of control observed in various languages. This research area started out with the notion of the Identity Erasure Transformation, or Equi-NP deletion, which assumed that the subject of sentential complements is deleted when it is identical to a noun phrase in the main clause. Simply put, sentence (1)b was assumed to derive from (1)a by erasing the complement subject represented in the *deep structure* (in the sense of Chomsky (1965)).

- (1) a. John wants [~~John~~ to leave].
- b. John wants [____ to leave].

The deletion analysis soon turned out to be inapplicable to those cases with quantified expressions such as (2)b.¹ (2)b could not have derived from (2)a by deletion under identity.

- (2) a. Everyone wants [~~everyone~~ to leave].
- b. Everyone wants [____ to leave].

Soon, the deletion approach was overtaken by the view that control involves pronominalization, which led to the introduction of a theoretical formative PRO standing for certain subcases of subject gaps.² During the GB period, we saw a wealth of discussions on the nature of PRO, one of the most debated issues being whether it is a pronominal or an anaphor, or both. However, whichever position one had taken, the control in the core cases like (1)b was assumed to involve a referential identity relation or a referential dependency of one linguistic element on another. Such a view seems to have survived to date, particularly for Obligatory Control (OC). The definition of OC varies by linguist, and what constitutes OC in itself has given rise to considerable controversy. However, (3) represents a set of criteria for OC under a prevalent view.³

- (3) Obligatory Control (OC) criteria (based on Williams (1980) and Hornstein (1999))
 - a. PRO must have an antecedent.
 - b. The antecedent must locally c-command PRO.

- c. The antecedent is uniquely determined.
- d. PRO only allows a sloppy reading under ellipsis.
- e. PRO only allows the *de se* construal.

The term *locally* in (3)b implies that the antecedent is located in the immediately higher clause.

Under such criteria, complement control observed in (4) and (5) below typically falls under OC.

(4) John_i promised [PRO_i to leave].

(5) John told Mary_i [PRO_i to leave].

In both examples, PRO has a locally c-commanding antecedent satisfying (3)ab. They also meet (3)c in that in these sentences, the reference of PRO does not vary by context; its reference is predetermined to be the individual referred to by the matrix subject *John* in (4) and the matrix object *Mary* in (5); but no one else.⁴ (4) only permits a sloppy reading under ellipsis as illustrated in (6).

(6) John_i promised [PRO_i to leave], and Bill did too.

Bill did not promise that John would leave; Bill promised that he (Bill) himself would leave. The sloppy reading restriction is hard to show for (5) since *Mary* is also elided under VP ellipsis. However, both (4) and (5) qualify for the *de se* requirement of (3)e. Very roughly, a *de se* reading obtains when a sentence describes the situation in which the attitude holder is aware that the individual in his attitude (e.g. belief, expectation, promise) is he himself. (4) satisfies this condition since it is judged true only under situations where John is aware that he himself is to leave. (5) is also assumed to meet this condition in that it only allows *de te*, or a variant of *de se*. *De te* holds for an expression that truly describes the situations where the attitude holder (in this case John) is aware that the individual described (Mary) is his addressee.

Some controversies aside, control into verbal complements as in (4) and (5) have generally been equated with OC, while control observed in adjuncts and subject clauses have, at least more often, been subsumed under Non-Obligatory Control, NOC.⁵ NOC is defined only negatively as instances of control which do *not* meet OC criteria. In NOC, PRO does not necessarily have a locally c-commanding antecedent; the antecedent is not uniquely determined;

a strict reading is permitted under ellipsis; and a non-*de se* interpretation is allowed. (7)

exemplifies cases which have often been analyzed as falling under NOC.

- (7) a. [PRO_{arb} to leave] is nice. (Williams (1980: 212))
b. It is unclear [how PRO_{gen} to feed oneself].⁶ (Chomsky (1981: 75))
c. John_i thought that [[PRO_i making a fool of himself_i in public] disturbed Sue].
(Grinder (1970: 301))
d. The boat was sunk [PRO to collect the insurance]. (Roeper (1987: 268))
e. Here's a book [PRO_i to read to each other_i].

(Bach (1977: 147), cited in Higginbotham (1992: 79))

In NOC, PRO may bear a context dependent arbitrary reference (PRO_{arb}) and/or a generic reference (PRO_{gen}) close in meaning to the pronoun *one* as in (7)ab, violating the unique-antecedent requirement of OC. (7)c constitutes a long-distance control where the controller is not found in the immediately higher clause. Adjunct control such as in (7)de is often analyzed as falling under NOC; but this is not the across-the-board phenomena of adjunct control. The list is not meant to be exhaustive.

1.1.1. Not Identical but Not Disjoint

The present thesis focuses on complement control, such as (4) and (5), which has typically been subsumed under OC. However, since Landau (2000), attention to atypical or exceptional behaviors of complement control which violate OC criteria has grown significantly; researchers started to see that the reference of PRO is often “neither arbitrary nor fully deterministic” (Landau (2000: 1)). There seem to be quite a number of in-between cases which do not straightforwardly fall under OC nor NOC. The reference of PRO in some OC complement control environments and that of its alleged controller are not always identical, and yet, they are not completely disjoint.

For example, (8) exhibits partial control in which the reference of PRO constitutes a superset of the reference of the matrix subject *the chair*. (9) allows control shift; the controller is not uniquely determined in the way presupposed for OC; the controller may be the subject or the

object of the matrix clause. The same sentence, (9), also permits split control where the reference of PRO includes that of the matrix subject and object, again lacking a unique controller.

(8) The chair_i preferred PRO_{i+} to gather at 6.

(Adapted from Landau (2000: 5))

(9) Kim_i proposed to Sandy_j PRO_{ij/i+j} to do the dishes.

(Adapted from Rooryck (2000: 75))

We could simply classify them as NOC; but intuitively, they seem to be closer in nature to OC than to NOC. In (8) and (9), the reference of PRO is not completely arbitrary: (8) does not allow us to interpret PRO as a group of individuals not inclusive of the chair; neither does (9) permit PRO to refer to a plausible discourse topic, say David. We find discussions dealing with these phenomena in the earlier literature, but they had long been treated as exceptions to OC, or subsumed under NOC.⁷

Furthermore, implicit complement control, such as (10) below, cannot straightforwardly be classified into OC. The controller is left implicit, or at least not pronounced. However, the fact that PRO is understood to refer to the agent of the matrix predicate *decide* suggests its semantic similarity to OC. Although PRO lacks an antecedent, its reference is in some way uniquely determined.

(10) It was decided PRO to have dinner at 6. (Williams (1980: 215))⁸

In lexical semantic approaches to control, such as Farkas (1988), Culicover and Jackendoff (2001, 2006), and Jackendoff and Culicover (2003), the thematic or argument structure of the matrix predicate is assumed to be responsible for controller determination. For instance, Culicover and Jackendoff (2001) propose that the thematic role *Source* is to be identified as the controller of PRO for *promise*-type matrix predicates, while for *order*-type predicates, the role *Recipient* should be taken as the controller. Under such a framework, controller determination is not contingent on the syntactic position or representation of the controller argument; and this suggests that implicit control such as (10) is, at least semantically, generalizable to OC.

These exceptional patterns demand that we reconsider what really constitutes OC. Perhaps, a radical change in our view may be necessary. The assumption, often taken for granted in the research of OC, is that control is an antecedent-antecedee relation. This seems to be rooted

in the earliest approach to OC, Equi-NP deletion, under which the reference of the deleted subject was assumed to be identical to the reference of its antecedent. Now, we are looking at cases where, although not disjoint, PRO and its alleged controller have non-identical references. (10) even lacks a controller; yet, PRO is understood in a specific way. These pieces of information make dubious the basic assumption that control is an antecedent-antecedee relation.

1.1.2. Non-*De Se* Complement Control

There is another exception to the OC complement control view. These examples fall outside the definition of OC *not* for non-identity relations. They violate the *de se* requirement (3)e. Before I introduce examples of non-*de se* complement control, an illustration of what constitutes *de se* may be in order.

To my knowledge, it was Morgan (1970) that first discussed the obligatorily *de se* nature of some control constructions. His story helps us grasp the nature of *de se*:

...the baseball player Ernie Banks gets beamed, develops amnesia, and is taken to the hospital, where I am his doctor. He doesn't know his name. I, his doctor, know who he is, but I don't tell him. I observe his behavior over a period of time while he's in the hospital with no identity. During this time, he reads in the newspapers about a baseball player Ernie Banks. He decides he likes Ernie Banks, and would like him to leave Chicago and go to New York to play for the Mets. (Morgan (1970: 380))

The doctor wants to report this story to someone. Consider the two sentences below:

(11) Ernie Banks_{*i*} hopes that he_{*i*} will move to New York.

(12) Ernie Banks_{*i*} hopes PRO_{*i*} to move to New York.

The doctor has to choose (11), not (12), if he wants to make a truthful statement. In (11), *he*, understood to refer to Ernie Banks, allows at least two readings, *de se* and *de re*. Defining a *de se* expression is a huge challenge. I adopt Pearson's definition (2013: 3), which describes the notion in the most concise and comprehensive way:

(13) A sentence S reports an attitude *de se* only if its truth depends on the bearer of the attitude being aware that the individual whom the attitude is about is herself.

Capturing another notion *de re* indeed requires much more explanation. For the present purposes, it suffices if *de se* attitudes could be distinguished from any non-*de se* attitudes; but very roughly, one could have a *de re* attitude about someone (say α) if he is acquainted with α and can ascribe a property, or simply a description, uniquely to α .⁹

Now, although *he* in (11) could be read either *de se* or *de re*, PRO in (12) must be construed obligatorily *de se*. (12) is false with respect to the story, since this unfortunate baseball player, Ernie Banks, is not aware that he himself is Ernie Banks, and does not hope he himself will move to New York to play for the Mets. On the other hand, (11), which admits a *de re* construal, holds true.

Such obligatory *de se* nature of PRO has often been taken as one of the defining properties of OC as we saw in (3)e. However, some complement control cases, often subsumed under OC, do not require *de se* construals. For instance, (14) and (15) give rise to a non-*de se* reading, as very clearly presented in Landau (2015).

(14) Ernie_{*i*} managed PRO_{*i*} to avoid the draft (because he spent that decade in a coma).

(Adapted from Safir (2010), cited in Landau (2015: 22))¹⁰

(15) The transmission problem forced the car_{*i*} PRO_{*i*} to stop.

(Landau (2015: 22))

We seem to have two types of exceptions to OC. One violates OC for non-identity relations, and the other for non-*de se*.

1.2. Partial Control

Let us now focus on one of the non-identity relations, partial control. It is due to Landau (2000) that linguists now take partial control to be one of the core ingredients of complement control. Consider the following ((16) and (17) are adapted from Landau (2000: 5, 54) and (18) is from Pearson (2013: 301)):

(16) The chair_{*i*} preferred PRO_{*i*+} to gather at 6.

(17) Mary recommended to John_{*i*} PRO_{*i*+} to convene without her.

(18) John_{*i*} promised PRO_{*i*+} to move the piano without damaging it.

In (16), although the alleged controller *the chair* is singular, PRO must at least be semantically plural; the predicate *gather* in the complement is a collective predicate and requires a plural subject. Likewise, in (17), the collective predicate *convene* gives rise to this effect. In fact, collective predicates or expressions are not prerequisite for inducing a partial reading. If the context is properly set as in (18) where the piano would be too heavy for John to move it alone, a partial reading naturally arises without overt collective expressions. Without context, (18) remains ambiguous between partial and exhaustive readings.

Landau (2000) subsumes partial control under OC focusing on the fact that, in partial control, the reference of at least one locally c-commanding DP (i.e. an argument of the immediately higher clause) constitutes a subset of the reference of PRO. In contrast, PRO in non-obligatory control (NOC) may have completely disjoint reference from any other intrasentential DPs. Consider (19) and (20).

(19) It is dangerous for the babies PRO to smoke around them.

(Kawasaki (1993: 48))

(20) The boat was sunk PRO to collect the insurance. (Roeper (1987: 268))

The facts about partial control were already discussed in Wilkinson (1971) and there had been sporadic mentions of it in the literature (e.g. Williams (1980)), but it had gone mostly unnoticed as a widespread phenomenon of OC until Landau (2000).

How widespread is the phenomenon? According to Landau (2000), below are some predicates that allow partial control (21).¹¹ We will see more detailed lists later in this chapter (section 1.10).

(21) Factive predicates: *glad, hate, like, sad*

Propositional predicates: *assert, believe, say, think*

Desiderative predicates: *agree, hope, prefer, promise*

Interrogative predicates: *ask, find out, inquire, know*

On the other hand, some predicates do not seem to show partial control effects, including:

(22) Implicatives: *condescend, dare, force, manage*

Aspectual predicates: *begin, continue, finish, stop*

Modals: *have, is able, may, must*

Evaluative adjectives: *bold, kind, rude, silly*

1.3. Puzzle

We saw above that some instances of complement control do not fall under the traditional view of OC. Some violate the traditional definition for a non-identity relation, representatively partial control; others for allowing non-*de se* construals. The following questions arise:

- (23) a. What makes partial control available in complement control?
- b. What makes *de se* construal obligatory in complement control?
- c. Are there any common factors bringing about both partial control and *de se* effects?

Intriguingly, Landau (2015) reveals that there is a strong correlation between these two effects, obligatory *de se* readings and partial control: *de se* is obligatory for OC predicates that allow partial control (those in list (21)); *de se* is not obligatory for OC predicates that disallow partial control (those in list (22)). This predicts that (16) to (18) above allowing partial control must be read *de se* (or *de te* for (17)), and in fact they are construed as predicted. For (16) to be true, the chair must be aware that he himself will be included in the group of individuals who will preferably gather at 6 (*de se*). For (17) to be true, Mary needs to be aware that John is the addressee she actually made the recommendation or request to (*de te*). As to (18), John must be aware that he is one of the individuals who will move the piano. Importantly, those predicates that allow partial control always give rise to a *de se(te)* construal, even when there is no obvious partial control effect. Thus, (24) with *prefer* with an exhaustive reading is also obligatorily construed *de se*.

- (24) Mary_{*i*} preferred PRO_{*i*} to stay home alone.

Contrastingly, the predicates such as *manage* and *force* do not allow partial control ((25), (26)), and they admit non-*de se* readings ((27), (28), repeating (14), (15)).

- (25) * John_{*i*} managed PRO_{*i+*} to gather at 6.
- (26) * Mary forced John_{*i*} PRO_{*i+*} to convene without her.
- (27) Ernie_{*i*} managed PRO_{*i*} to avoid the draft (because he spent the decade in a coma).

(28) The transmission problem forced the car_i PRO_i to stop.

In (27), Ernie could not have been aware that he himself avoided the draft since he was in a coma, and in (28), the car just could not have a *de se* thought of its own. Interestingly, those predicates that allow partial control must always have [+human] PRO to be always read *de se*, while those that do not admit partial control allow [-human] PRO and *de se* is not required.

It seems that *de se* requirement and partial control are tightly connected, hardwired to each other. However, why this must be so has not been fully accounted for. What mechanism is at work so that when *de se* is required, partial control is admitted? Conversely, when *de se* is not required, why is partial control disallowed? These questions remain unsolved in the current literature.

1.4. Goal

The major goal of the present thesis is to provide an account for the above questions, and to shed light on the mechanism behind the tight connection between *de se* and partial control. The focus will be on complement control, which has traditionally been assumed to fall under OC.¹² The discussions in this thesis will be centered around what Landau (2000) calls Partial Control. A presupposition held all through the present study is that OC involves at least two distinct syntactic structures and derivations, as has already been widely assumed (Bianchi (2003), Grano (2012), Landau (2000, 2004, 2006, 2008, 2015, 2016ab, 2018), Pearson (2013, 2016), Sheehan (2012), Wurmbrand (2003)). One is called Partial Control (PC), and the other Exhaustive Control (EC). Empirical contrasts between PC and EC will be detailed in section 1.9. I also hold that PRO in PC and PRO in EC bear distinct internal structures and occupy distinct positions in the sentential structures. I assume late insertion (Halle and Marantz (1993), Marantz (1995)) so that PRO is not picked out from the lexicon for a numeration prior to syntactic derivations. Rather, PRO, a zero-morphology, is a structural and derivational consequence. How far we should go in pursuing the late insertion view may be controversial. However, pronouns in general including PRO are realizations of agreement (Ritter (1995)); they are among the top list of candidates for late insertion. If we are to presuppose two distinct structures and derivations for PC and EC, it is quite natural that the nullness of the subject arises from different reasons for PC and EC.

1.5. Are Partial Control and *De Se* Reducible to Binding, Movement, or Agree?

1.5.1. Binding

Accounting for PC in syntactic terms is a huge challenge. This is because it involves *vagueness*. I use the term *vagueness* here to contrast it to structural ambiguity. I assume that PC is a syntactic phenomenon; the challenge is to define the structure of PC so that it leaves room for vagueness. A typical kind of vagueness is observed, for instance in (16), repeated here as (29), where syntax only tells us that the reference of PRO includes the reference of *the chair*. What other individuals are included in the reference of PRO is left unspecified, and we have to depend on previous discourse or common ground knowledge to figure out who they are. I assume that there are no structural ambiguities between PRO_{*i*+} in (29) construed as referring to the chair, John and Mary versus PRO_{*i*+} referring to the chair, Sam and David; hence *vague*.

(29) The chair_{*i*} preferred PRO_{*i*+} to gather at 6.

Such vagueness is not easily reducible to anaphoric binding, such as (30).

- (30) a. John loves himself.
b. * John loves themselves.

The singular subject *John* cannot bind the plural reflexive *themselves*.

However, interestingly, there are certain instances of partial binding as in (31), as discussed in various literature including Partee (1989) and Rullmann (2004):

- (31) a. I_{*i*} told my wife_{*j*} we_{*i+j*} were late.
b. Every woman_{*i*} told her husband_{*j*} that they_{*i+j*} should invest in the stock market.

(Rullmann (2004: 163-164), slightly revised)

Nevertheless, insomuch as partial binding remains unaccountable within the framework of binding in its simplest formalization, coindexation and c-command (Chomsky (1981)), it cannot serve as a solution to PC. In fact, *we* in (31)a and *they* in (31)b both allow the inclusion of some unspecified individuals other than the referents of their binders, just like in partial control. I speculate that partial control and partial binding may ultimately be reduced to one system, but that remains a challenge for both theories of control and binding.

The obligatory *de se* nature of PC cannot be accounted for by simple reduction of control to binding, either. Consider the contrast between (32)a and b taken from Higginbotham (2010: 255):

- (32) a. John wants [PRO to eat the hamburger].
b. John wants [himself to eat the hamburger].

PRO in (32)a must be read *de se* with respect to John, but the bound anaphor *himself* in (32)b allows both *de se* and *de re* construals. For the *de re* construal of (32)b, imagine the situation where John wants the hungriest person to eat the hamburger, and John himself happens to be the hungriest person, but he is not aware of this fact. (32)b can be a true statement describing this situation while (32)a cannot. Variable binding does not support obligatory *de se* construals either. This point is discussed in Chierchia (1990), Percus and Sauerland (2003a), Schlenker (2011), and Higginbotham (2010). Consider (33)ab:

- (33) a. Every candidate_{*i*} hopes that he_{*i*} will be elected.
b. Every candidate_{*i*} hopes PRO_{*i*} to be elected.

He in (33)a can be bound and read *de re*. For the *de re* reading, think about a group of candidates. Some think *I should be elected*. Some others think *he should be elected* with *he* designating the best speaker who happens to be he himself, but they do not know this fact. The statement in (33)a is true in this situation, but (33)b is not. It is often considered that the contrast between *de se* and *de re* construals derive from the contrast between binding and coreference. The previous literature on *de se* attitude reports has revealed this assumption to be wrong with examples like (33)a (see Chapter 3, section 3.6).

Binding, both anaphoric and variable binding, does not seem to be accountable for partial control and *de se*.

1.5.2. Movement

Reducing control to movement as in Hornstein (1999) does not straightforwardly solve the vagueness issue, either. Observe (34), adapted from Landau (2003: 493):

- (34) * (We thought that) the chair_{*i*} appeared *t*_{*i*+} to be gathering once a week.

Assuming NP-movements in which the moved NP and its trace are non-identical seems to require major revisions to the theory. Although some instances of control, particularly EC, may be reducible to some form of movement as advocated in Grano (2012), accounting for phenomena like (29) by movement gives rise to many unwanted problems. I am not saying that these problems are insurmountable; they may be overcome by positing, say movement plus stranding as in Rodrigues (2008) (see Chapter 5, section 5.10). However, it always so appears that the movement theory in itself lacks explanatory power for various vague relations observed in PC, and that some additional mechanisms (e.g. stranding) are required for a full account.

The movement theory may account for the *de se* nature of PRO. For instance, as argued in Hornstein and Pietrosky (2010), the copy-and-merge approach to movement may work as a vehicle for obligatory *de se* construals in OC. Their basic argument is that the controller and the controllee being identical copies gives rise to an obligatory *de se* construal. However, if copy-and-merge necessarily brings about a *de se* reading, we need extra accounts that explain the non-obligatory *de se* nature of EC. What nullifies the obligatory *de se* effects in EC? To my knowledge, the movement approaches seem to lack an answer to this question.

1.5.3. Agree

Landau's Agree Theory of Control (ATC) (Landau (2000, 2004, 2006, 2008)) is specifically intended to capture the EC/PC distinctions. It is due to Landau's works that we began to see the duality of OC, and the possibility that PC complements may involve a larger structure than EC complements. In ATC, Landau argues that semantic plurality is made invisible when PRO agrees with the controller argument via the embedded C; this permits partial control in PC. In contrast, in EC, agreement is not mediated by C, prohibiting partial control. However, most crucially, partial control is not about singularity vs. plurality. Observe the following:

(35) The professor asked the students_{*i*} PRO_{*i*+} to move the piano.

The controller argument *the students* and PRO may both be plural, but still give rise to partial control. PRO may refer to the students and some others. The phenomenon as in (35) is at least not straightforwardly accountable by ATC.

ATC is not intended to capture the obligatorily *de se* nature of PC PRO, although it is due to Landau (2000) that we have come to be aware that PC involves a *de se* reading. In Landau's new theory, Two-tiered Theory of Control (TTC) (Landau (2015)), focus is placed on explaining *de se* in PC. Landau argues that *de se* in PC is a special case of *de re*. I will introduce TTC and compare it to my proposal in detail in Chapter 5, section 5.10. TTC accounts for *de se* in PC, but seems to lack a specific account for partial control. It is suggested that associative semantics may play some role, but this idea is not fully developed.

As such, we need a new theory that accounts for PC. Syntactic relations or operations often presuppose identity between two (or more) linguistic objects. Binding, movement, and also some previous theories to OC seem to assume an identity relation to be the default, and posit additional devices to capture partial-identity relations; but is this line of thought correct? We would want a simple syntactic account for relations that do *not* require stringent identity, but are not completely disjoint. In addition, the *de se* nature needs to be captured. What kind of system appropriately accounts for such relations?

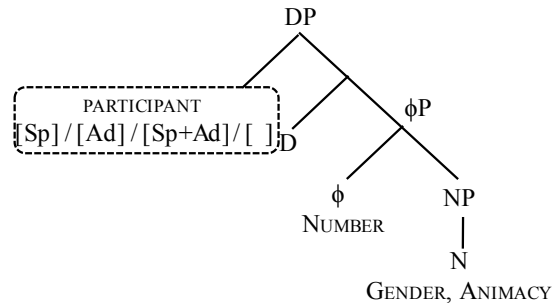
1.6. Proposal: Person and PC

Any language seems to already have the system that brings about just such phenomena: the person system. The first and second person pronouns almost universally give rise to associative plural semantics. The first person plural pronoun *we* does not necessarily designate plural speakers. It just includes the speaker in its reference. Neither does *you* necessarily refer to multiple addressees, but its reference just includes at least one of the addressees. The subset relation between, for instance, the speaker and the first person pronoun *we* is just like the subset relation that holds between the controller and PC PRO. The first and second person pronouns are said to be inherently associative (Cysouw (2003), Wechsler (2010), Harbour (2016)).

Also, the first and second person pronouns are typically read *de se/te*. In fact, *de se* attitudes are often described as a type of attitudes that would involve the first person pronoun *I* if the attitude holder were to express his/her attitudes directly. *De te* attitudes involve the type of attitudes the attitude holder would express using the second person *you*.

This thesis argues that PC, the structure permitting both partial and exhaustive control, is reducible to the person system. *De se* construals and partial control observed for PC PRO derive from the same structural reasons that give rise to *de se* readings and associative plurality for the first and second person pronouns. The common factors shared by PC PRO and the first/second person pronouns are the notions of the speaker (or author) and the addressee, the primitives of person indexicals. The present study proposes that these primitives are represented in the internal structure of PC PRO and the first/second person pronouns as in (36). This analysis builds on Harley and Ritter (2002) and Déchaine and Wiltschko (2002, 2009).¹³ Obviously, PC PRO may be first, second, or third person. I do not take the speaker/addressee primitives to be the exclusive properties of the first/second person pronouns. I will propose that certain instances of the third person pronouns, including what is known as Castañeda's *he**, also encode these primitives, and so does PC PRO.

(36)



Sp=Speaker (Author), Ad=Addressee

1.6.1. Evidence: Force and Person

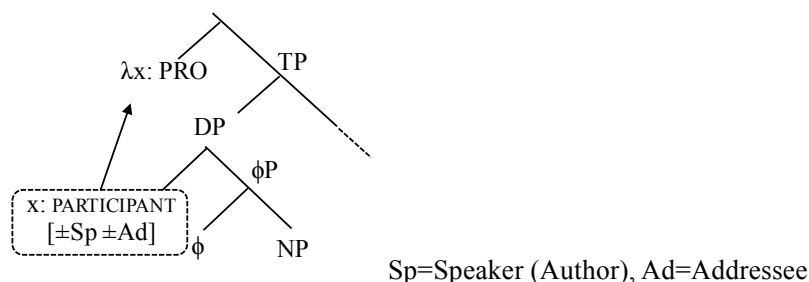
Evidence for the connection between PC PRO and the speaker/addressee primitives comes from Japanese PC complements, in which a force independent from the matrix force is overtly expressed (see Chapter 2). Some bear imperative morphology. Others occur with the intensitive or exhortative suffixes. Yet some others are optatives and promissives. The idea connecting person, force, and control builds on Fujii (2006, 2010) on Japanese and Madigan (2008) on Korean although my analysis departs from them in its implementations as will be discussed in Chapter 2.

Control aside, previous literature has shown that some forces such as imperative, promissive, and exhortative restrict the reference of the subject to be a certain set of individuals inclusive of the speaker or the addressee, or both (Nitta (1991), Hasegawa (2009, 2010)). Similar observations are made for Korean, for instance, by Pak (2004) and Zanuttini, Pak, and Portner (2012). The present proposal extends such assumptions to PC complements, and to languages beyond Japanese and Korean. Indeed, the restriction on the imperative force that its subject must include the addressee is a well-known cross-linguistic phenomenon.

1.6.2. PRO as a Relative Pronoun

It will be proposed that *de se* interpretations of PC PRO and the first/second person pronouns are brought about by movement: the movement of the PARTICIPANT element at Spec DP (36), to the clausal CP domain above TP (37) (Chapter 3).

(37)



This creates a self-ascriptive property out of the proposition denoting TP. Crucially, in the proposed system, PRO itself serves the role of the λ -abstractor, behaving much like a relative pronoun *who*; but PRO is not just specified as [+human] but as [\pm Sp, \pm Ad], much more specific than *who*. The analysis is based on previous proposals on *de se* attitudes including Chierchia (1990) and Percus and Sauerland (2003ab). Importantly, I assume that the above-mentioned forces such as the imperative denote a self-ascriptive property, bringing about a *de se* (or *de te*) construal both in root and embedded environments. Such view is in line with Portner (2004, 2007).

1.6.3. PRO as a Shifted Indexical

A crucial difference between PC PRO and the first/second person pronouns lies in the context against which their primitive speaker/addressee features are evaluated. While the primitives of the first/second person pronouns are indexed to the actual speech context, those of PC PRO are indexed to a reported speech, thought, or belief context. In this respect, PC PRO is comparable to shifted indexicals. This view converges with a line of thought pursued by various authors in the past decade or two (Bianchi (2003), Schlenker (2003b), Anand and Nevins (2004), Anand (2006)). They suggest that PC involves indexical or context shifting and that PC PRO behaves much like shifted indexicals in languages like Amharic (Schlenker (2003b)) and Zazaki (Anand and Nevins (2004)). I hold that the contrast in the morphologies, the zero-morphology of PC PRO and the overt forms of the first/second person pronouns, arise from the shift in contexts. I will return to the issue of nullness of PRO towards the end of this introductory chapter.

1.6.4. PRO as an Associative Plural

The present study adopts the analysis of Vassilieva (2005, 2008) on associative plurals. She assumes that the N head (as in (36)) of associative plurals designates a non-descriptive human group. The associative plurality of the first/second person plural pronouns such as the English *we* and *you* arise from such a structure. As mentioned above, the first/second person plurals do not refer to multiple speakers or addressees, but to a set of individuals inclusive of the speaker and/or the addressee. PC PRO bears a similar structure, allowing partial control. Split control (such as (9)) will also be accounted for by a natural extension of this analysis. Split control PRO is comparable to the first person inclusive *we* with [+Sp, +Ad] features.

1.6.5. Referentiality of PRO

This thesis argues that PC PRO is independently referential just as the first/second person pronouns are. Both PC PRO and the first/second person pronouns (in their canonical uses) are free variables with their semantic values assigned by the relevant context (Heim and Kratzer (1998), Heim (2008)). The reference of PC PRO and that of the alleged controller in the matrix clause often coincide, obeying the traditional OC definition. This is because the argument of the

matrix clause often designates the speaker or the addressee of the shifted context. However, their referential identity is not a syntactic necessity. The current proposal denies the direct syntactic relation between the alleged controller and PC PRO. Their frequent overlaps in reference can be accounted for by the selectional properties of the matrix predicate. The predicate selects certain complement forces, which in turn restrict the subject reference to be inclusive of the speaker/addressee of the shifted context. Implicit control as in (10), repeated here as (38), receives a natural account under this proposal.

(38) It was decided PRO to have dinner at 6.

I will say that the predicate *decide* selects the intensive force (not always, but the intensive is one of its options), whose subject always includes the speaker of the relevant context in its reference; in this case, the context of deciding. The options for the interpretation of PRO are reduced to those that include the speaker; both exhaustive and partial readings are available as predicted.

This part of my proposal is a radical departure from the previous literature, and it constitutes one of the most important contentions of the present thesis. The referentiality of PRO is dealt with in Chapter 4 (section 4.2), but I will briefly lay out my view at this outset of the thesis. What does it mean when the first/second person overt pronouns are referential? We often say, the first/second person pronouns *we* and *you* directly pick out their reference from the utterance context. I will perhaps use the same phrase such as *pick out* to describe referentiality; but it does not quite precisely capture the notion of referentiality. What personal pronouns, or the primitive person features such as the speaker and addressee do, is restriction. They just restrict the reference options to certain sets of individuals.

I presuppose that personal pronouns quantify over sets of individuals, not over individuals. Building on Harbour (2016: particularly 41-42), we could imagine a world with only five inhabitants, the speaker represented as *i* and the addressee indicated as *u*, and three other members, *o*, *o'* and *o''*. Here, I simply assume a single speaker *i* and a single addressee *u* (but see 5.4 for plausibility of multi-speakers or authors and multi-addressees). Obviously, in reality, we could have an unspecified number of other members who are neither the speaker nor the addressee. Under the five-inhabitant setting, we have thirty-one possible combinations of individuals (39). We might include an empty set \emptyset ; then we have thirty-two possible sets.

- (39) $\{\{\underline{i}, \{\underline{i}, o\}, \{\underline{i}, o'\}, \{\underline{i}, o''\}, \{\underline{i}, o, o'\}, \{\underline{i}, o, o''\}, \{\underline{i}, o', o''\}, \{\underline{i}, o, o', o''\}, \{\underline{i}, u\}, \{\underline{i}, u, o\}, \{\underline{i}, u, o'\}, \{\underline{i}, u, o''\}, \{\underline{i}, u, o, o'\}, \{\underline{i}, u, o, o''\}, \{\underline{i}, u, o', o''\}, \{\underline{i}, u, o, o', o''\}, \{\underline{u}\}, \{\underline{u}, o\}, \{\underline{u}, o'\}, \{\underline{u}, o''\}, \{\underline{u}, o, o'\}, \{\underline{u}, o, o''\}, \{\underline{u}, o', o''\}, \{\underline{u}, o, o', o''\}, \{o\}, \{o'\}, \{o''\}, \{o, o'\}, \{o, o''\}, \{o', o''\}, \{o, o', o''\}, \emptyset\}$

Of the entire set of possible reference sets, the first person pronouns restrict the reference options to the single-underlined sets in (39); the second person pronouns to the double-underlined sets; and the third person pronouns to the sets with no underline. The first eight sets fall under first person exclusive, and the next eight sets under first person inclusive. The first person inclusive reference is not an addition or sum of the speaker and the addressee, but a subset of the first person reference set. Having the addressee feature in addition to the speaker feature narrows down the reference options. Split control has been known for some time to involve an exhortative force (Fujii (2006), Madigan (2008)), but previous studies seem to have struggled in deriving the sum notion of the speaker and the addressee. The present proposal sees the notions of the speaker and addressee to be the features that restrict the reference options. Number features serve to further narrow down the options.

PC PRO does the same thing as the other personal pronouns. It does not pick out a specific set of individuals, but just restricts the possible set of sets of individuals. This accounts for the vagueness associated with PC. I hold that PC PRO is a personal pronoun without a number specification, so syntactically, both singletons and non-singletons are always options allowing both exhaustive and partial control. PC PRO also remains vague as to which specific set of individuals is to be included in the reference, as long as it includes a certain speech participant. The primitive person features (speaker/addressee) of PC PRO are evaluated with respect to the reported context. However, the work it does is comparable to the overt personal pronouns, and in this sense, I take PC PRO to be independently referential.

1.6.6. A Problem

One apparent problem is the fact that PC PRO appears to bear third person in most cases as revealed in (40) (Adapted from Landau (2015: 37)):

- (40) John_i planned [PRO_i to promote himself/*myself].

The reflexive *himself* in the complement bears third person and it seems to be bound to PRO. Why? Traditional approaches may say that it is because PRO is controlled by *John*. That is not what I am going to say. I will contend that although PC PRO is similar to first and second person, person agreement must shift with the context in English-type languages. A strong piece of evidence for this argument comes from the *de se he* or Castañeda's *he** in finite attitude complements (Castañeda (1966, 1967ab, 1968), Percus and Sauerland (2003ab)). It is obligatorily construed *de se* and semantically behaves like the first person *I*, but appears in the third person form.

The present study will illustrate that person specified as first, second, or third is not a primitive, but a derivative of syntax. Person is determined via agreement operations; the speaker and addressee representations are not always connected to the first person and the second person respectively (see 4.6, Chapter 4).

1.6.7. Subjecthood of PRO

The traditional views based on Chomsky (1981) explain the subjecthood of PRO by the PRO theorem: PRO is ungoverned. This theorem is derived from the assumptions that i) PRO is like an overt pronoun in that it does not have an antecedent within its clause or NP; but ii) PRO is also anaphor-like in lacking its own referential content. Then, PRO is a pronominal anaphor falling under both Conditions A and B of the binding theory, a blatant contradiction if PRO had a governing category (Chomsky (1981: 191)). As such, PRO can never appear in the object position.

Unfortunately, the present study cannot account for the subjecthood of PRO by PRO theorem because it does not assume ii) above. PRO is assumed to be referential just like the overt first/second person pronouns. I will argue instead that PRO is a realization of the subject-verb agreement; or more broadly put, it is a realization of the agreement between the subject and the verbal spine (verb-tense-complementizer). I propose that the subject shares an uninterpretable Tense feature (*u-T*) with T via agreement (as in Pesetsky and Torrego (2001, 2007)), which is then evaluated against the reported context. The context is assumed to be represented on the Fin(ite) head, the lowest head presupposed in Rizzi's (1997) split CP domain. The *u-T* on the

subject in agreement with Fin determines the nullness of PRO. As such, my proposal resembles the Null Case approach of Chomsky and Lasnik (1993) and Martin (2001) to some extent.¹⁴

1.6.8. Nullness of PRO

However, cross-linguistic research on control has revealed that the nullness of the subject is not a necessary ingredient of control. The subject of the complement may be overt but still referentially restricted in the way the English-type PC PRO is (see section 3.9 in Chapter 3). Again, I assume PC PRO to be an agreement realization; so, finite control (e.g. Hebrew; Borer (1989)) and control into inflected infinitives (e.g. Brazilian Portuguese; Modesto (2010)) where complement verbs are inflected for tense and agreement count as overt control. Assuming the Null Case for all kinds of subjects that exhibit referential restrictions comparable to English PC would miss important cross-linguistic generalizations.

In the present framework, PRO is not a lexical item picked out from the lexicon. The zero-morphology of PRO is a derivational consequence, a result of agreement. The agreement morphology is subject to much cross-linguistic variation; the subject form of PC complements also varies cross-linguistically for the same reason. In the next chapter, I will present some sets of Japanese PC data which show overt CP-level agreement morphology (Hasegawa (2009, 2010)). The agreement restricts the reference of the subject in a predictable way. In a way, then, they also fall under overt control.

1.7. Context and Agreement

The present thesis conceives of the Fin head (Rizzi (1997)) to be the locus of syntactic representation of the context, consisting of a tuple of coordinates such as speaker, addressee, time, and place. My proposal directly builds on Bianchi's (2001, 2003) notion of Logophoric Center and Sigurðsson's (2004ab, 2010) Λ_A , Λ_P , S_T , and S_L (Chapter 4), but the basic idea comes from Rizzi's (1997) original proposal that Fin bears some nominal agreement features. It is also suggested in Chomsky (2008) that ϕ -features originate in C and are inherited to T; advocates of speech act theory such as Speas and Tenny (2003) presuppose syntactic representations of the speaker and the addressee in the higher structural positions. In the semantic studies of context

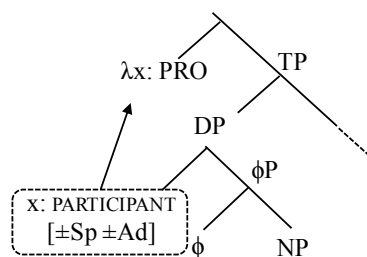
shifting as in Anand and Nevins (2004) and Schlenker (1999, 2003ab), a context parameter which represents a similar context tuple plays a key role.

Their arguments seem all connected and all appear to be describing phenomena sharing the same root. The present thesis is an attempt to present one plausible way of capturing such phenomena in PC and pronominal representations in general. A crucial difference between the above previous arguments and the present study is that the latter presupposes the syntactic representations of the speaker/addressee not only in the clausal peripheral domain, but also in the DP periphery. I assume that the interactions between the speaker/addressee representations in the clausal periphery and those in the DP periphery determine person agreement.

1.8. Reducing PC to No Control

What appears specific to PC seems reducible to common properties of the person system. The present thesis considers how *de se*, indexicality, and associative plural semantics are structurally brought about by drawing much attention to how the same properties arise in the first and second person pronouns. The proposal indeed amounts to saying that it is reducible to non-controlled structures. After all, in the current proposal, PC PRO is not controlled by the matrix argument. It behaves just like the first/second person pronouns, putting aside the contrast in contexts. Observe (41), repeating (37).

(41)



Sp=Speaker (Author), Ad=Addressee

The PARTICIPANT node of the subject DP in a way serves the role of the controller, determining its reference; it is also the source of the relevant forces and obligatory *de se* interpretations of PC PRO. The corresponding node within the first/second person pronouns plays similar roles in root contexts.

Although analyses for EC are almost entirely left to future study, at least for PC, we do not seem to need a construction-specific theory. Even if EC turns out to be something that requires an independent theory, my proposal for PC does not lead to complication. PC is simply subsumed under no control.

The organization of this thesis is as follows. Before we move on to the next chapter, the last section of this introductory chapter provides empirical background on the distinction of PC and EC. Then, in Chapter 2, I present Japanese data that reveal overt non-declarative forces in PC complements. I propose that English PC complements also bear parallel forces, and these forces play crucial roles in the interpretation of PRO. Chapter 3 focuses on the obligatorily *de se* nature of PC PRO. I will contend that PC complements denote a property, and that a property denoting clause is created by λ -abstraction over the PARTICIPANT node of the subject. I argue that PRO is a λ -abstractor and behaves like a relative pronoun. Chapter 4 considers the indexical nature of PC PRO. The first part of the chapter proposes that the internal structure of PRO is similar to that of the first and second person pronouns. This assures the indexicality of PRO. The rest of Chapter 4 considers how PC PRO ends up bearing third person although its internal structure is mostly first/second personal. Complementizer agreement is at play in person determination. Chapter 5 discusses the associative nature of PC PRO. It turns out that associativity is not only the source of partial control but also the source of certain types of control shift. The last chapter, Chapter 6, concludes this thesis with a summary of the discussion and important consequences.

1.9. Background: Partial Control (PC) vs. Exhaustive Control (EC)

This section provides a review on important empirical distinctions between two types of complement control. Attention to partial control has increased significantly since Landau (2000). This brought about an argument for the duality of complement control. Partial control is not just another peculiar exception to traditional OC, but a much more fundamental phenomenon that serves as a window to two distinct mechanisms of OC: Partial Control (PC) and Exhaustive Control (EC). The terminology is somewhat confusing, so clarification is in order. The present study distinguishes *Partial Control* or *PC* with capital letters from *partial control* with small

letters. I will use Partial Control or PC exclusively as a theoretical term referring to a mechanism of complement control, and use partial control to refer to an empirical and interpretative description of a subset relation that holds between the controller and PRO. The mechanism of PC allows a partial control reading but does not necessitate it. PC brings about either an exhaustive control reading or a partial control reading depending on the context. This is contrasted with the mechanism of EC, where a partial control reading is not an option. Certain control predicates are often called *PC predicates* implying that these predicates give rise to control effects via the mechanism of PC, and some others are called *EC predicates* for they are associated with the mechanism of EC. The lists in (21) and (22) exemplify PC predicates and EC predicates respectively under Landau's (2000, 2015) analyses (more detailed lists are in (60) and (61)).

Various recent studies presuppose that two types of control, PC and EC, involve two different syntactic structures and derivations (Bianchi (2003), Wurmbrand (2003), Sheehan (2012), Grano (2012), Pearson (2013, 2016)). The idea is due to Landau (2000 *et seq.*). Nevertheless, no agreement has been reached as to the specific characteristics of the structures and derivations for each type. Furthermore, precisely where to draw a line between PC and EC predicates remains somewhat controversial. However, the idea that complement control splits into two distinct systems appears to be well accepted in the literature.

The reason for distinguishing the two is that some predicates very often defy the definitions of the traditional OC criteria. On the other hand, some other predicates bring about control relations mostly consistent with the OC criteria.

We have already seen that PC predicates allow partial control. The contrast is clear with EC predicates in the following examples. (42)a and b repeat (16) and (17). These are adapted from Landau (2000: 54, 2013: 157):

(42) PC:

- a. The chair_i preferred PRO_{i+} to gather at 6.
- b. Mary recommended to John_i PRO_{i+} to convene without her.
- c. Mary_i wondered [whether PRO_{i+} to apply together for the grant].

(43) EC:

- a. * John_i managed [PRO_{i+} to gather at 6].

- b. * Mary forced John_i [PRO_{i+} to convene without her].
- c. * Mary_i is able [PRO_{i+} to apply together for the grant].

Intriguingly, the split defined by the availability of partial control is aligned with clusters of other empirical observations. PC predicates, those that allow both exhaustive and partial control, also allow split control, implicit control, and control shift, whereas EC predicates, those that permit only exhaustive control, prohibit these phenomena. It is due to Landau (2015) that we have come to acknowledge these correlations. We will see how PC predicates contrast with EC predicates in the availability of these effects.

1.9.1. Split Control

Split control is a phenomenon in which the reference of PRO includes the reference of both subject and object/oblique arguments of the matrix clause, as in (44)a.

- (44) a. John_i proposed to Mary_j [PRO_{i+j} to deal with themselves first].
- b. * John_i forced Mary_j [PRO_{i+j} to deal with themselves first].

(Adapted from Landau (2015: 78))

The predicate *propose*, often assumed to be a PC predicate, allows split control. In contrast, *force*, a canonical EC predicate, disallows this reading (44)b.

1.9.2. Implicit Control

Implicit control involves a structure where the controller matrix argument is not overtly expressed. (45) shows that implicit agent control is possible with PC predicates. The reference of PRO is taken to be the agent of *decide*, *agree*, or *prefer*, but there is no overt realization of the agent argument.

- (45) It was decided/agreed/preferred PRO to raise taxes again.

(Landau (2015: 71), slightly revised)

Traditionally, Visser's generalization had it that subject/agent control predicates do not passivize; (45) is a counterexample to this generalization. It is not easy to demonstrate unavailability of implicit agent control with EC predicates in English, because English allows very limited use of impersonal passives in general. Nonetheless, we could see the PC/EC contrast in other languages.

(46)ab are German and (47)ab are Russian. The sentences in (a) exemplify grammatical impersonal passives with PC predicates; those in (b) show degradation with EC predicates.

- (46) a. Ihm war versprochen worden [PRO Hans in die
 him was promised been PRO Hans into the
 Auswahlmannschaft aufzunehmen].
 select.team to.include

(Růžička (1983: 315), cited in Landau (2015: 70))

‘It had been promised to him to include Hans in the select team.’

- b. ?? Es wurde aufgehört Zigaretten zu rauchen
 it was stopped cigarettes to smoke

‘It was stopped to smoke cigarettes.’

(Peter Herbeck p.c., cited in Landau (2015: 71))

- (47) a. Bylo zaplanirovano/obeščano obnovit’
 was.Sg.Neut planned.Sg.Neut/promised.Sg.Neut to.renovate
 zdanie.
 building

‘It was planned/promised to renovate the building.’

- b. * Bylo načato/prodolženo/zakončeno
 was.Sg.Neut begun.Sg.Neut/continued.Sg.Neut/finished.Sg.Neut
 tratit den’gi na bespoleznye lekarstva.
 to.spend money on useless medicines

‘It was begun/continued/finished to spend money on useless medicines.’

(judgments by Olga Kagan p.c., cited in Landau (2015: 72))

Turning to implicit object/oblique control, (48) reveals that it is allowed with *say*, which is often conceived of as a PC predicate.

- (48) Bill said (to us_i) [PRO_i to be quiet]. (Landau (2015: 69))

It is hard to provide straightforward evidence that EC does not allow implicit object/oblique control since EC object controllers are mostly direct objects (e.g. *John forced him to leave*) and direct objects often resist omission for independent reasons (e.g. **John forced to leave*). However,

Landau (2015: 73, citing Słodowicz (2007: 130-133)) presents an intriguing set of data from Polish. In Polish, *namówić* ‘persuade’ in the perfective gives rise to an implicative construal, while *namawiać* ‘persuade’ in the imperfective does not. In English, implicative predicates such as *force* and *manage* typically fall under EC predicates, while non-implicatives such as *hope* and *tell* do not. Thus, we would assume that the implicative perfective *namówić* patterns with EC predicates whereas the imperfective *namawiać* behaves more like a PC predicate. The data below illustrate that our assumption is correct:

(49) (Imperfective: PC)

a. Stąd też będę gorąco namawiał
 therefore also Cop.Fut.1Sg warmly persuade.3Sg.M.
 do spędzenia tego czasu w gronie
 to spend.Noml.Gen Dem.Gen. time.Gen in circle.Loc
 rodzinnym.
 family.Loc

‘Therefore I will be persuading to spend this time with the family.’

(Perfective: EC)

b. **pro* namawie do spędzenia tego
 persuade.1Pl to spend.Noml.Gen Dem.Gen
 czasu w gronie rodzinnym.
 time.Gen in circle.Loc family.Loc

‘We persuaded to spend this time with the family.’

1.9.3. Control Shift

Next, we move on to the availability of the control shift. Lexical properties of control predicates are often assumed to be responsible for controller determination. For instance, predicates such as *persuade* are said to induce goal control, whereas those like *promise* give rise to agent control. However, in some instances, predicates that normally bring about goal control allow agent control, or vice versa. This situation is called control shift. (50) exemplifies that control shift is

much more felicitous with PC predicates such as *persuade* and *promise* than with EC predicates such as *force* and *compel*.

- (50) a. Mary_i was never promised [PRO_i to be allowed to leave].
b. Grandpa promised the children_i [PRO_i to be able to stay up for the late show].
c. Susi_i persuaded her parents [PRO_i to be allowed to leave early].
d. *? She_i forced/compelled her parents [PRO_i to be allowed to quit school].

(Landau (2015: 75-76))

1.9.4. [\pm human] PRO

There is another important contrast between PC and EC. While PC predicates permit only [+human] PRO, EC predicates allow [\pm human] PRO. First, (51)a-c with canonical EC predicates show that EC allows [-human] PRO (Landau (2015: 66)). (51)c repeats (15)/(28).

- (51) a. The key_i will serve/do [PRO_i to open the door].
b. The apartment_i failed [PRO_i to meet the federal housing quality standards].
c. The transmission problem forced the car_i [PRO_i to stop].

It is hard to prove PC prohibits [-human] PRO, because PC controllers are almost always [+human]. This fact probably already tells us something inherent to PC: PC predicates are attitude predicates. Landau (2015) exquisitely illustrates the contrast. Consider (52)a-c from Landau (2015: 67). Note that *guarantee* is considered to be a PC predicate.

- (52) a. The contract guarantees PRO to provide for all our needs.
b. * The contract guaranteed not to be violated.
c. The contract_i guaranteed that it_i would not be violated.

According to Landau (2015), inanimate controllers like *the contract* in (52)a may be understood to represent the [+human] author. This accounts for the grammaticality of (52)a where PRO is taken to refer to this author; the author is to provide for all our needs. However, the minimally contrasted (52)b, where the understood reference of PRO is the contract (the contract is not to be violated), brings about ungrammaticality. A semantically equivalent sentence without control such as (52)c is fully grammatical. (52)a is particularly interesting because it also falls under

implicit control. Even though the controller is not explicitly expressed, the notion of its author is somehow caught in the interpretation of PRO. In any event, (51)a-c and (52)a-c demonstrate that EC allows [-human] PRO but PC does not.

1.9.5. *De Se* Requirement

Lastly, the PC/EC contrast is also observed in the requirement of *de se* readings. This point has already been discussed. (53) repeats (12), appearing with a PC predicate *hope* requiring a *de se* construal. In contrast, (54) with an EC predicate *manage* allows a non-*de se* reading (from Safir (2010), cited in Landau (2015: 22)).¹⁵

(53) Ernie Banks_i hopes PRO_i to move to New York.

(54) John_i managed [PRO_i to avoid the draft] (because he spent that decade in a coma).

1.9.6. Partial and Exhaustive Readings in PC

Note again that PC predicates do not necessitate a partial control reading. The predicate *prefer* as in (55) (repeating (24)) under normal circumstances gives rise to an exhaustive reading. However, the fact that it allows a partial reading when the context (intra-sentential or extra-sentential) is right, as in (56) (repeating (16)), makes *prefer* a PC predicate. Both (55) and (56) are assumed to be instances of PC.

(55) Mary_i prefers [PRO_i to stay home alone].

(56) The chair_i preferred [PRO_{i+} to gather at 6].

In (57)a, adapted from Pearson (2013: 301), both an exhaustive reading and a partial reading are available depending on the extra-sentential context. That PC constructions have a partial reading option is what distinguishes them from EC constructions. The EC predicate *force* does not allow a partial reading ((57)b).

(57) a. Mary asked John_i [PRO_{i/i+} to move the piano].

b. Mary forced John_i [PRO_{i/*i+} to move the piano].

1.9.7. PC Predicates are Attitude Predicates

The overall picture we have is that in PC, the reference of PRO and that of its controller are more loosely connected than what the traditional view of OC has required. They need not be identical; partial control, split control, and control shift are possible. On the other hand, in EC, the control relation is more stringent. The referents of PRO and the controller must be identical. However, EC too falls outside the traditional definitions of OC in that it allows a non-*de se* and a non-human reading of PRO. It seems that OC was trying to capture two distinct mechanisms in one.

Landau (2000) originally accounted for the PC/EC divide with respect to their tense properties. PC complements are *tensed* in that the matrix/embedded tense mismatches are allowed; whereas those in EC are *untensed*, disallowing such tense mismatches.

- (58) a. * *Yesterday*, John managed PRO to solve the problem *tomorrow*.
b. * *Yesterday*, John began PRO to solve the problem *tomorrow*.
c. *Yesterday*, John hoped PRO to solve the problem *tomorrow*.
d. *Yesterday*, John wondered how PRO to solve the problem *tomorrow*.

(Adapted from Landau (2013: 160))

However, some researchers found this criterion to be insufficient (Grano (2012), Pearson (2013)). Landau (2015) restates the divide from a different perspective: PC complements express attitudes whereas EC complements denote nonattitudes.¹⁶ EC complements are not semantically opaque; an existential DP that refers to an object not existing in the actual world cannot appear felicitously in them ((59)a); it could occur without degradation in PC complements ((59)b). The examples are taken from Pearson (2013: 346-347, slightly revised); see 5.10.2 in Chapter 5 for a review on Landau (2015).

- (59) a. # John managed/dared/condescended to ride a unicorn.
b. John wanted/agreed to ride a unicorn.

1.10. What Distinguishes PC from EC?

Duality of complement control appears clear. Nevertheless, exactly where to draw a line between PC and EC remains controversial. Some predicates may belong to both PC and EC, bringing about interpretive ambiguities. In fact, in my view, the interpretation of PRO is not so much

dependent on the matrix predicates; nor is it the matrix predicate itself that brings about the PC/EC contrast. Rather, more relevant for the split are the structural differences of the complement clause. Under this perspective, the PC/EC divide regarding the matrix (embedding) predicates boils down to the contrast in their compatibility to occur with various structurally distinct complements. In the present framework, we have PC complements and EC complements; not PC predicates and EC predicates. Some predicates co-occur with a PC complement, while others with an EC complement; some may be compatible with both, and some others may resist both (non-control predicates).

This said, just for reference, I will provide the lists of predicates that have been presented as PC predicates, or analyzed to exhibit PC effects (e.g. tense mismatches, implicit control, control shift, split control, partial control, obligatory *de se/te*) and those assumed to fall under EC predicates for lack of PC effects; they mostly build on Landau (2000: 38, 2015: 6-7). The predicates with a star “*” are the ones not in his lists. Landau’s lists were not intended to be exhaustive in the first place; thus, addition of predicates does not necessarily mean contradiction with his analyses. The lists include predicates that do not allow control in English, but their semantically equivalent counterparts in other languages do.

(60) PC predicates:

affirm / afraid / agree / arrange / ask / aspire / assert / believe / choose / claim / contemplate / decide / declare / deliberate / demand / deny / dislike / eager / expect / find out / glad / grasp / guess / hate / hope / imagine / inquire / intend / interrogate / know / like / loath / mean / offer / order* / plan / prefer / promise / propose / ready / recommend* / refuse / regret / remember* / resolve / sad / say / signal / strive / suppose / tell* / think / unclear / understand / want / wish* / wonder / yearn*

(61) EC predicates:

avoid / begin / bother / compel / condescend / continue / dare / decline / fail / finish / force / forget / get / have (to)* / is able / make sure / manage / may / must / need / neglect / refrain / remember / resume / see fit / shocked / should / sorry / start / stop / surprised / try**

The predicate *try* at first glance seems to involve attitudes, but it is almost unanimously taken to be an EC predicate (Wurmbrand (2003), Grano (2012), Pearson (2016)). It patterns with aspectual/implicative predicates such as *start* and *manage* in not allowing a tense mismatch ((62)a). Such property is contrasted with typical PC predicates ((62)b).

- (62) a. Yesterday, John tried/began/managed PRO to leave (*tomorrow).
 b. Yesterday, John decided/wanted/planned PRO to leave tomorrow.

(Adapted from Grano (2012: 190))

Crucially, it resists partial readings.

- (63) a. * John gathered at noon.
 b. * John tried PRO to gather at noon.
 c. John wanted PRO to gather at noon.

(Adapted from Grano (2012: 19))

Another important observation comes from Pearson (2013, 2016) that *try* is in fact not an attitude verb (i.e. it does not quantify over centered worlds). It induces infelicity when its complement includes an existential DP, non-existent in the actual world. This patterns with typical EC implicatives.

- (64) a. # John tried/dared/condescended PRO to ride a unicorn.

(Adapted from Pearson (2013: 346-347))¹⁷

Wurmbrand (2003) and Grano (2012) focus on the fact that *try* is often a restructuring verb in various languages (e.g. allowing clitic climbing in Italian and long passives in German), which is often viewed as evidence for a smaller structure of EC complements. Implicatives such as *manage*, *succeed*, and *forget* also allow restructuring in languages like German, Dutch, Italian, Spanish, and Japanese, according to Wurmbrand (2003).

The predicates *tell* and *order* are not included in Landau's lists. However, he mentions *tell* and *order* as attitude verbs typically bringing about *de te* effects (65) (based on Landau (2015: 32)). Landau seems to take them to be PC predicates.

- (65) a. Mary told John_i that he_i should shut up.
 b. Mary told John_i PRO_i to shut up.
 c. Mary told John: "You should shut up."

- d. Mary told John: “John should shut up.” (Mary being unaware that her addressee is John.)

The PC construction (65)b must be read *de te*: it reports situations like (65)c but not (65)d. In contrast, (65)a with a finite complement may be construed either *de te* (65)c or *de re* (65)d, provided that *he* designates John. The predicate *order* also gives rise to an obligatory *de te* effect.

- (66) Mary ordered John_i PRO_i to stay home even if he doesn’t want to.

(Adapted from Landau (2015: 32))

The referent of the matrix object *John* does not need to feel obligated to perform the action expressed in the complement, as long as Mary identifies John as the addressee of the order she made. *Order* also allows a partial reading, although with some degradation. A partial reading appears to be more acceptable with the predicate *recommend*.

- (67) Mary_i recommended to/?ordered John_j [PRO_{j+} to convene without her].

(Adapted from Landau (2000: 54))

However, *recommend* and *order* disallow split control, contrasted to *propose*.

- (68) a. * Mary_i recommended to/ordered John_j [PRO_{i+j} to cooperate with each other].
 b. Mary_i proposed to John_j [PRO_{i+j} to meet at 6].

(Adapted from Landau (2000: 53-54))

This illustrates the very nature of predicates involving PC. They do not necessarily exhibit all the effects attributed to PC. What previous literature suggests is that PC predicates generally exhibit much more tolerance to non-canonical readings such as partial and split control and control shift.

The predicate *claim* is a controversial case. Landau (2000) subsumes it under PC predicates, but Pearson (2016) classifies it under EC predicates. Landau’s analysis comes from the following observation:

- (69) a. The chair_i claimed PRO_{i+} to be gathering once a week.
 b. Today, John_i claimed PRO_{i+} to have lost his car key last week.

(Adapted from Landau (2000: 30, 58))

A partial reading of PRO is allowed in both sentences; a tense mismatch is observed in (69)b.

Pearson (2016) agrees with Landau’s readings for these examples; yet, she argues that the

predicate *claim* on its own lacks the ability to license partial readings; partial readings arise from the overt tense and aspectual specifications of the embedded infinitives (i.e. *to be gathering*, *to have lost*). Observe (70), adapted from Pearson (2016: 20).

- (70) a. * (Mary said that) John claimed to live together.
b. Mary and John claimed to live together.

Without tense and aspectual markings, *claim* does not allow a partial reading (70)a. Note that a collective reading is possible in (70)b, where the controller (*Mary and John*) is plural so that there is no issue in the compatibility of *claim* and collective predicates. Under Pearson's proposal, partial readings are available when the time interval of the matrix event is *properly included* in the time interval of the embedded event; the former precedes the latter; or the latter precedes the former. According to Pearson, unlike most PC predicates, *claim* is essentially a simultaneous predicate and lacks semantic properties that license non-simultaneous readings in the complement. It relies on the tense and aspectual properties of the embedded event to license partial readings. For this reason, for Pearson, *claim* and also *pretend*, all fall under EC predicates.

Note that the predicate *remember* is in both lists. In its implicative use (71)a, it falls under EC predicates, and in its desiderative use (71)b, it is classified as a PC predicate.

- (71) a. John remembered to take out the garbage.
b. John remembers walking to school.

Intriguingly, in an experimental study on the availability of partial readings among various predicates (White and Grano (2014)), *remember* with a gerundive complement ranks the highest in tolerance to partial control readings, contrasted to *remember* with a *to*-infinitival complement with significantly lower tolerance.

There is an interesting connection between the behaviors of *remember* and that of *claim* in Pearson's observation. The key to bringing about a partial control reading lies in the complement. Tense and/or aspectual properties of the complement greatly affect the interpretation of PRO. This provides support for my view on the EC/PC split: it arises from the structural differences of embedded complements; the tense feature on PRO plays an important role (Chapter 4).

The predicate *expect* is not in Landau's PC list, but Pearson (2016) subsumes it under PC predicates. Issues surrounding *expect* are more complex than the others because it is both a control and raising predicate; but again, what distinguishes control from raising? As noted by multiple authors (Bresnan (1972), Pesetsky (1992), Wurmbrand (2014)), the ditransitive predicate *expect* allows three different structures. The sentence such as (72), taken from Wurmbrand (2014: 409), is three-way ambiguous.

- (72) a. John expected Mary_{obj} [PRO to leave].
 b. John expected [\emptyset _{for} [Mary_{Subj} to leave]].
 c. John expected Mary [t_{Subj} to leave].

(72)a involves an object control structure where *expect* conveys the meaning similar to that of *order*. PRO is said to be controlled by *Mary*. In (72)b, *expect* is construed similarly to predicates such as *require of* and *want*; the subject *John* requires of or wants the state of affairs in which *Mary* leaves. (72)c falls under what Wurmbrand calls true ECM structures; the complement expresses a belief held by *John* that the state of affairs in which *Mary* leaves will be true. Crucially, it is the structural difference that gives rise to interpretative ambiguity.¹⁸

Although determining which predicates are more compatible with EC and/or PC complements is a non-trivial issue, this is not the focus of the present thesis. I will explore the structural properties of PC complements, which allow various PC effects. Not much discussion on EC will be provided. However, deeper understanding of the defining nature of PC, the obligatory *de se* construal and the availability of partial control, should lead us to a deeper understanding of what is *not* EC. Hopefully, this piece of work will contribute to elucidating the nature of what has long been called *control*. There is no one system of control responsible for both PC and EC. The two involve completely distinct syntactic systems. The objective of this thesis is to argue that PC is reducible to the person system. At least part of what constitutes control phenomena seems accountable without a system specific to control.

A caveat on terminology. Most of the following chapters will be concerned with PC. Thus, PRO refers to PC PRO unless otherwise specified.

Chapter 2. Force in Control

2.1. Issue and Overview

This chapter considers the controller determination problem. The proposal in this chapter constitutes an important empirical basis for my argument in the rest of the thesis. I will show how person primitives that designate the speaker and the addressee of the context come to play the key roles in PC.¹

My research into controller determination issues started out with a very simple question: What allows us to interpret the complement clause *to leave* in (1) and (2) distinctively? Under the assumption that there is a covert subject PRO in the infinitival complements of these examples, the subject refers to the person John in (1), while its counterpart in (2) refers to Bill.

(1) John_i promised Bill PRO_i to leave.

(2) John ordered Bill_i PRO_i to leave.

On the surface, the two strings of words look very similar. Yet, a speaker of English, reaching a certain age, knows that the infinitival subject in each string has a distinct reference. In fact, I myself, a learner of English as a second language, have never had trouble interpreting them properly, and I do not remember learning how to do it in English class. Some effort was required in memorizing that some predicates such as *promise* and *order* may appear with *to*-infinitival complements while others such as *think* and *believe* may not. However, the interpretation of the null infinitival subject was so obvious that I had not even imagined this would become an issue in the study of language. I find this fact fascinating.

Far from obvious is the syntactic mechanism behind this. Half a century has passed since Rosenbaum's (1965, 1967) seminal works involving null complement subjects within the framework of generative syntax. We have seen significant empirical and theoretical developments in this area due to continuous endeavors on the part of linguists. However, no agreement has been reached, in syntactic terms, regarding how the null subject comes to refer to what it does even in some of the most canonical OC examples like (1) and (2).

The vast majority of studies concerning this issue assume that OC control relations hold between the null infinitival subject and its antecedent; the former lacks its own referential

capacity, and thus depends on the latter for its reference. Simply put, OC control relations are often taken as DP-DP relations. To describe such relations, we say that the subject or the object of the matrix clause *controls* the null subject PRO, although depending on the theory one is committed to, the null subject is perceived as *pro* (as in Borer (1989)), NP-trace (as in Hornstein (1999)), or something else (e.g. *e* as in Koster (1984) to be free of theoretical presuppositions). Within such a framework, (1) falls under *subject control* and (2) *object control*, and the question posited at the outset concerns the mechanism of *controller determination*. This issue also pertains to attributive views of control, in which the infinitival complement is assumed to denote a property, either directly (Dowty (1985)) or via an operator (Chierchia (1990)). They take control relations to be DP-VP or DP-CP relations. Even for these attributive views, we would still have to ask which matrix argument is designated to have the property denoted by the complement clause. Various theories have been presented to address this issue, but it remains mostly unsettled.

Views that take control to involve DP-DP relations or DP-VP/CP relations are mostly rooted in the observation of well-behaved OC cases where the reference of one of the matrix arguments is fully identical with the reference of PRO or the property bearer. The OC criteria require PRO to be controlled by a unique, local (i.e., appearing in the immediately higher clause), and c-commanding controller. However, we have seen in Chapter 1 that PC allows various instances of non-well-behaved or *atypical* complement control patterns. PC permits split control, partial control, control shift, and implicit control.

Such observations make the DP-DP or DP-VP/CP assumptions dubious particularly for PC. We perhaps need a new perspective in understanding the phenomena. The facts from examples like (1) and (2) only tell us that PRO refers to the person John or Bill, and the same person is also referred to by one of the matrix arguments. Thus, pre-theoretically, we do not have to confine ourselves to the assumption that the covert element PRO is referentially dependent on another overt element. We have more logically plausible options. We could assume that the direction of dependency is the opposite; the reference of the matrix argument may be dependent on PRO.² We might also posit an operator somewhere in the structure; the operator might bind both the matrix argument and PRO at once. Or, we could even say that both the matrix argument

and PRO are independently referential, and in many cases, they turn out to refer to the same individual. I do not mean to be exhaustive here. There may be even more plausible alternatives that deserve serious consideration.

The present study pursues the third alternative just mentioned above. PRO has its own referential capacity and does not depend on the matrix argument for its reference (see Chapter 4, section 4.2 or Chapter 1, section 1.6.5). Having a zero-morphology does not necessarily mean referential dependence. A zero-morphology contrasted with a pronounced form may fully represent positive referential values. I argue that PRO is as referential as the overt first and second person pronouns such as the English *I*, *we*, and *you*; the contrast between the overt first/second person pronouns and PRO is that the former picks out certain sets of individuals from the utterance context whereas the latter does so from the shifted or reported context (see section 4.4 in Chapter 4). The nullness of PRO arises from its interactions with T and C. Then, we might be able to come up with a system in which even though the two linguistic elements are independently referential, they are *somehow* made to refer to the same individual in most cases of complement control, but in other cases, the alleged controller and PRO do not have identical references (see Chapter 1). This chapter is dedicated to explaining *how* this may be achievable; but it may require the entire thesis to make such an argument convincing.

Against the widely-held view that OC control relations are DP-DP or DP-VP/CP relations, the present proposal will argue that at least PC relations are V-CP relations, and that the notion of the controller DP is dispensable in capturing the mechanism of PC. In PC, the controller DP does not need to be syntactically represented in the sentence because the complement CP has its own referential property represented in PRO. It does not depend on another DP for its reference. I maintain that the complement CP has its own force distinct from that of the matrix clause. In some types of clauses, the reference of the subject is restricted to include a certain participant of the speech context. The fact that the subject of the imperative always includes the addressee is most well-known. Similarly, the reference of PRO may be restricted in accordance with the clausal force. I argue that the matrix predicate and the force of the complement are in a selectional relationship. This relationship assures the loose association we observed above between the matrix clause and the interpretation of PRO in PC.

2.2. Previous Literature on Force and Person

2.2.1. Pak (2004), Pak, Portner, and Zanuttini (2004, 2008), Zanuttini, Pak, and Portner (2012)

My discussion in this chapter builds on the previous studies that have greatly contributed to clarifying the connection between force and person. The analyses of Pak (2004), Pak, Portner, and Zanuttini (2004, 2008), and Zanuttini, Pak, and Portner (2012), mainly based on Korean, served as a breakthrough in this area of study. Their proposals extend to the general system of the imperative and other related clause types in various languages.³

First, they have allowed us to see the connection between force and person beyond the imperative. For instance, in Zanuttini et al. (2012), they find that the subject reference is restricted to a group inclusive of the speaker in the promissive, and to a group inclusive of both the speaker and the addressee in the exhortative, just like the imperative subject is restricted to a group inclusive of the addressee.

Second, the above observations have led them to effectively show that the imperative, the promissive, and the exhortative are closely related to one another; these clause types fall under a single *meta* clause type, dubbed as a *jussive* clause. Under this view, most fully explicated in Zanuttini et al. (2012), the force-person connections are captured in a systematic manner. They propose that the particles *-la* (imperative), *-ma* (promissive), and *-ca* (exhortative) in Korean are realizations of person on the *jussive* head, located in between T and C. This head bears person features, which are responsible for restricting the reference of the subject. According to Zanuttini et al. (2012), the jussive head enters the derivation with the interpretable person value [*person*: 1] in the promissive, [*person*: 2] in the imperative, and [*person*: 1 \oplus 2] in the exhortative, corresponding to first exclusive, second, and first inclusive respectively.

Third, from the beginning of their studies in this line, they have been presenting examples of jussive clauses in embedded contexts. Pak (2004), for instance, already presented data similar to (39) (in section 2.4, later in this chapter), which constituted counterexamples to a then widely-accepted view that imperatives do not embed. Such observations have always been a support to my approach to control. Indeed, Madigan (2008) builds on Pak (2004) in his discussions on split control in Korean and English. The present

study also benefited from Madigan's observation that split control involves exhortative embedding.

Lastly, their proposal of the jussive head illustrated that there may be an agreement relation distinct from agreement that holds between the subject and T. The proposed jussive agreement is generalizable to all languages accounting for the cross-linguistic restrictions on the imperative subject. It applies to the target language irrespectively of whether it is a null-topic language (e.g. Korean and Japanese), *pro*-drop language (e.g. Italian), or non-null subject language (e.g. English). Under their system, the null-subject phenomena of the imperative is taken to arise from an independent system of jussive agreement between the jussive head and the subject; this is allowed when T does not bear person features and raises to the jussive head, together forming the T-jussive head; a consequence of such agreement is semantic binding of the subject by the jussive head bearing person feature values. Their proposal also bears significance in drawing linguists' attention to a type of person agreement in a language like Korean, which had been assumed to lack person agreement.

As will be discussed below, my proposal departs from theirs in how person, defined in terms of first, second, and third, is perceived in relation to more primitive notions of the speaker and the addressee. Also, our assumptions on how person restrictions arise are crucially different. They assume that restrictions arise from the jussive head above T; but I will maintain that they arise from the PARTICIPANT features syntactically represented inside the null subject. However, you will see that my observations below on Japanese PC complements and root imperatives, promissives, and exhortatives, and my entire proposal which builds on them, owe heavily to the analysis of Zanuttini, Pak and Portner.

2.2.2. Hasegawa (2007, 2009, 2010)

Hasegawa (2007, 2009, 2010) focuses on a variety of null-subject phenomena, which can be explained only in relation to the clausal force, or modality. Her proposals have helped me build the very basis of my discussion on the Japanese PC complements and the view that there is CP level agreement distinct in nature from IP or TP level ϕ -feature agreement.

The most important part of her discussions that I adopt is that nullness of the subject of certain clause types derives from a mechanism distinct from *pro*-drop or topic-drop phenomena; this view is in accordance with the proposal set forth in the works of Pak, Portner, and Zanuttini. Although Japanese is known to be a topic-drop language, the null subject in certain clauses including the imperative and the exhortative (the volitional, in Hasegawa's terminology) is allowed due to the presence of a head or multiple heads in the CP domain; these heads agree directly or indirectly with the subject. Hasegawa (2007) proposes that the Mod(ality) head is responsible for such agreement; in Hasegawa (2009, 2010), Force and Fin (as in Rizzi (1997)) work together to bring about the proposed type of agreement.

Crucially for the present thesis, Mod or Force bears a person feature such as +speaker or +addressee in her system. The +speaker on Mod/Force is proposed to account for various phenomena including the first person null subjects in Japanese main clauses, which she holds to arise independently from topic-drop phenomena; the speaker orientation of the subject in the Japanese *V-te kureru* constructions; the restrictions of the subject reference to the speaker involving some Japanese predicates such as *itai* 'hurt,' *kowai* 'be fearful of,' and *hosii* 'want'; and also the English subject-drop in a diary-style informal writing. In Hasegawa (2009, 2010), the +speaker feature on Force is responsible for the subject reference restrictions to the speaker in the volitional clauses, realized with the special morphology *-masyoo*. It is a polite form of what I analyze to be an exhortative suffix, *-(y)oo*, in the discussion below. The Mod/Force head may also bear the +addressee feature, giving rise to the reference restriction on the subject to the addressee in the imperative, not only in Japanese but also in English and beyond. Importantly, she argues that although Japanese is a language known to lack the IP level ϕ -feature agreement, it exhibits the CP level agreement involving the speaker or addressee features; it is for this type of agreement that allows, but not requires, the subject to be null in Japanese imperatives and volitionals; and the same system also allows, again but not requires, the English null imperative subject.

I will propose that the speaker/addressee features originate inside the null subject of the imperative and the related clause types; this view contrasts with Hasegawa's. However, without saying, the present proposal and the observations below have benefited greatly from her

studies, particularly in coming up with the notion of the CP level agreement and the primitive notions of person in such agreement.

2.2.3. Nitta (1991), Moriyama (2000), Adachi (2002)

It is also important to note that my observations regarding the connection between force and person in Japanese owes greatly to traditional language studies on Japanese including Nitta (1991), Moriyama (2000), and Adachi (2002). Many examples from their studies will be shown in the discussion below (section 2.7). In the early 90s, Nitta (1991) already presented the connection in an organized way. Under his typology, the clause types that I focus on all fall under *utterance-communication modality* (*hatuwa-dentatu no modaritii*); they function to directly communicate the speaker's attitudes (including those towards his addressee) at the time of utterance.

For instance, Nitta (1991) observes that the subject is restricted to the second person in the imperative (*meirei*) involving forms like *-kudasai* and *-na*; the subject of the exhortative (*sasoi-kake* with *-masyoo*) is restricted to the first and second person (or perhaps he means to say the first person inclusive); and the subject of the intensitive (*isi* with *-(y)oo* or *-masyoo*) and the optative (*gamboo* with *-tai*) restrict the subject to be the first person. Although he uses the terms such as the first and second person, his intentions that they actually designate the speaker and the addressee of the utterance are clear.

Furthermore, my observation on the promissive use of *-(r)u* is very much dependent on Nitta (1991), Moriyama (2000), and Adachi (2002). As a native speaker of Japanese, I had intuitively thought that *-(r)u* could be used to communicate the promissive force in addition to its well-acknowledged nonpast uses, and presented such intuitive observation in Matsuda (2015ab). The above studies show very clearly that the *-(r)u* form could be used to notify others of the speaker's commitments, which I take to correspond to the promissive force discussed in Pak, Portner, and Zanuttini's studies on Korean. The traditional Japanese literature served to confirm my intuitive analysis on *-(r)u* and develop it further.

Lastly, these studies make a clear distinction between the presence and absence of the addressee in the utterance context. Such distinction has allowed the present study to distinguish

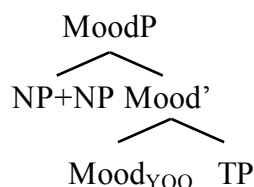
between the intensitive from the promissive and the exhortative (see section 2.7 for related discussions) in syntactic terms. The observation bears even greater significance to the study of the person system; the person system is truly built around the context. For instance, when no addressee is present in the context (e.g. in the context of self-thinking), we do not have the second person, and the entire person system is reduced to the first person and the third person within such contexts (see section 2.7.6 for further discussions).

2.2.4. Fujii (2006, 2010)

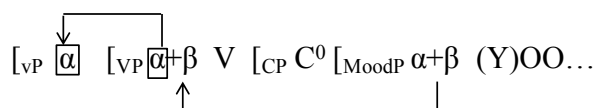
The underlying idea of the present study that control complements bear certain forces, associated with person directly comes from Fujii (2006, 2010). My observation presented below is not new at all, although my analysis will be quite different from Fujii's; Fujii adopts movement analysis.

Fujii proposes that the embedded complements in control project MoodP below CP. Depending on the mood represented on the Mood head, an NP that refers to a certain participant of the reported speech moves up to the specifier of this head from its base position. For embedded imperatives, an NP that corresponds to the addressee of the reported speech moves up to Spec MoodP of the embedded complement; then it further raises to the object position of the matrix clause; such movement brings about object control. In embedded exhortatives, which give rise to split control, two NPs referring to the speaker and the addressee of the reported speech are conjoined at Spec MoodP as in (3). As shown in (4), one of the conjuncts, indicated as β , raises to the indirect object position of the matrix V to check its θ -role, pied-piping the other conjunct α to the same position; α then moves to Spec vP, where the external θ -role of v is checked.

(3) Fujii's Analysis on Exhortative MoodP (Fujii (2006: 133))



(4) Fujii's Analysis on Split Control (Fujii (2006: 133))



Fujii analyzes the patterns involving the controlled mood constructions to be as (5).

He indicates the null subject as Δ , but I replaced it with PRO:

- (5) a. $NP_i NP_j [_{CP} PRO_j \dots Mood^0 C^0]$ say/order (imperative)
 b. $NP_i [_{CP} PRO_i \dots Mood^0 C^0]$ think/decide (intensive)
 c. $NP_i NP_j [_{CP} PRO_{i+j} \dots Mood^0 C^0]$ say/propose (exhortative)
 d. * $NP_i NP_j [_{CP} PRO_i \dots Mood^0 C^0]$ V (promissive)

(Adapted from Fujii (2006: 127))

(5) looks very much like my observation, to be presented below ((7)' to (11)'). Indeed, I did get the idea from (5). However, Fujii assumes that there is no promissive morphology in Japanese, contrasted to my view in which *-(r)u* is treated as a promissive morpheme. Subject control across object as in *John promised Mary to leave* is unaccountable under Fujii's MoodP framework; but that is not so big a problem. In fact, he argues that the lack of Japanese promissive morpheme in itself provides strong support for the movement theory. The *promise*-type subject control violates the minimal distance principle (MDP; Rosenbaum (1967), Hornstein (1999)), which is the core backbone of the movement theory. It basically says PRO has to be controlled by the closest c-commanding DP. Thus, for Fujii, the gap in the promissive morphology in Japanese is an MDP effect. My proposal assuming the *-(r)u* promissive morpheme in Japanese departs from his in this respect. According to Fujii, the MDP is not violated in split control since the subject and the object of the matrix clause together control PRO, and PRO can move to the closest argument position one by one as in (4).

Fujii proposes that the English *promise*-type subject control complements correspond to the nominalized *-koto* complements in Japanese as in (6).

- (6) Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik-u-koto]-o
 Tokiko-Top Takuya-Dat [university-to go-Nonpast- C_{koto}]-Acc
 yakusokusi-ta.
 promise-Past
 'Tokiko promised Takuya to go to university.'

The predicate *yakusokusuru* ‘promise’ assigns Objective Case to the *-koto* nominalized complement; he analyzes the Dative-marked DP, *Takuya-ni*, to be a PP; it does not c-command PRO, not constituting a violation of the MDP.

I do not adopt the movement approach, so that violations to the MDP will not be problematic for my theory. The reason I do not see control as movement is that, under such framework, partial control and implicit control which constitute the core phenomena of PC cannot be accounted for, at least not straightforwardly. The movement approach may account for split control as illustrated by Fujii, but PC also allows split partial control, which seems not readily accountable under the movement theory. Importantly, the exhortative subject does not refer to the sum of the speaker and the addressee (see Chapter 1, section 1.6.5).

This said, the movement approaches and my analysis also bear some similarities in that both assume control to arise from the complement. Both hold that there is some movement of the complement subject behind control. However, in mine introduced below, the movement stops at the clausal edge; whereas in Fujii’s proposal and in the movement theory in general, it moves all the way up to the matrix argument position.

2.3. Overt Force in Japanese

This section presents some sets of data that reveal the existence of independent force in control complements. In particular, I draw on Japanese data, which show overt force morphology in the complement. It appears that some control complement clauses have an independent force distinct from that of the matrix clause. Interestingly, certain correlation is observed between matrix predicates and complement forces, and also between complement forces and control patterns.

Consider the following set of data. The predicate of the embedded clause in each sentence appears with a distinct suffix. Each matrix predicate semantically corresponds to a typical English PC predicate.

- (7) Tokiko_i-wa [PRO_i daigaku-e iki-tai-to] nozom-da.
Tokiko-Top [university-to go-Opt-C_{to}] hope-Past
‘Tokiko hoped to go to university.’

- (8) Tokiko_i-wa [PRO_i daigaku-e ik-oo-to] kime-ta.
Tokiko-Top [university-to go-Int-C_{to}] decide-Past
'Tokiko decided to go to university.'
- (9) Tokiko_i-wa Takuya_j-ni [PRO_j daigaku-e ik-e-to] meireisi-ta.
Tokiko-Top Takuya-Dat [university-to go-Imp-C_{to}] order-Past
'Tokiko ordered Takuya to go to university.'
- (10) Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik-u-to] yakusokusi-ta.
Tokiko-Top Takuya-Dat [university-to go-Prm-C_{to}] promise-Past
'Tokiko promised Takuya to go to university.'
- (11) Tokiko_i-wa Takuya_j-ni [PRO_{i+j} daigaku-e ik-oo-to] teiansi-ta.
Tokiko-Top Takuya-Dat [university-to go-Exh-C_{to}] propose-Past
'Tokiko proposed to Takuya to go to university (together).'

What I focus on here is the suffix attached to the embedded predicate *iku* 'go.' We see *-tai* in (7), *-(y)oo* in (8), *-e/ro* in (9), *-(r)u* in (10), and *-(y)oo* in (11). The suffix *-tai* is a manifestation of the optative force; *-e/ro* the imperative; and *-(r)u* the promissive. In the present study, I assume the *-(y)oo* suffix in (8) and the phonologically identical suffix in (11) to be two distinct morphemes expressing different types of force: *-(y)oo* in (8) manifests the intentive force and *-(y)oo* in (11) the exhortative force. The distinction for two *-(y)oo* realizations here, however, is meant for clarification purposes. The identical morphologies are not accidental. As we will see, the intentive *-(y)oo* and the exhortative *-(y)oo* both restrict their subject reference to include the speaker of the relevant context (see (89) in section 2.7.6 below).⁴ Note also that the suffix *-(y)oo* used as realizations of both for intentive and exhortative forces should not be confounded with *-yooni*. *-Yooni* has received various treatments in the previous literature; for instance, it is analyzed as a subjunctive complementizer in Uchibori (2000) or as a different-subject marker as in switch reference in Watanabe (1995). Due to its wide range of uses, I am unable to pin down its nature under the proposed framework; but see section 2.5 for some discussion on *-yooni*. Importantly, some of the matrix predicates in (7) to (11) also occur with *-yooni* and *-koto* complements; just like, say, the English *hope* occurs with *for*- and *that*-complements as well as *to*-infinitival complements, the Japanese *nozomu* 'hope' is compatible with *-yooni*, *-koto*, and *-tai*

complements. I just focus on the above types of complements ((7) to (11)) in the present thesis because their control behaviors are most comparable to the English control complements. Again, see section 2.5 for my assumptions on complement selection.

In any event, the above data ((7) to (11)) reveal that each sentence, being a declarative itself, has a complement clause inside it with an independent force, as illustrated by their skeletal structures in (7)' to (11)' corresponding to (7) to (11). Intriguingly, the control pattern (subject, subject across object, object, or split control) seems to correlate with the complement force.

- (7)' [Decl. *hope* [Opt.]] => subject control
 (8)' [Decl. *decide* [Int.]] => subject control
 (9)' [Decl. *order* [Imp.]] => object control
 (10)' [Decl. *promise* [Prm.]] => subject control across object
 (11)' [Decl. *propose* [Exh.]] => split control

Below are some additional Japanese data with different predicates exhibiting control effects. They have a complement appearing with one of the above force morphologies, displaying a respective control pattern.

- (12) Tokiko_i-wa [PRO_i daigaku-e iki-tai-to] segam-da/omot-ta/negat-ta.⁵
 Tokiko-Top [university-to go-Opt-C_{to}] beg/think/wish-Past
 'Tokiko begged/ *lit.* thought/wished to go to university.'
- (13) Tokiko_i-wa [PRO_i daigaku-e ik-oo-to] ketuisi-ta/omot-ta/kessinsi-ta.
 Tokiko-Top [university-to go-Int-C_{to}] make mind/think/make mind-Past
 'Tokiko made up her mind/*lit.* thought/made up her mind to go to university.'
- (14) Tokiko_i-wa Takuya_j-ni [PRO_j daigaku-e ik-e-to] meiji-ta/sijisita/it-ta.
 Tokiko-Top Takuya-Dat [university-to go-Imp-C_{to}] order/instruct/say-Past
 'Tokiko ordered/instructed/told (*lit.* said to) Taro to go to university.'
- (15) Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik-u-to] tikit-ta/sengensi-ta/it-ta.
 Tokiko-Top Takuya-Dat [university-to go-Prm-C_{to}] vow/pledge/say-Past
 'Tokiko vowed to/pledged to/promised (*lit.* said to) Taro to go to university'

- (16) Tokiko_i-wa Takuya_j-ni [PRO_{i+j} daigaku-e ik-oo-to] sasot-ta/it-ta.
Tokiko-Top Takuya-Dat [university-to go-Exh-C_{to}] ask/say-Past
‘Tokiko asked/asked (*lit.* said to) Takuya to go to university (together).

Crucially, sentences sound severely degraded and may even be judged ungrammatical, when the matrix predicate appears with a complement with a *wrong* force. Observe the following:

- (17) * Tokiko_i-wa [PRO_i daigaku-e ik-e/oo/u-to] nozom-da.
Tokiko-Top [university-to go-Imp/Exh or Int/Prm-C_{to}] hope-Past
Intended: ‘Tokiko hoped to go to university.’

- (18) * Tokiko_i-wa [PRO_i daigaku-e ik(i)-tai/e-to] kime-ta.
Tokiko-Top [university-to go-Opt/Imp-C_{to}] decide-Past
Intended: ‘Tokiko decided to go to university.’

- (19) * Tokiko_i-wa Takuya_j-ni [PRO_j daigaku-e ik(i)-tai/oo/u-to]
Tokiko-Top Takuya-Dat [university-to go-Opt/Exh or Int/Prm-C_{to}]
meireisi-ta.
order-Past
Intended: ‘Tokiko ordered Takuya to go to university.’

- (20) * Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik(i)-tai/e-to] yakusokusi-ta.
Tokiko-Top Takuya-Dat [university-to go-Opt/Imp-C_{to}] promise-Past
Intended: ‘Tokiko promised Takuya to go to university.’

(17) reveals that the predicate *nozomu* ‘hope’ is incompatible with imperative, intentive, exhortative, or promissive complements. In (18), we see that *kimeru* ‘decide’ does not allow an optative or imperative complement. As in (19), *meireisuru* ‘order’ with optatives, exhortatives, intentives, or promissives bring about ungrammaticality. Lastly, as in (20), *yakusokusuru* ‘promise’ is ungrammatical with an optative or imperative complement.

The data from (7) to (20) suggest that a certain selectional relationship holds between the matrix predicate and the complement force. However, this relationship does not appear to be a biunique, one-to-one relationship. For example, although the predicate *yakusokusuru* ‘promise’ often occurs with a promissive complement, it also marginally allows an exhortative as in (21).

- (21) ? Tokiko_i-wa [PRO_{i+j} daigaku-e ik-oo-to] yakusokusi-ta.
Tokiko-Top [university-to go-Exh-C_{to}] promise-Past
‘Tokiko (with someone) promised (each other) to go to university (together).’

However, the interpretation of PRO in (21) contrasts with that of (10), repeated as (22).

- (22) Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik-u-to] yakusokusi-ta.
Tokiko-Top Takuya-Dat [university-to go-Prm-C_{to}] promise-Past
‘Tokiko promised Takuya to go to university.’

In (22), PRO is most naturally understood to refer only to Tokiko, but in (21), the exhortative suffix in the complement suggests that Tokiko and someone else promised each other to go to university together. The source of some degradation for (21) may come from the fact that someone that Tokiko made the promise with is left implicit. If this person is overtly expressed, as in (23) below as *Takuya*, the sentence becomes perfectly grammatical and PRO is most naturally understood to refer to Tokiko and Takuya. Note that in (21), the intentive *-(y)oo* cannot replace the exhortative *-(y)oo*; when *yakusokusuru* ‘promise’ occurs with the *-(y)oo* suffix, it seems that PRO has to refer to Tokiko and someone else, and thus the exhortative reading seems to be the only option.⁶

- (23) Tokiko_i-wa Takuya_j-to [PRO_{i+j} daigaku-e ik-oo-to] yakusokusi-ta.
Tokiko-Top Takuya-with [university-to go-Exh-C_{to}] promise-Past
‘Tokiko with Takuya promised (each other) to go to university (together).’

Some predicates are even less selective than *yakusokusuru* ‘promise.’ The predicate *iu* ‘say,’ may occur with all force types discussed here. Observe (24).

- (24) Tokiko_i-wa [PRO_{i/j/i+j} daigaku-e ik(i)-tai/u/e/oo/-to] it-ta.
Tokiko-Top [university-to go-Opt/Prm/Imp/Exh or Int-C_{to}] say-Past
‘*lit.* Tokiko said to go to university.’

(24) gives rise to various readings depending on the force morphology. It could mean Tokiko expressed her desire to go to university. She may have made a promise to go to university or ordered someone to go to university. We have even more interpretative options. She may have asked someone to go to university together. Or, she may have been talking to herself and internally expressed her intention to go to university. Importantly, however, in all these available

readings, Tokiko or her addressee has to be at least included in the reference of PRO. The complement clause expresses her attitude about herself or her addressee.

Lastly, consider sentence (25), pointed out to me by Kimiko Nakanishi (p.c.).

- (25) ?? Tokiko_i-wa (watasi-ni_j) [PRO_{i+j} daigaku-de ai-tai-to] nozom-da.
Tokiko-Top (me-to) [university-at meet-Opt-C_{to}] hope-Past
‘*lit.* Tokiko hoped (to me) to meet at university.’

The sentence is, to my ears, severely degraded, presumably due to the unacceptability of the predicate *nozomu* ‘hope’ to occur with a dative DP. (25) sounds less degraded if the matrix predicate is replaced with *motomeru* ‘require.’ Then, an important question arises as to whether the *-tai* suffix allows split control just like the exhortative *-(y)oo*. My answer to this question is that *-tai* does *not* allow split control; but it allows partial control. This means that although PRO in (25) may marginally be interpreted as PRO_{i+j}, it is syntactically represented as PRO_{i+} with the “+” part (plus some others) understood to refer to *watasi* ‘me’ pragmatically by context. It is probably a good place to explain how I distinguish partial control from split control; the distinction entirely follows that of Landau (2000: 48-55).

Landau distinguishes partial control from split control in that the former only allows a collective reading of the embedded predicate so that it may appear with an adverb like *together*, but not with a non-singular anaphor or a reciprocal anaphor requiring a syntactically plural subject; in contrast, split control permits a distributive reading of the embedded predicate, allowing non-singular anaphors and reciprocals. Consider the minimal pairs from Landau (2000: 53-54):

- (26) a. * John told Mary that he preferred to meet each other at 6.
b. John proposed to Mary to meet each other at 6.
(27) a. * John told Mary that he wondered whether to get themselves a new car.
b. John asked Mary whether to get themselves a new car.
(28) a. * John told Mary that he didn’t know which club to become members of.
b. John discussed with Mary which club to become members of.

In all (a) examples above, the highest clause *John told Mary* is inserted to provide some context for the structures that follow so that the reciprocal *each other*, the plural anaphor *themselves*, or

the plural predicate *to become members of* should at least be contextually felicitous. However, they are all ungrammatical with the controlling predicates such as *prefer*, *wonder*, and *know* which only allow partial control but not split control. In contrast, (b) examples reveal that predicates that allow split control (*propose*, *ask*, *discussed with*) may occur with complements with the reciprocal or plural expressions without degradation in grammaticality. Note that (a) examples would become grammatical without the reciprocal or plural expressions:

- (29) a. John told Mary that he preferred to meet at 6.
 b. John told Mary that he wondered whether to get a new car together.
 c. John told Mary that he didn't know which club to join together.

In short, partial control does not allow PRO to be syntactically plural, but only semantically so; but PRO in split control is syntactically plural. Also important to note is the fact that such restrictions do not apply if the controller in partial control is plural to begin with:

- (30) John and Mary preferred to meet each other at 6 today. (Landau (2000: 49))

Of course, (30) does not exclude a partial reading, in which PRO would refer to John, Mary, and some others. Furthermore, partial control and split control are not mutually exclusive phenomena; for example, (28)b may describe a situation in which John discussed with Mary about John, Mary, and some others joining a club together. Since both partial and split control are PC phenomena where exhaustive and partial readings are always syntactically available, predicates that allow split control should also permit partial control; but the entailment does not go the other way around; it is not always the case that predicates allowing partial control should also allow split control.

Returning to (25), the sentence should bear the following syntactic representation (31) under my assumptions.

- (31) ?? Tokiko_T-wa (watasi-ni) [PRO_{T+} daigaku-de ai-tai-to] nozom-da.
 Tokiko-Top (me-to) [university-at meet-Opt-C_{to}] hope-Past
 'lit. Tokiko hoped (to me) to meet at university.'

The *-tai* suffix is a realization of the optative force, not allowing an exhortative reading or split control. PRO may include the contextually salient individual (the referent of *watasi* 'me') as a consequence of taking a partial reading option always available in PC.

The following set of data, also from Kimiko Nakanishi, is quite telling about the collective nature of PC complements:

- (32) a. ??/* Tokiko_i-wa (watasi-ni) [PRO_{i+} kekkonsi/wakare-tai-to]
Tokiko-Top (me-to) [marry/break up-Opt-C_{to}]
nozom-da.
hope-Past.
‘*lit.* Tokiko hoped (to me) to marry/break up.’
- b. ??/* Tokiko_i-wa (watasi-ni) [PRO_{i+} hanasi-ai-tai-to]
Tokiko-Top (me-to) [discuss-Reciprocal-Opt-C_{to}]
nozom-da.
hope-Past.
‘*lit.* Tokiko hoped (to me) to discuss with each other.’

(32)ab sound more degraded than (31). I assume the same partial (but not split) syntactic representation for (32)ab as (31). It seems that (32)ab sound worse due to a certain level of reciprocity lexically borne by the predicates *kekkonsuru* ‘marry’ and *wakareru* ‘break up’ and the periphrastic reciprocity of the predicate *hanasi-au* ‘discuss-with each other.’ I believe that the higher the level of reciprocity of the predicate, the harder it is to obtain the collective reading. PC complements only permit a collective reading even though PRO may be semantically plural; but since the predicates in (32)ab are less compatible with a collective reading, the degradation occurs. Nevertheless, (32)ab are not completely ungrammatical because, to some extent, these predicates may be construed collectively as describing one event to which two individuals participate together at once.

The following table (33) summarizes compatible force types by control predicates discussed above. I focus on the five force types that most clearly show control effects similar to that of the English PC. These predicates may also be compatible with other types of complements including *-yooni* and *-koto* complements (see section 2.5 for some discussion on these complements).

(33)

Matrix Predicate	Complement Force
<i>negau</i> ‘hope’ / <i>nozomu</i> ‘wish’	Optative
<i>kimeru</i> ‘decide’ / <i>ketuisuru</i> ‘make one’s mind up’ / <i>kessinsuru</i> ‘make one’s mind up’	Intentive
<i>meireisuru</i> ‘order’ / <i>meijiru</i> ‘order’ / <i>sijisuru</i> ‘instruct’	Imperative
<i>teiansuru</i> ‘propose’ <i>sasou</i> ‘ask (someone to do something together)’	Exhortative
<i>omou</i> ‘think’	Optative, Intentive
<i>segamu</i> ‘beg’	Optative, Exhortative
<i>sengensuru</i> ‘pledge’	Optative, Promissive
<i>yakusokusuru</i> ‘promise’ <i>tikau</i> ‘vow’	Promissive, Exhortative
<i>iu</i> ‘say’	Optative, Intentive, Imperative, Promissive, Exhortative

2.4. True Embedding?

Some may have reservations about saying that the Japanese data presented in this chapter involve true embedding. The complementizer *to* appearing in the complement in these examples in fact may appear both in direct and indirect speech contexts. Thus, some of these examples do allow direct-quotation construals. What is crucial here is whether they may also give rise to indirect speech construals. We will employ some grammatical transparency tests suggested in Kuno (1988), Oshima (2006), and Crnič and Trinh (2009) to prove this. First, if a *wh*-phrase with a matrix scope could appear in these complements, this serves as evidence for true embedding. Second, we could also see if spatial and person deixis in the complements are evaluated with respect to the reporting event context, not with respect to the original utterance context. If they are evaluated under the reporting context, that supports embedded indirect speech.

(34) illustrates that a *wh*-phrase with a matrix scope is possible. I only show data here that correspond to (7) (embedded optative) and (9) (embedded imperative), but similar tests prove that a *wh*-phrase in embedded intentives, promissives, and exhortatives may take a matrix scope.

- (34) Tokiko-wa [doko-e iki-tai-to] nozom-da no?
Tokiko-Top [where-to go-Opt-C_{to}] hope-Past Q
‘Where did Tokiko hope to go?’
- (35) Tokiko-wa Takuya-ni [doko-e ik-e-to] meireisi-ta no?
Tokiko-Top Takuya-Dat [where-to go-Imp-C_{to}] order-Past Q
‘Where did Tokiko order Takuya to go?’

The set of data in (36) demonstrates that a demonstrative such as *sono hon* ‘that book’ can occur in the embedded imperative in (36)b. Assume that it reports the original speech of, say John, who has actually referred to the book via its title, say, *The Old Man and the Sea* ((36)a). Mary reports this speech event by (36)b with a pointing gesture towards the book.

- (36) a. [John said to his son...]
Shumatu-ni *Roojin to Umi* yom-e-yo.
weekend-at *The Old Man and the Sea* read-Imp-Prt
‘Read *The Old Man and the Sea* over the weekend.’
- b. [Mary overheard the conversation between John and his son, and reports the conversation to someone with a pointing gesture toward the book...]
Jon-ga musuko-ni [shumatu-ni *sono hon-o* yom-e-to]
John-Nom son-Dat [weekend-at *that book-Acc* read-Imp-C_{to}]
it-te-ta.
say-Ger-Past
‘John said to his son to read that book over the weekend.’

A similar test can be applied to exhortative embedding.

- (37) a. [Hiroshi said to his son...]
Doraemon-no eiga mi-yoo-yo.
Doraemon-Gen movie watch-Exh-Prt
‘Let’s watch the movie of Doraemon.’

b. [Miho reports this with a pointing gesture toward the Doraemon DVD...]

Hiroshi-ga musuko-ni [*sore* mi-yoo-to] it-te-ta.
 John-Nom son-Dat [that watch-Exh-C_{to}] say-Ger-Past
 ‘Hiroshi said to his son to watch that (together).’

It has also been suggested in the literature (e.g. Kuno (1988)) that the third person pronoun *yatu* (vulgar form) in the complement as in (38), adapted from Kuno (1988: 76), serves as an indication of indirect speech. In the original speech, the speaker could not have referred to himself in the third person.

(38) Hiroshi-ga [*yatu*-no uti-ni ko-i-to] erasooni
 Hiroshi-Nom [he-Gen house-to come-Imp-C_{to}] bossily
 sijisi-te-ki-ta.
 order-Ger-come-Past
 ‘Hiroshi bossily ordered (me) to come to his house.’

These facts strongly support that sentences like (7) to (16) involve true embedding. Kuno (1988: 76) once referred to structures like (38) as “blended discourse.” He observed that the complement in (38) bears the properties of indirect speech. However, since the complement occurs in the imperative form which was then assumed to be disallowed in indirect speech, he coined the term “blended discourse.” Nevertheless, recent literature has proven that embedded imperatives are available in various languages. Korean is also known to allow embedded imperatives, promissives, and exhortatives (Pak (2004), Zanuttini, Pak and Portner (2012)). The examples below are from Zanuttini et al. (2012: 1268).

(39) a. Emma-ka Inho-eykey kongpuha-la-ko hasiess-ta.
 mother-Nom Inho-Dat study-Imp-Comp said (honorific)-Dec
 ‘Mother told Inho to study.’
 b. Kyoswunim-kkeyse Inho-eykey nayil liphothu-lul
 professor-Nom Inho-Dat tomorrow report-Acc
 cwu-ma-ko hasiess-ta.
 give-Prm-Comp said (honorific)-Dec
 ‘The professor promised Inho that he will give back the report tomorrow.’

- c. Emma-ka Inho-eykey kongpuha-ca-ko hasiess-ta.
 mother-Nom inho-Dat study-Exh-Comp said (honorific)-Dec
 ‘Mother exhorted Inho to study together.’

Furthermore, Rus (2005) and Stegovec and Kaufmann (2015) discuss embedded imperatives in Slovenian, Platzack (2007) in Old Scandinavian, Medeiros (2015) in Ancient Greek, and Crnič and Trinh (2009) in English. (40) shows an instance of Slovenian embedded imperatives and (41), English embedded imperatives.

- (40) Mama je rekla, da pospravi sobo!
 mom is said.FEM.SG that tidy up.IMP.2P.SG room.ACC
 ‘Mom said that you should tidy up your room!’

(Stegovec and Kaufmann (2015: 622))

- (41) a. John said call his mom.
 b. John said don’t call his mom.

(Adapted from Crnič and Trinh (2009: 111-112))

Depending on the language, there seems to be certain restrictions on precisely when imperative embedding is allowed. For instance, Slovenian embedded imperatives require that the subject of the imperative be interpreted as the addressee of the actual utterance, not the shifted addressee as in the Japanese or Korean embedded imperatives ((36)b, (39)a). Thus, in Slovenian, if Peter’s mom said to Peter’s dad “Peter should really tidy up his room,” Peter’s dad may report this to his son, Peter by (40). However, if Peter’s mom said to Peter’s dad “Tidy up your room!” using an imperative, Peter’s dad may not report this to his son by (40). In contrast, in English embedded imperatives, the subject interpretation is not so restricted, but the predicate that may embed imperatives is limited to *say* (Crnič and Trinh (2009)). This thesis will argue that certain English control complements appearing in *to*-infinitival forms fall under shifted imperatives. Nonetheless, the distribution of root imperative forms in embedded contexts is extremely limited; in fact, they are allowed only under the verb *say* according to Crnič and Trinh (2009). Thus, there seems to be limitations to imperative embedding. However, these cross-linguistic observations tell us at least that embedded imperatives are not out of the question. They now constitute plausible and viable options in linguistic research.

2.5. Selection

The observation in section 2.3 as summarized in table (33) suggests selectional relationships between the matrix predicates and the complement forces. The key notion here is Grimshaw's (1979) semantic selection (s-selection). Grimshaw proposes that there are two kinds of co-occurrence restrictions imposed on the predicates and their clausal complements. One is subcategorization and the other is s-selection. She mentions that predicates such as *ask* and *wonder* s-select interrogatives while some others such as *amazing* and *be surprised at* s-select exclamatives. Some predicates s-select both semantic types (e.g. *know*, *find out*); some others s-select neither (e.g. *think*). Biunique relations are not presupposed. However, all of the predicates just mentioned above are subcategorized for S' (or CP). S-selection is different from subcategorization in that while the former restricts certain co-occurrences in terms of semantic types such as Q (question), E (exclamative), and P (proposition), the latter imposes restrictions in terms of syntactic categories such as NP, PP, and CP. The following illustrates Grimshaw's notion of subcategorization and s-selection:

- (42) a. *think* [__ S'], [__ P]
b. *amazing* [__ S'], [__ P/E]
c. *wonder* [__ S'], [__ Q]
d. *find out* [__ S'], [__ P/Q/E] (Grimshaw (1979: 288))

The restrictive relations between the control predicates and the complement force types are best captured by the notion of s-selection. Just like predicates such as *wonder* and *find out* s-select the interrogative, the control predicates such as *nozomu* 'hope' s-select optatives. We could say *yakusokusuru* 'promise' s-selects promissives, *meireisuru* 'order' imperatives, *teiansuru* 'propose' exhortatives, and so on. They do not have to be a biunique one-to-one relation, so that some predicates may s-select more than one type (e.g. *omou* 'think' selecting optatives and intentives and *iu* 'say' selecting even more types). They are all subcategorized for CP (or *to*-infinitival clause), but semantically select different sets of forces.

It deserves mention here, again, that selectional options for Japanese control predicates like those in table (33) are not limited to the force types discussed in the present study. Some also select *-yooni* complements and others *-koto* complements. I follow Uchibori (2000) in

assuming them to be subjunctive complementizers, attached to the nonpast form of the predicate. I put these complementizers outside the scope of the present study; the reasons why perhaps need to be explained.

The greatest reason of all, the control effects observed for *-yooni* and *-koto* complements seem to be less obvious than those I have been discussing above. I build on Uchibori (2000) for my judgments for examples in (43) and (44) below. Observe the contrast between (43)a and b. The null embedded subject may refer to either Takuya or some other individual in (43)a with the *-yooni* complement, revealing lack of control effects; the null subject may most preferably be interpreted as referring to Takuya without context, but if the context has it that Takuya has a son who has just taken the university entrance exam, the null subject could be understood to refer to Takuya's son. Contrastingly, even under the same context, the reference of the null subject is restricted to Takuya in (43)b with the optative *-tai* complement. I consider only (43)b to be an instantiation of control parallel to that of English PC.

- (43) a. Takuya_i-wa [_{e_{i/j}} daigaku-ni ukar-u yooni] negat-tei-ta.
 Takuya-Top university-to pass-Nonpast C_{yooni}] hope-PROG-Past
 'Takuya was hoping that he would pass the university entrance exam.'
- b. Takuya_i-wa [_{PRO_{i/*j}} daigaku-ni ukari-tai-to] negat-tei-ta.
 Takuya-Top university-to pass-Opt-C_{to}] hope-PROG-Past.
 'Takuya was hoping to pass the university entrance exam.'

Also consider (44)ab:

- (44) a. Takuya_i-wa [_{e_{i/j}} daigaku-ni ik-u koto]-o nozom-dei-ta.
 Takuya-Top university-to go-Nonpast C_{koto}-Acc hope-PROG-Past
 'Takuya was hoping that he would go to the university.'
- b. Takuya_i-wa [_{PRO_{i/*j}} daigaku-ni iki-tai-to] nozom-dei-ta.
 Takuya-Top university-to go-Opt-C_{to}] hope-PROG-Past.
 'Takuya was hoping to go to the university.'

The null subject in (44)a with the *-koto* complement allows Takuya or some other individual to be interpreted as its reference, while in (44)b, the reference is restricted to Takuya. Some readers may have noticed that the matrix predicates I used in (43) (*negau*) and (44) (*nozomu*) are

different. They have very similar meanings corresponding to English *hope*. Nevertheless, to my ears, the predicate *negau* with the *-koto* complement sounds somewhat degraded; at least the predicate *nozomu* sounds better with *-koto*. Moreover, as I mentioned in endnote 5, to some speakers, *negau* with *-tai* (as in (43)b) involves some degradation. The fact that two predicates *negau* and *nozomu* bearing a meaning close to *hope* shows such a contrast is quite interesting, certainly not trivial to the present study. However, I will have to leave these issues to further study. The point here is that *-yooni* and *-koto* complements show weaker control effects (not those allowed in PC) so that they can easily be overridden by context.

The structures like (43)a with *-yooni* and (44)a *-koto* even allow an overt embedded subject, which may or may not be coreferential with the matrix subject ((45)ab). In contrast, although the *-tai* complement in (45)c marginally admits the overt subject *zibun* coreferential with the matrix subject, a lexical subject such as *musuko* ‘his son’ gives rise to straightforward ungrammaticality. The *ga*-marker attached to the embedded subject in (45)a to c convey exclusivity in these examples.

- (45) a. Takuya_i-wa [zibun_i/ musuko_j-ga daigaku-ni ukar-u
 Takuya-Top self/ his son-Excl university-to pass-Nonpast
 koto]-o nozom-dei-ta.
 C_{koto}-Acc hope-PROG-Past
 ‘Takuya was hoping that he (*lit.* self)/ his son would pass the university
 entrance exam.’
- b. Takuya_i-wa [zibun_i/ musuko_j-ga daigaku-ni ukar-u
 Takuya-Top self/ his son-Excl university-to pass-Nonpast
 yooni] negat-tei-ta.
 C_{yooni} hope-PROG-Past
 ‘Takuya was hoping that he (*lit.* self)/ his son would pass the university
 entrance exam.’

- c. Takuya_i-wa [_i?zibun/_i*musuko_j-ga daigaku-ni ukari-tai-to]
 Takuya-Top self/ his son-Excl university-to pass-Opt-C_{to}
 nozom-dei-ta.
 hope-PROG-Past
 Intended: ‘Takuya was hoping for himself (*lit.* self)/ his son to pass the
 university entrance exam.’

In some environments, *-yooni* does in fact exhibit object control-like effects, as discussed in various studies including Watanabe (1995), Uchibori (2000), and Fujii (2006).⁷ The following is adapted from Watanabe (1995: 15), but the gloss is revised to reflect my analysis.

- (46) a. John-wa Mary_i-ni [_ie_i Bosuton-e ik-u-yooni] meizi-ta.
 John-Top Mary-Dat Boston-to go-Nonpast-C_{yooni} order-Past
 ‘John ordered Mary that she should go to Boston.’
 b. John-wa Mary_i-ni [_ie_i kono mati-o sar-u-yooni] settokusi-ta.
 John-Top Mary-Dat this town-Acc leave-Nonpast-C_{yooni} persuade-ta
 ‘John persuaded Mary that she should leave this town.’

Nonetheless, the very fact that *-yooni* complements also allow subject control-like effects as in (43)a holds me back from analyzing *-yooni* to be an imperative morpheme like *-e/ro*, which I take to be responsible for control. I assume the imperative *-e/ro* to be a realization of [-speaker, +addressee] features as I will discuss below. I will argue that the [+addressee] feature is the source of *de te*; but under my judgment, the *-yooni* complement does not seem to bring about an obligatory *de te* construal in (46)ab. For instance, imagine a situation where John, the new boss, says to one of his subordinates, Mary, that the person who is in charge of sales in Boston should go to Boston, not knowing that Mary is in fact in charge of sales in Boston. (46)a seems to truthfully describe the situation but (47) below does not.

- (47) John-wa Mary_i-ni [_iPRO_i Bosuton-e ik-e-to] meizi-ta.
 John-Top Mary-Dat Boston-to go-Imp-C_{to} order-Past
 ‘John ordered Mary to go to Boston.’

Even (43)a, exhibiting a subject control-like phenomenon, sounds to me to lack an obligatory *de se* interpretation. This time, imagine a situation in which Takuya is hoping that the person who

studied the most in his class will pass the entrance exam. I judge (43)a to be true for this scenario, but (43)b to be false. I am not fully confident about these judgments on *-yooni* regarding *de se/te*; but for these observations, I just cannot treat *-yooni* equally to the imperative *-e/ro*.

Furthermore, although *-yooni* and *-koto* may be used somewhat similarly to *-e/ro* in root contexts in making orders such as (48)a-c, they show distinct behaviors from *-e/ro* in certain contexts. On the field during a soccer game, one player may say (49)a to his teammate right at the moment he wants a pass, but not (49)bc; at least (49)bc sound infelicitous. The observation for *-koto* in (49)c is due to Katsumasa Ito (p.c.; also in Ito (2017)), and a similar observation for *-yooni* in (49)b is suggested in Ihara (2018).

- (48) [Hiroshi is talking to his son.]
- a. Heya-o katazuke-ro.
 room-Acc clean up-Imp
 ‘Clean up your room.’
- b. Heya-o katazuke-ru-yooni.
 room-Acc clean up-Nonpast-*C_{yooni}*
 ‘(Make sure that you) clean up your room.’
- c. Heya-o katazuke-ru-koto.
 room-Acc clean up-Nonpast-*C_{koto}*
 ‘(Make sure that you) clean up your room.’
- (49) [During a soccer game, a player is yelling to his teammate.]
- a. Pasu-o das-e.
 pass-Acc give-Imp.
 ‘Give me a pass!’
- b. # Pasu-o dasu-yooni.
 pass-Acc give-*C_{yooni}*
 ‘(Make sure that you) give me a pass.’
- c. # Pasu-o dasu-koto.
 pass-Acc give-*C_{koto}*
 ‘(Make sure that you) give me a pass.’

The *-e/ro* imperative clauses seem to be *anchored* to the specific time *now* of the context, but *-yooni* and *-koto* clauses are not. Anchoring to the time *now* of the context plays a crucial role in my analyses for PC (see Chapter 4). It is closely associated with the *de se/te* construal.

Although I am unable to present the precise nature of *-yooni* and *-koto* complements, I consider that they are somewhat distinct from the control complements I mainly discuss in this study. They exhibit some control-like effects, but such effects do not readily fall under the type of control I am considering; at least, they do not seem to be generalizable to PC.

In any event, my proposal does not prohibit the predicates selecting imperatives, promissives, and so on from also selecting *-yooni* or *-koto* complements. I just assume that the English control complements correspond to optatives, intentives, imperatives, promissives, and exhortatives in Japanese; but not to *-yooni* or *-koto* complements.

Such non-biunique relationship between a predicate and the types of complements it selects is comparable to what Grimshaw sees in the predicate *find out* for instance; it s-selects P (proposition) in addition to Q and E. Whatever the status of *-koto* and *-yooni* clauses may be, they would just add to the list of selectional options for the predicate. I will later argue that the nonfinite complement (i.e. control complement) of the English predicate *promise* is also a promissive, but the same predicate also s-selects P. It may also occur with a *that*-clause. As such, the proposed system does not confine control predicates from s-selecting any other clause types than those discussed here; nothing impinges on my proposal if they s-select other clause types. It is just that my focus is on certain force types which demonstrate most articulated control effects. These force types impose just the right level of restrictions on the reference of their subject, which, to my eyes, most effectively capture the reference restrictions found in English PC.

I would like to be clear on one more point. When we say *the predicate selects complement clause types*, it sounds as though the predicates are the ones doing the selection. I hold this view to be incorrect. The complement clauses may select the types of predicates they co-occur with as much as the predicates select them. Crucially for the purpose of the present study, the complement force does not come from the matrix predicate nor are they assigned by the predicate. In my view, complements independently bear their own force even before the merger of the matrix predicate. If the co-occurrence of the complement force and the predicate

violates the selectional restrictions from either side (the complement or the predicate), the sentence turns out ungrammatical and semantically undefined, if not, grammatical and semantically defined. The selectional restrictions are presumably checked in LF. The issue for the present thesis is, thus, more about in what syntactic contexts control predicates are allowed than about what syntactic structures they project, in line with the notion of late insertion in distributed morphology (Halle and Marantz (1993), Marantz (1995), Harley and Noyer (2000)).

This said, the present study does not explain what contributes to the selectional relations I observe between the matrix predicates and the complement types. Some predicates occur with only one complement type, but some others with two or more types. It surely will be beneficial to explore, for instance, which combinations of complement types are more compatible with the same predicate, while some other combinations are prohibited. Such considerations will make control phenomena much more predictable.⁸ Unfortunately, I will have to leave this issue to future research.

2.6. Force and Person

Recall that each force type gives rise to a specific control pattern. The following is the pattern we found in the very first set of Japanese control examples in (7) to (11).

- (7)' [Decl. *hope* [Opt.]] => subject control
- (8)' [Decl. *decide* [Int.]] => subject control
- (9)' [Decl. *order* [Imp.]] => object control
- (10)' [Decl. *promise* [Prm.]] => subject control across object
- (11)' [Decl. *propose* [Exh.]] => split control

We observed, for instance as in (7)', that the matrix predicate *hope* (its Japanese counterpart) appears in the matrix clause which is itself a declarative clause; however, its complement may be an optative; and when the complement is an optative, it exhibits subject control. Likewise, the imperative force in the complement seems to bring about object control, the exhortative force gives rise to split control, and so on. Why do such patterns hold?

I argue that they arise from the person restrictions imposed by force. The idea essentially comes from the notion of the To-Do List presented in Portner (2004, 2007). Portner,

building on Stalnaker (1974, 1978), maintains that the discourse function of the assertive force (the canonical force of declaratives) is to add the asserted proposition to the Common Ground. The Common Ground is a set of propositions shared by the participants in a conversation. Contrastingly, the discourse function of the imperative involves what Portner calls a To-Do List, not the Common Ground. Each participant in a conversation has his/her own To-Do List, which is, very roughly, a set of properties one is committed to bringing about. The To-Do Lists of the discourse participants are mutually shared to serve as a modal base for the conversation. According to Portner, not only the discourse function of the imperative but also that of some other closely related clause types can be defined via the notion of To-Do Lists. The function of the imperative is to add the property denoted by the imperative expression to the To-Do List of the addressee, whereas that of the promissive is to add a property to the speaker's To-Do List. Also, the exhortative function can be defined as adding a property to the To-Do Lists of both the speaker and the addressee. For instance, the imperative *Sit down!* adds the property of sitting down to the addressee's To-Do List.

In a way, we could assume that the imperative function is a partial function. In Portner's (2004, 2007) denotation of the imperative such as *Sit down!* indicated in (50), the requirement that the argument x is the addressee of the context is provided as a domain restriction.

$$(50) \llbracket \text{Sit down!} \rrbracket = [\lambda w. \lambda x : x = \text{addressee}_c. x \text{ sits down in } w]$$

(Portner (2007: 358))

For Portner, imperatives denote a property, and the property can only be truth conditionally defined when it is applied to the addressee of the discourse context (c in (50) indicates the context of the discourse). When it is applied to any other individual, it remains truth conditionally undefined and returns neither true nor false.

Following Portner (2004, 2007), the present thesis holds that imperatives and other related force types such as promissives and exhortatives denote a property. I also propose that PC complements are imperatives and other related force types. This implies that PC complements (those like (7) to (11) and their English counterparts) denote a property, in particular, a property with a domain restriction on the external argument. This is one of the key contentions this thesis

argues for. This line of thought converges with the well-accepted approaches to *de se* attitude reports including Chierchia (1990), Percus and Sauerland (2003ab) and Pearson (2013, 2016). Under these approaches, *de se* attitude complements denote a property. Most importantly, PC complements are assumed to be typical *de se* attitude complements, as will be discussed in Chapter 3.

Returning to the issue of force and person, we could assume that the embedded imperative as in (9), the embedded promissive as in (10), and the embedded exhortative as in (11) impose person restrictions on the subject argument, which is PRO. A more updated version of Portner's (2004, 2007) view is presented in Zanuttini et al. (2012) where they maintain that imperatives restrict their subject to be the addressee(s) exclusive of the speaker; the subject of promissives, to be the speaker exclusive of the addressee(s); and the subject of exhortatives, to be the speaker inclusive of the addressee(s). Their observation is mostly based on Korean. When they mention the speaker and the addressee, they imply the speaker and the addressee of the discourse context. The person restrictions suggested by Zanuttini et al. (2012) are summarized in (51).

- (51) imperative: inclusive of addressee_C exclusive of speaker_C
 promissive: inclusive of speaker_C exclusive of addressee_C
 exhortative: inclusive of speaker_C and addressee_C

I propose that the control patterns observed in (9) to (11), presented more schematically in (9)' to (11)' at the beginning of this subsection, are consequences of these person restrictions. The embedded imperative restricts its subject to refer to the addressee of the context, and this gives rise to object control. I assume that the relevant context for the embedded imperative is not the discourse context of the entire sentence, but that of the reported speech act. That is to say, the addressee relevant for the embedded imperative corresponds to Schlenker's (2003b) *shifted* addressee. For instance, in the English counterpart (52) below of the Japanese control construction (9), the infinitival complement is conceived of as an embedded imperative under the current proposal, and the relevant context for the imperative is that of Tokiko ordering Takuya to do something. This context is *shifted* in the sense that it is distinct from the context of the entire

utterance. The sentence in (52) may have been uttered by Mary to John, so that in the root *unshifted* context, the addressee is John; but in the shifted context the addressee is Takuya.

(52) [Mary said to John...]

Tokiko ordered Takuya_i PRO_i to go to university.

The denotation of the imperative (50) as in Portner (2004, 2007) says that its domain is restricted in such a way that it denotes a property only when the subject argument applies to the addressee of the relevant context. As such, we are forced to interpret the reference of PRO to be the addressee of the reported speech; if not, the property denoted by the embedded complement remains undefined. In the case of (9) repeated as (53), the addressee of the reported speech act is Takuya.

(53) Tokiko_i-wa Takuya_j-ni [PRO_j daigaku-e ik-e-to] meireisi-ta.
 Tokiko-Top Takuya-Dat [university-to go-Imp-C₁₀] order-Past
 ‘Tokiko ordered Takuya to go to university.’

In very similar ways, we understand the reference of PRO in (10) repeated as (54) and (11) repeated as (55) to be Tokiko (the shifted speaker) and Tokiko and Takuya (the shifted speaker and the shifted addressee) respectively.

(54) Tokiko_i-wa Takuya_j-ni [PRO_i daigaku-e ik-u-to] yakusokusi-ta.
 Tokiko-Top Takuya-Dat [university-to go-Prm-C₁₀] promise-Past
 ‘Tokiko promised Takuya to go to university.’

(55) Tokiko_i-wa Takuya_j-ni [PRO_{i+j} daigaku-e ik-oo-to] teiansi-ta.
 Tokiko-Top Takuya-Dat [university-to go-Exh-C₁₀] propose-Past
 ‘Tokiko proposed to Takuya to go to university (together).’

Now, one may wonder what connects the notion of the shifted speaker to Tokiko and the notion of the shifted addressee to Takuya. This will be one of the topics discussed in Chapter 4, but briefly, I assume that their identity is assured only by the context dependency of the embedded clause on the matrix clause. I will posit a mediating functional head in the left periphery of the complement. This head represents the shifted speaker and addressee. However, I will assume no syntactic relations between this head and the relevant matrix argument. The event expressed in the matrix clause just serves as a context provider. For now, it suffices for the

purpose of this chapter to suggest that observed control patterns such as subject, object, and split control arise from the person restrictions imposed by the complement force.

2.7. Japanese Force in Roots

Portner (2004, 2007) and Zanuttini et al. (2012) only mention imperatives, promissives, and exhortatives. What about optatives and intentives? I propose that they too restrict reference of the subject. For supporting evidence, I will look into the distribution of Japanese root optatives and intentives. I will also present Japanese root imperative, promissive, and exhortative examples as confirmation for Portner's proposal.

2.7.1. Root Optatives

The optative suffix *-tai* expresses one's wish, hope, desire, expectation, and willingness to do something. It appears both in root and embedded contexts. When the suffix appears in the nonpast form, it brings about the optative force, and certain interpretative restrictions are imposed on the subject (Hasegawa (2009, 2010), Nitta (1991), Ueda (2007, 2008, 2009)). The suffix in fact also occurs in past forms and in more complex structures (e.g. *noda* in-situ cleft constructions). In those cases, the sentence does not bear the optative force and the subject interpretation is much less restrictive (Nitta (1991), Kuno (1973)). Observe the following adopted from Nitta (1991: 30).

- (56) *Watasi-wa sake-ga nomi-tai.*⁹
I-Top sake-Nom drink-Opt
'I want to drink sake.'

The optative *-tai* is suffixed to the verbal root form, creating a new predicate. In (56), *-tai* attaches to *nomi* 'drink.' The entire predicate means 'want to drink.' *Sake*, a Japanese wine, with the *ga* marker is the object. The *ga* marker standardly marks the subject, but it additionally marks the object of transitive adjectives and nominal adjectives. As discussed in Kuno (1973), for *-tai* predicates, the *ga* object marker is often preferred, although the *o* object marker is also possible.¹⁰

A well-known observation regarding the distribution of the *-tai* optative suffix (Kuno (1973), Nitta (1991), Sugawara (2005)) says that, without special contexts, the suffix can only occur fully felicitously with the speaker subject in root assertive sentences. This is illustrated in (57). The *-tai* suffix with the second person subject *anata* ‘you’ or the third person subject *oto-san* ‘father’ leads to ungrammaticality or significant infelicity, although it is fully felicitous if the speaker is referring to himself as *oto-san* or ‘daddy.’ Opinions vary regarding precise judgment on this, but it is clear that the speaker subject is the only fully acceptable subject with *-tai* predicates. Contrastingly, in root interrogatives, the second person subject is the only fully acceptable subject as in (58). Again, note that *oto-san* ‘father’ in (58) is not meant to refer to the addressee of the utterance, as in a situation where a daughter asks her father if he wants to drink sake by calling him *oto-san*. The sentence (58) with the addressee *oto-san* would be fully acceptable.

- | | | | |
|------|--|----------|-----------|
| (57) | {Watasi/ ??Anata/ ??Oto-san}-wa | sake-ga | nomi-tai. |
| | {I/ You/ Father}-Top | sake-Nom | drink-Opt |
| | ‘I/ You/ My father want(s) to drink sake.’ | | |
| (58) | {??Watasi/ Anata/ ??Oto-san}-wa | sake-ga | nomi-tai? |
| | {I/ You/ Father}-Top | sake-Nom | drink-Opt |
| | ‘Do/Does I/ You/ Father want to drink sake?’ | | |

(Adapted from Nitta (1991: 30))

Indeed, a similar distributional pattern is observed for other predicates expressing emotions or sensations such as *hosii* ‘want’ and *kowai* ‘be fearful of’ in Kuno (1973) and *atui* ‘hot’ and *sabisii* ‘lonely’ in Kuroda (1973). In (59) below, *atui* ‘hot’ with the second or the third person subject is severely degraded, while it is perfectly acceptable with the first person.

- | | | |
|------|------------------------------|-------|
| (59) | {Watasi/ ??Anata/ ??John}-wa | atui. |
| | {I/ You/ John}-Top | hot |
| | ‘I/ You/ John is hot.’ | |

(Adapted from Kuroda (1973: 378))

What these predicates have in common is that they express an individual’s mental states or sensations from his/her own viewpoint; the one who has exclusive access to such internal

feelings is the speaker of the utterance. Hence the speaker subject or the first person subject in unembedded contexts is the only fully acceptable option for such predicates. Since “the speaker has no basis for making an affirmative judgment on the second or third person’s internal feeling” (Kuno (1973: 83)), the second or third person subjects are not allowed in assertive root sentences for these emotion and sensation predicates including *-tai* predicates. In root *-tai* interrogatives, on the other hand, only the addressee subject is fully acceptable. “The speaker can ask about the internal feeling of the hearer, but not about the internal feeling of some third person. He cannot ask the hearer about his (the speaker’s) own feeling, either” (Kuno (1973: 83-84)).

However, the *-tai* suffix does not always impose the same kind of restrictions on the subject. First, when it occurs with the verbalizing suffix *-garu* ‘show a sign of,’ third person subjects are allowed. In fact, this time, third person subjects exhibit the highest acceptability; sentences with the first and second person subjects sound significantly degraded with the verb-*garu* forms as in (60) (Kuroda (1973), Sugawara (2005)).

- (60) {??Watasi/ ??Anata/ Oto-san}-wa sake-o
 {I/ You/ Father}-Top sake-Acc
 nomi-ta-gat-tei-ru.
 drink-Opt-show.a.sign.of-PROG-Nonpast
 ‘I/ You/ My father want(s) to drink sake.’

Furthermore, when the *-tai* suffix occurs within *noda* in-situ clefts as in (61), third person subjects are most preferable (Kuroda (1973), Nitta (1991)).

- (61) {?Watasi/ ?Anata/ Oto-san}-wa sake-ga nomi-tai-noda.
 {I/ You/ Father}-Top sake-Acc drink-Opt-*noda*.
 ‘I/ You/ My father want(s) to drink sake.’

Note that the *-tai* suffix occurs in the control complement of desiderative predicates such as *negau* ‘hope’ and *nozomu* ‘wish’ in its nonpast simple form, not in *-garu* or *-noda* cleft forms (see (7) and (12)). In fact, *-garu* and *-noda* forms cannot grammatically co-occur with *negau* ‘hope’ and *nozomu* ‘wish’ as shown in (62) with the *-garu* form.

- (62) * Tokiko_i-wa [PRO_i daigaku-e iki-ta-gat-tei-ru-to]
Tokiko-Top [university-to go-Opt-show.a.sign.of-PROG-Nonpast-C_{to}]
negat-ta/nozom-da.
hope-Past/wish-Past
Intended: ‘Tokiko hoped/wished to go to university.’

The co-occurrence of *-ta-garu* and the predicate *omou* ‘think’ is grammatical as in (63), but it does not exhibit control effects. It shows subject obviation effects; the null subject must refer to some individual other than the reference of the matrix subject *Tokiko*.

- (63) Tokiko_i-wa [e*_{ij} daigaku-e iki-ta-gat-tei-ru-to]
Tokiko-Top [university-to go-Opt-show.a.sign.of-PROG-Nonpast-C_{to}]
omot-ta.
think-Past
‘Tokiko thought that she/he wanted to go to university.’

The observation in this subsection leads us to conclude that the *-tai* suffix in root environments restricts its subject to be the speaker of the discourse context when it appears in the nonpast form in an assertive sentence. Only interrogative *-tai* sentences allow the subject to be the addressee. Although some forms of *-tai* such as *-ta-garu* and *-tai-noda* felicitously admit third person subjects, these forms are either not allowed in the complement under the desiderative control predicates or give rise to a non-control construal.

2.7.2. Root Intentives

The intensitive morphology *-yoo* involves “essentially internal monologue-like utterances” (Fujii (2010: 215)). The *-yoo* intentives are not intended to communicate one’s attitudes to the addressee (Adachi (2002)). As such, the addressee is non-existent for intentives. They express one’s decisions, resolutions, and commitments to some future actions. Note that I am focusing on the intensive use of *-yoo*, dissociating it from the exhortative *-yoo* here.

The intensive *-yoo* sentences are canonically uttered to the speaker himself to stay resolute on something or to motivate himself to do something. A school child may utter (64) to himself coming home from school to avoid the temptation to put off homework until the next day.

(64) Kyoo shukudai si-yoo. (monologue)

Today homework do-Int

‘I’ll do my homework today.’

Or, being fed up with your micromanaging boss, you might think to yourself...

(65) Kaisha yame-yoo. (thinking to yourself)

Company quit-Int

‘I’ll quit my job.’ (Adapted from Adachi (2002: 20))

More casually, finding an open seat on the train, you may just think...

(66) Suwar-oo. (thinking to yourself)

Sit-Int

‘I’ll sit here.’

The subject is null in the above examples; intentives sound most natural with null subjects.

However, we could make it overt as in (67)-(68). They demonstrate that the second person pronoun *anata*, the third person pronoun *kare*, and the proper name *Mari* are incompatible with intentives.¹¹ In contrast, *boku* ‘I’ and *watasi* ‘I’ are fully compatible. *Boku* is one of the stylistic versions of first person pronouns typically preferred by younger male speakers. Note that overt subjects give rise to a contrastive construal on the subject. We could avoid contrastive construals by dropping the *-wa* marker as in (69).

(67) *Anata/*Kare/Boku-wa kyoo shukudai si-yoo.

you-/he-/I-Top today homework do-Int

Intended: ‘You’ll/He’ll/I’ll do your/his/my homework today.’

(68) *Anata/*Mari/Watasi-wa kaisha yame-yoo.

you/Mari/I-Top company quit-Int.

Intended: ‘You’ll/He’ll/I’ll quit your/his/my job.’

(69) Boku/Watasi, suwa-roo.

I /I sit-Int.

‘I’ll sit here.’

In sum, we observe that the reference of the subject is restricted to the speaker in root intentives.

Also, root intentives essentially involve monologues and the presence of the addressee(s) is not

presupposed by the speaker.

2.7.3. Root Imperatives

Japanese *-e/-ro* imperatives behave almost the same way as their English counterparts. For instance, a father may utter (70) to his son. The subject is typically null in imperatives.

- (70) Kyoo shukudai si-ro!
Today homework do-Imp
'Do your homework today.'

The subject may be overt, just like in English. However, as you might expect, it always refers to the addressee(s) of the discourse context. The first and the third person pronouns with the imperative lead to ungrammaticality as in (71). *Omae*, a second person pronoun form preferred in informal speech, is fully grammatical with the imperative. As in intentives, overt imperative subjects with *-wa* give rise to a contrastive reading. Dropping *-wa* removes such effects (72).

- (71) *Watasi/*Kare/Omae-wa kyoo shukudai si-ro!
I/he/you-Top Today homework do-Imp
Intended: 'I/he/you must do my/his/your homework today.'

- (72) Omae, shukudai si-ro!
You homework do-Imp.
'You, do your homework!'

Proper names and quantifying expressions can also appear as the subject of the imperative as long as they refer to the addressee(s); this patterns with the English imperatives (see endnote 22 of Chapter 4). Observe (73) and (74).

- (73) Minna/Haruki to Tokiko, hayaku ne-ro!
Everyone/Haruki and Tokiko, soon sleep-Imp
'Everyone/Haruki and Tokiko, go to sleep soon!'

- (74) Dareka, denwa-ni de-ro!
Someone, phone-Dat answer-Imp
'Someone, answer the phone!'

Just as in English and as suggested in Portner (2004, 2007) and Zanuttini et al. (2012), the root imperative restricts the reference of the subject to be the addressee(s) of the discourse contexts.

2.7.4. Root Promissives

Promissives are not cross-linguistically as pervasive as imperatives, but Korean is attested to have a dedicated form for the promissive (Portner (2004), Zanuttini et al. (2012)) as in (75).

- (75) Cemsim-ul sa-*ma*. (promissive)
 lunch-Acc buy-Prm
 ‘I will buy lunch.’ (Zanuttini et al. (2012: 1234))

According to Pak et al. (2008), the *-ma* particle conveys a meaning comparable to ‘I promise’ in English, so (75) should really be interpreted as ‘I promise I’ll buy you lunch.’ I assumed in section 2.3 that the Japanese suffix *-(r)u* marks the promissive force, but *-(r)u* is most standardly known as a nonpast tense marker. It contrasts with the past tense suffix *-ta*. Consider the following:

- (76) Asita kitto ame-ga fur-u-ne.
 Tomorrow perhaps rain-Nom fall-Nonpast-Prt
 ‘It will perhaps rain tomorrow.’
- (77) Kinoo takusan ame-ga fut-ta-ne.
 Yesterday a lot rain-Nom fall-Past-Prt
 ‘It rained a lot yesterday.’

However, in the more traditional literature on Japanese, the *-(r)u* form is well acknowledged as a form used to *notify others of* the speaker’s decisions and commitments (Nitta (1991: 209-211), Moriyama (2000: 68-69), Adachi (2002: 38-40)). This usage of *-(r)u* just falls under what the present study calls the promissive. For instance, you would say to your boyfriend after dinner at a restaurant...

- (78) (Watasi,) Kyoo-wa moo kaer-u.
 (I) Today-Top already go home-Prm.
 ‘As for today, I’m going home now.’ (Adapted from Adachi (2002: 38))

(78) is most natural without overt subjects, but overt subjects may occur only if they refer to the speaker of the utterance. If you were a student, you might also say something like the following to make your parents happy:

- (79) (Boku,) kyoo-kara chanto benkyoosu-ru.
 (I) today-from hard study-Prm
 ‘I’ll start studying hard from today.’

Recall that intentives also express the speaker’s decisions and commitments just like promissives. Very importantly, there is a clear distinction between the intentive *-(y)oo* and the promissive *-(r)u*. The intentive is used in an expression (essentially in a monologue), for which the speaker does not presuppose the presence of the addressee(s); in contrast, the promissive is most typically used to communicate the speaker’s decisions to the addressee(s). As such, the promissive *-(r)u* form is infelicitous as a monologue, but the intentive *-(y)oo* is not. Compare (80)a and b (adapted from Moriyama (2000: 69)):

- (80) [In a room alone]
 a. ?? Kaer-u.¹²
 go home-Prm
 b. Kaer-oo.
 go home-Int
 ‘I’m going home.’

It is not always easy to distinguish the nonpast *-(r)u* from the promissive *-(r)u* as in (81).

- (81) Hatiji-ni kaer-u-yo.
 Eight-at go home-Nonpast/Prm-Prt
 ‘I’m leaving at eight. /I’ll leave at eight.’

We could interpret (81) in at least two ways: one just expresses the prediction that the speaker will leave at eight (the nonpast reading); the other expresses the speaker’s decisive attitude that he will leave at eight (the promissive reading). The distinction is rather easier when we have an overt subject referring to someone other than the speaker; this could not be a promissive (82):

- (82) Anoko-wa hatiji-ni kaer-u-yo.
 That girl-Top Eight-at go home-Nonpast/*Prm-Prt
 ‘That girl is leaving at eight.’

This section observed that the Japanese *-(r)u* suffix marks both the nonpast tense and the promissive force. In its promissive use, the subject always refers to the speaker. Furthermore, there is an important contrast between the promissive and the tentative in that only the former presupposes the presence of the addressee(s).

2.7.5. Root Exhortatives

We now look into the use of the exhortative *-(y)oo* in roots. It is phonologically identical with the tentative suffix, but I follow Fujii (2006) in treating them as two different suffixes. In 2.7.2, we saw that tentatives are most typically used in a monologue, or when you are talking to yourself in your mind so that no speech is involved. Here, I will confine myself to data in which *-(y)oo* is used in discourse contexts where the speaker intends to communicate his attitudes to the addressee(s). That is, *-(y)oo* in speech acts with intended addressee(s).

I observe that the exhortative *-(y)oo* in such contexts behaves in nearly the same way as *let's* in English. For example, a girl may utter (83) to ask her friends to work on their assignment together.

- (83) Kyoo shukudai si-yoo. (talking to friends)
 Today homework do-Exh
 ‘Let’s do our homework today (together).’

In (83), the subject is null, but it refers to the speaker (a girl, say Tokiko) and the addressee(s) (Tokiko’s friend(s)). We could make the subject overt with the first person plural pronoun *watasitati* ‘we’ with the *-wa* marker, which brings about a contrastive reading, or without *-wa* for a more neutral reading:

- (84) Watasitati-wa /Watasitati, kyoo shukudai si-yoo.
 we-Top/we today homework do-Exh
 ‘Let’s do our homework (together) today.’

Note that (85) with a singular first person pronoun is only felicitous as an intensitive, where the speaker does not intend to communicate her attitude to the addressee(s).

- (85) Watasi, kyoo shukudai si-yoo.
 I today homework do-Int
 ‘I’ll do my homework today.’

Now, importantly, overt subjects that refer only to the addressee(s) or some other third person give rise to ungrammaticality:

- (86) *Anatatati/*Anata/*Karera/*Kare, kyoo shukudai si-yoo.
 you.Pl./you.Sg./they/he today homework do-Exh
 Intended: ‘Why don’t/doesn’t you/you/they/he do your/their/his homework today (together).’

Thus, we might want to simply conclude that the exhortative *-(y)oo* restricts the subject to refer to both the speaker and the addressee(s). However, the observation of a wider range of data reveals that things are not quite that simple. Depending on the context of utterance, the subject of *-(y)oo* with intended addressee(s) (this tells us that it is not an intensitive) may refer only to the speaker (Nihongo Kijutsu Bunpoo Kenkyuukai (2003: 54-55), Adachi (2002: 20-24)). Consider the following:

- (87) [Seeing your wife carrying a grocery bag, you say...]
 Mot-oo.
 Carry-Exh
 ‘I’ll carry it (for you).’

The null subject in (87) is understood to refer only to the speaker himself (the husband), and crucially, it does not include the addressee (the wife), but when the expressed action is assumed to be beneficial to the addressee, the exhortative *-(y)oo* could appear felicitously. Consider another example (88) adapted from Nitta (1991: 33):

- (88) [A school teacher, trying to make her students behave...]
 Minna sizukani si-yoo/-masyo.
 Everyone quiet do-Exh./-Exh.Polite
 ‘Everyone, let’s be quiet.’

Here, the overt subject *minna* ‘everyone’ refers to the group of students the speaker (the teacher) is addressing; it does not include the speaker (the teacher), but she is emotionally involved with the students in that the action taken by the students will affect her feelings to a certain extent.

Examples (87) and (88) illustrate that the exhortative *-(y)oo* does not strictly require the subject to always refer to both the speaker and the addressee(s). Instead, the suffix suggests that the action taken either by the speaker or the addressee(s) would affect both the speaker and the addressee(s) in mutually beneficial ways.

Such mutual beneficiality plays a key role in understanding some control phenomena (e.g. control shift. See Chapter 5, section 5.9). Nevertheless, for the present purposes and for simplicity, let me just continue with the core distributional observation of the root exhortative. Contrasted with other force morphologies, the exhortative imposes person restrictions on the subject reference to include both the speaker and the addressee(s).

2.7.6. Summary: Distribution of Various Forces in Roots

This subsection summarizes the observation presented in 2.7.1 to 2.7.5. Of the five force types, optatives, intentives, imperatives, promissives, and exhortatives, the first two, optatives and intentives do not necessarily presuppose the presence of the addressee(s); the last three do. In particular, intentives are essentially used in monologues and self-thinking; once they are intentionally uttered towards the addressee(s), they lose their intensitive construals and exhortative construals are forced. Optatives may be uttered either when the addressee(s) are present or when they are absent. A speaker may use the optative to express his hopes, wishes, and desires to some intended addressee(s), but he may also use optative expressions in a monologue or to internally (not verbally) declare his emotions.

In contrast, imperatives, promissives, and exhortatives all require the presence of the addressee(s) in the speech act. This requirement is obvious for the imperatives and exhortatives because the subject of the former is obligatorily understood to refer to the addressee(s), and the latter requires that the subject includes both the speaker and the addressee(s) (except in special contexts just discussed in the previous subsection). It is particularly crucial for promissives that they presuppose the presence of the addressee(s) even though they prohibit the inclusion of the

addressee(s) in the reference of the subject. Promissives are distinct from intentives in that the speaker employs the promissive with the intention of notifying the addressee(s) of his decisions and commitments.

The following table summarizes the observed person restrictions on the subject by force types with the information regarding the optionality/requirement of the presence of the addressee(s).

(89)

Force	Subject Reference	Presence of Addressee(s)
optative	+speaker, (-addressee)	Optional for optative, prohibited for intentive
intentive	+speaker	
imperative	-speaker, +addressee	Always presupposed
promissive	+speaker, -addressee	
exhortative	+speaker, +addressee	

Note that the optionality of the presence of the addressee(s) is indicated with the parentheses “(-addressee)” for the optative; for the intentive, no-indication of the addressee is meant to represent the required absence of the addressee(s).

Recall the suggestion by Portner (2004, 2007) and Zanuttini et al. (2012) that imperatives, promissives, and exhortatives impose referential restrictions on the subject in the following way ((51) is repeated here as (90)):

- (90) imperative: inclusive of addressee_C exclusive of speaker_C
 promissive: inclusive of speaker_C exclusive of addressee_C
 exhortative: inclusive of speaker_C and addressee_C

The observation on the Japanese root imperatives, promissives, and exhortatives summarized in (89) fully supports their proposal.

Lastly, some may wonder why I pay so much attention to the presence/absence of the addressee(s). This is because this contrast bears great significance in the person system of language. Not all linguistic activities involve the addressee(s). This fact seems to have often

escaped linguists' attention. For instance, Cysouw (2003) and Harbour (2016) seem to take it for granted that the addressee(s) are always there when we use language. However, in monologues and thinking activities, there are no addressee(s) and thus, we will have no syntactic representation of the addressee(s). Strictly speaking, we have no first person inclusive or second person pronouns and agreements in those types of linguistic activities. Obviously, one could make oneself the addressee. John may utter or think to himself, *You can do it, John!* However, in other *pure* monologues and self-thinking where one does not conceive of oneself as the addressee, there is no addressee representation in syntax, and as a consequence the entire person system alters. Observe the contrast in (91)ab:

- (91) a. In conversations with the addressee(s):
- +speaker, -addressee: first person exclusive
 - +speaker, +addressee: first person inclusive
 - speaker, + addressee: second person
 - speaker, -addressee: third person
- b. In *pure* monologues and self-thinking without the addressee(s):
- +speaker: first person
 - speaker: third person

2.8. Interim Proposal

Consider again the Japanese complement control examples (7) to (11), repeated here as (92) to (96) with the new notations under the proposed framework:

- (92) Tokiko-wa [OPT PRO_{+Sp} daigaku-e iki-tai-to] negat-ta.
Tokiko-Top [university-to go-Opt-C_{to}] hope-Past
‘Tokiko hoped to go to university.’
- (93) Tokiko-wa [INT PRO_{+Sp} daigaku-e ik-oo-to] kime-ta.
Tokiko-Top [university-to go-Int-C_{to}] decide-Past
‘Tokiko decided to go to university.’

- (94) Tokiko-wa Takuya-ni [IMP PRO_{-Sp +Ad} daigaku-e ik-e-to]
Tokiko-Top Takuya-Dat [university-to go-Imp-C_{to}]
meireisi-ta.
order-Past
‘Tokiko ordered Takuya to go to university.’
- (95) Tokiko-wa Takuya-ni [PRM PRO_{+Sp -Ad} daigaku-e ik-u-to]
Tokiko-Top Takuya-Dat [university-to go-Prm-C_{to}]
yakusokusi-ta.
promise-Past
‘Tokiko promised Takuya to go to university.’
- (96) Tokiko-wa Takuya-ni [EXH PRO_{+Sp +Ad} daigaku-e ik-oo-to]
Tokiko-Top Takuya-Dat [university-to go-Exh-C_{to}]
teiansi-ta.
propose-Past
‘Tokiko proposed to Takuya to go to university (together).’

We saw that the complement in these examples has its own force (indicated as OPT=optative, INT=intentive, IMP=imperative, PRM=promissive, and EXH=exhortative) distinct from the matrix clause. The reference of the complement subject is restricted in a particular way (\pm speaker \pm addressee) depending on the force type. Various control patterns such as subject control in (92), (93), and (95), object control in (94), and split control (96) are taken as corollaries of person restrictions by force. A selectional relationship holds between the matrix predicate and the complement force. The information pertaining to controller determination (e.g. *promise* is a subject control predicate, *order* is an object control predicate, and so on) is not lexically specified as such. Controller determination is reduced to force selection on a par with selection of questions by *know* and *find out* (Grimshaw (1979)).

Although English control complements phonologically show no signs of independent force, I propose that they covertly bear a specific force parallel to the Japanese control complements in the above examples. Consider the following:

- (97) John hoped [OPT PRO_{+Sp (-Ad)} to win]. (subject control)

- (98) John decided [_{INT} PRO_{+Sp} to leave]. (subject control)
- (99) John ordered Bill [_{IMP} PRO_{-Sp +Ad} to leave]. (object control)
- (100) John promised Bill [_{PRM} PRO_{+Sp -Ad} to leave]. (subject control across object)
- (101) John proposed to Mary [_{EXH} PRO_{+Sp +Ad} to meet each other at 6]. (split control)

The complement in (97) is an optative, so that the subject includes the speaker but excludes the addressee of the relevant context. The relevant context for the control complement is not the speech context of the entire sentence but that of the reported event expressed in the matrix clause. The speaker and the addressee in such context correspond roughly to Schlenker's (2003b) shifted indexicals. The matrix clause provides the contextual information with which we figure out who actually holds the attitude expressed by the optative complement. It turns out John is the attitude holder, the author or the speaker of the context relevant for the complement. We use the term *speaker* to cover not only the speaker of speech acts but also the author and experiencer of mental attitudes. Note that I assume no direct syntactic relation (i.e. coindexation or binding) between the matrix argument and PRO.

To foreshadow, I will posit a context defining head representing shifted discourse participants, time, and location within the complement structure. This head should not be confounded with the head that bears specific person values like first person or +speaker, proposed for instance in Zanuttini et al. (2012) and Hasegawa (2009). It just defines the context of speech (shifted or unshifted) as a tuple of coordinates, speaker, addressee, time, and location. As I will discuss later, PRO is borne with \pm speaker/ \pm addressee values, just like the overt first/second person pronouns; it agrees with this head so that it can properly be interpreted under the relevant context; this agreement determines whether PRO is the speaker/addressee of the entire utterance context, or that of the reported, shifted context. PRO then moves up to the clausal edge to serve as a property creating λ -abstractor (as in Chierchia (1990)). As such, the speaker and addressee representations on PRO correspond to the shifted discourse participants. The present study does not posit a lexical item PRO. Instead, PRO is taken to be a derivative of syntactic operations representing an operator-trace chain (see Chapter 3 and Chapter 4).

Likewise, in the intensitive complement in (98), the reference of the subject is restricted to be inclusive of the speaker. The addressee value is not indicated for the intensitive (98) but put

in parentheses for the optative in (97); this reflects the absence of and the optionality of the presence of the addressee(s). Everything goes similarly for the imperative complement in (99), for the promissive complement in (100), and for the exhortative complement in (101). As discussed in section 2.6, we are forced to interpret the null subject to include or exclude certain discourse participants as defined by the complement force. If the subject reference falls outside the admitted range, the complement has to remain undefined in LF; as a consequence, the entire sentence remains undefined.

An issue that needs clarification here is about the selectional relationship between the matrix predicate and the complement force. Again, as briefly discussed in section 2.6, in the proposed selectional relationship, the matrix clause does not determine or assign specific forces to its complement. The complement bears its own force independently from the matrix clause even before merging with the matrix predicate. Thus, the direction of selection could rather go in an opposite direction: the complement force selects certain matrix predicates. When the *wrong* predicate co-occurs with the complement, the entire sentence turns out ungrammatical or undefined in LF; only when the *right* predicate appears, can the sentence be defined.

Another issue requires some discussion here. It is about how clauses are typed as an optative, imperative, and so on. According to Portner (2004: 236), previous literature has assumed at least two ways of clause typing. The first way assumes that the force of a clause is typed via a special linguistic element that encodes the force (e.g. imperative, promissive, and exhortative). For instance, Han (2000), Jensen (2003), Bennis (2007), and Hasegawa (2009, 2010), which presuppose a special functional head such as the imperative T, C, or Force head, would fall under this type. My previous works (Matsuda (2015ab)) can also be grouped with this type; I posited a functional head C_{imp} responsible for the addressee-oriented reference of the imperative subject. The second way holds that the clausal force is typed in a more abstract way as a consequence of multiple grammatical properties as presupposed in the construction grammar. For example, a *wh*-operator or subject-auxiliary inversion may indicate its construction type as in English interrogatives. Portner (2004) takes neither of these approaches. He proposes that form-force correspondence is assured only by morphosyntactic atoms compositionally contributing to the truth conditions of the clause. As such, for Portner (2004) there is no formal

syntactic marker for force. A specific force, say the imperative force, is a consequence of structural configurations and interactions of morphosyntactic atoms that give rise to a property denoting clause with referential restrictions.

The present proposal takes full advantage of Portner's view. Recall the denotation of the imperative such as *Sit down!* set forth by Portner (2004, 2007). (102) repeats (50).


(102) $\llbracket \text{Sit down!} \rrbracket = [\lambda w. \lambda x : x = \text{addressee}_C. x \text{ sits down in } w]$

(Portner (2007: 358))

The requirement that x is the addressee of the context is provided as a domain restriction. Imperatives denote a property, which is defined only if it is applied to the addressee of the discourse context. The issue is how such a domain restriction could be represented syntactically, without introducing the force-specific head such as C_{imp} , or such heads as C_{prm} , C_{opt} , and so on for the other related force types.

For this issue, I will draw on the studies on *de se* attitude reports such as Chierchia (1990), Percus and Sauerland (2003ab), and Pearson (2013, 2016) (see Chapter 3). Under these works, *de se* attitude complements come to denote a property via λ -abstraction over the complement subject. In particular, Percus and Sauerland (2003ab) suggest pronoun movement for such abstraction. Based on this view, I assume that the imperative is formed by movement of the subject to a higher position as in (103). A corresponding PC complement would look like (104) under this assumption.

(103) $[\lambda x [x \text{ leave}]]$.



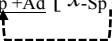
(104) John ordered Bill $[\lambda x [x \text{ to leave}]]$.



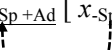
However, this does not solve the subject restriction issue; the subject reference will not be restricted to groups inclusive of the addressee of the context for the imperative. I hold that such restrictions arise from the subject itself bearing the speaker and/or the addressee features. This sounds highly stipulative, but after all, the overt first/second person pronouns such as the English *I*, *we*, *you* bear these features (see Chapter 4, section 4.3). I am just generalizing such features to the imperative subject and PC PRO.¹³ Thus, in my view, the imperative is formed by moving the

subject (more precisely, a part of the subject; see Chapter 4, section 4.6) which already restricts its reference to the addressee (105); PC involves a similar derivation (106). Although not shown in (105) and (106), the subject has agreed with T (and plausibly with a head that describes the aspectual property of the imperative) before abstraction, so the subject also bears some temporal properties which defines the imperative force compositionally.

(105) [λx_{-Sp+Ad} [x_{-Sp+Ad} leave]].

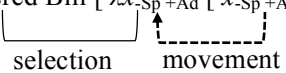


(106) John ordered Bill [λx_{-Sp+Ad} [x_{-Sp+Ad} to leave]].



In this system, a special imperative head like C_{imp} is not required. The restriction arises due to the relevant feature representation inside the subject. Thus, strictly speaking, we do not need the explicit notation of the force in the clausal complement as we did in (92) to (96) and in (97) to (101). It is not syntactically *typed* as the imperative, promissive, and so on. I indicate the force only for clarification; it should not be taken as a syntactically encoded representation. Furthermore, under the present proposal, PRO is just a theoretical representation for the λ -abductor-trace chain in (106). As such, PRO should not be taken as a lexical item. The present thesis employs the PRO notation only for theoretical perspicuity. The syntactic structure of (99), for instance, can most simply be represented as (107), although I will keep the force and the PRO notations in the rest of the thesis for clarification.

(107) John ordered Bill [λx_{-Sp+Ad} [x_{-Sp+Ad} to leave]].



A crucial difference between the proposal made by the previous studies such as Zanuttini et al. (2012) and Hasegawa (2009) on the one hand and mine on the other is that the former assumes a certain head in the CP domain to enter the derivation with the person feature pre-valued, which in effect restricts the subject reference; while in the latter, person feature values originate in the subject just like overt pronouns. My intention here is to *not* bring in a special device like a prevalued head, which only serves the purpose of these types of clauses; and to be more faithful to the compositional view of Portner (2004, 2007).

2.9. Empirical Consequences

Lastly, I will discuss the empirical consequences of my proposal. It naturally accounts for subject, object, and split control as just illustrated above. It also accounts for vague and non-identity control relations such as implicit control, control shift, and partial control. Recall that these atypical control relations are only observed in PC, but not in EC.

2.9.1. Implicit Control

Implicit control as in (108) taken from Koster (1984: 429) becomes explainable under my assumptions. In fact, implicit control provides strong support for the present proposal.

(108) My teacher suggested (to me_i) PRO_i to take another topic.

(108) illustrates that the matrix dative argument can be omitted, yet we understand PRO to refer to *me*. I assume that the complement is an imperative as in (109).

(109) My teacher suggested (to me) [_{IMP} PRO-_{Sp +Ad} to take another topic].

A consequence of (109) is that the reference of PRO has to be interpreted to include the addressee and exclude the speaker of the shifted context, the context of suggestion. This correctly predicts that PRO refers to *me* if the context has it that the suggestion was directed to *me*, the speaker of the entire utterance. However, under my proposal, the specific reference of PRO can be syntactically unspecified. Syntax only says that PRO refers to whoever the suggestion is addressed to. PRO may be understood to refer to John (distinct from the reference of *me*) if the previous discourse context tells us that John is the addressee, the receiver of the suggestion. PRO may refer to any set of individuals inclusive of the addressee(s) in the shifted reported context. Indeed, if (109) is uttered by a student working on an assignment as part of a team, and the context has it that the suggestion was addressed to the student, PRO may be understood to refer to a group of individuals including that student. This would be an instance of implicit partial control.

In fact, the predicate *suggest* also seems to select an exhortative. Consider the example below from Kimiko Nakanishi (p.c.).¹⁴ The indices and PRO are added to illustrate my analyses of these sentences. I also added the implicit dative which should be understood as referring to *me*, or the speaker of the entire sentence.

- (110) a. When Nick_i asked me_j out the very first time, he_i suggested (to me_j) PRO_{i+j} to meet in Santa Monica.
- b. We_{i+j} have been emailing (just short emails) every now and then and now he_i suggested (to me_j) PRO_{i+j} to meet in Moscow.

Some traditional views, which attempted to reduce control to binding (Manzini (1983), Borer (1989)), suffer severely from data like (109) and (110), since binding requires a binder to be locally and syntactically present. Observe the contrast between control ((111)a) and binding ((111)b), suggested in Lasnik (1992):

- (111) a. Mary_i thought that John said (to her_i) PRO_i to wash herself_i.
- b. Mary_i thought that John talked *(to her_i) about herself_i.

Rizzi (1986) proposes two distinct types of implicit arguments: one is *pro*, which is visible to both control and binding and the other is an element only visible to control but not to binding. Landau (2010) argues that implicit controller arguments bear certain ϕ -features but lack D-features, which makes them phonologically null. In contrast, my proposal assumes no syntactic representation of the implicit controller. It assumes no DP controller to begin with.¹⁵ The interpretation of PRO directly comes from it being an imperative subject referring to the addressee(s) of the relevant context. The issue remains as to how the agreement on the reflexive *herself* in (111)a is brought about under my assumption. This will be dealt with in Chapter 4 and Chapter 6.

2.9.2. Control Shift

Some instances of control shift or variable control fall out naturally under the present framework. Observe (112) adapted from Rooryck (2000: 75).

- (112) Kim_i proposed to Sandy_j [PRO_{i/j/i+j} to do the dishes].

A sentence like the above is three-way ambiguous: PRO is understood to be either Kim or Sandy or both Kim and Sandy. I argue that this type of variable control results from selection (section 2.5). The English predicate *propose* is compatible with at least three force types: imperative, promissive, and exhortative. Recall that a selectional relationship between predicates and complement force types is not a one-to-one relationship. Three readings associated with (112) correspond to three distinct configurations below:

- (113) a. Kim proposed to Sandy [_{IMP} PRO-_{Sp +Ad} to do the dishes].
 b. Kim proposed to Sandy [_{PRM} PRO-_{Sp -Ad} to do the dishes].
 c. Kim proposed to Sandy [_{EXH} PRO-_{Sp +Ad} to do the dishes].

Nevertheless, some other instances of control shift, typically the *be-allowed-to* shift as in (114) (taken from Landau (2000: 184)), seems to deserve a different account. I will come back to this issue in Chapter 6.

- (114) Susie_i persuaded the teacher [PRO_i to be allowed to leave early].

2.9.3. Partial Control

Accounting for partial control is one of the major goals of the entire thesis. I will discuss this issue again in detail in Chapter 5. What follows is a brief overview. Consider (115). The reference of the alleged controller argument *John* constitutes only a subset of the reference of PRO. The present study views it as an instance of imperative embedding as in (116).

- (115) Mary recommended to John_i [PRO_{i+} to convene without her].

- (116) Mary recommended to John [_{IMP} PRO-_{Sp +Ad} to convene without her].

I argue that the notion of *associative semantics* bears great significance here. Under the present framework, PRO is an indexical personal pronoun directly picking out its reference from the relevant context. It is a shifted counterpart of the English type first and second person pronouns. Cross-linguistically, it has been found that these indexical pronouns inherently involve associativity (Noyer (1992), Bobaljik (2008), Cysouw (2003), Harbour (2016), Wechsler (2010)). As is often noted, the first- and the second-person plural forms do not always refer to multiple speakers or addressees. Instead, they refer to a group of people, in which the speaker or the addressee is included. The first person reference set does not have multiple speakers as its members; it just includes the speaker as one of the members. Thus, the first person reference set is identical to the speaker only when its cardinality is one (*I*=the speaker). In the other cases where the cardinality is more than one, the set refers to the speaker plus some others. As such, without the number specification, the first person pronoun is free to refer to the speaker or the speaker plus some others.¹⁶ Likewise, the second person pronoun may refer to the addressee(s) (multiple addressee(s) are possible) or addressee(s) plus some others as long as it excludes the speaker. Wechsler (2010)

views the associative nature of the first and second person pronouns to be universal, which is supported by cross-linguistic evidence. We find many different variations of personal pronoun systems in the world's languages, but some logical alternatives are not attested. Consider (117), based on Wechsler (2010: 335).

(117) The Seven Logically Possible Meta-persons, and the Four Attested Pronoun Types

Possible		Attested
1+2	speaker(s) and addressee(s); no others	A. first inclusive
1+2+3	speaker(s), addressee(s), and other(s)	+Sp +Ad
1	speaker(s) only	B. first exclusive
1+3	speaker(s) and other(s); addressees excluded	+Sp -Ad
2	addressee(s) only	C. second
2+3	addressee(s) and other(s); speakers excluded	-Sp +Ad
3	other(s) only	D. third person -Sp -Ad

In (117), in the left column, 1 stands for the speaker, 2 for the addressee, and 3 for any non-participant(s) in the context of speech. There are seven logically possible combinations of 1, 2, and 3. These possible combinations or *meta-persons* are shown in the left column. However, only four-way distinctions (A to D) at maximum as shown in the right column have been attested in the world's languages. Note that apart from D, third person, there is no pronominal category that prohibits the inclusion of non-participants (*other(s)*) or requires the inclusion of them. For the attested categories A, B, and C, *other* non-participants may freely be included or excluded from their reference without changes in their categories. It seems that associative semantics is inherent in the speaker/addressee personal indexicals. Importantly, the present study proposes that PC PRO is one of those indexicals (see Chapter 4).

Now in (116), PRO is conceived of as an imperative subject; it may refer to any set of individuals inclusive of the addressee(s) exclusive of the speaker. The imperative subject may be singular or plural. Thus, without context, the reference set may be a singleton (with the addressee as its only member) or a non-singleton, but since the complement predicate *convene* requires a collective or plural subject, only a non-singleton set qualifies. However, in the shifted context of (116), John (more precisely, the person referred to as *John* in the matrix clause) is the addressee.

This means that the reference of PRO in (116) has to be inclusive of John, and also has to be at least semantically plural. This necessarily leads to a partial (addressee-plus-others) reading.

The availability of partial readings with respect to the addressee(s) of the context is also observed in root imperatives. The examples from Potsdam (1996: 207) in (118) illustrate that the subject of the imperative may be a superset of the addressee(s).

- (118) a. *You and your men* be on guard for anything suspicious!
b. *You and William* do the cooking and I'll provide the wine!
c. *You and them* make a deal! I'm out of this.

The subjects in these examples refer not only to some individual(s) included in the group of the addressee(s), but to the addressee(s) plus some others. The referent of the imperative subject, occurring in the form of the second person plural pronoun such as *you all*, may also include a single addressee plus some others or multiples addressee(s) plus some others. Here, *some others* may well be non-participants of the speech context. Such interpretations are possible in the examples in (119) taken from Potsdam (1996: 208).

- (119) a. Your family is going camping for the week?!
Well, *you all* have a good time! Don't *you all* spend the whole time fighting!
b. You and your wife are vacationing in Cambodia?!
You all be careful of those land mines!

The interpretations of both (119)ab allow that not all members of the reference of *you all* are present at the time and place of the utterance of the imperative.

In fact, in some cases, the imperative subject may be disjoint in reference to the group of addressee(s) as in (120). In these examples too, however, the addressee(s) seem to have at least some involvement in the group referred to by the imperative subject. A data set like (120), taken from Potsdam (1996: 208), bears significance in accounting for control shift in Chapter 5 and Chapter 6.

- (120) a. *YOUR soldiers* build the bridge, General Lee!
b. *Your guards* be the diversion while we sneak in!
c. *Those children of yours* keep out of my garden, or I'll set the dog on them!

Chapter 3. PRO as a Relative Pronoun

3.1. Issue and Overview

The question addressed in this chapter is the following:

- (1) How does PC PRO come to be interpreted obligatorily *de se*?

In my previous papers (Matsuda (2015ab, 2017ab)), I just assumed that PRO induces obligatory *de se* (or *de te*) readings because it is a shifted counterpart of the first and second person pronouns. Based on Wechsler's (2010) analysis that the first and second person pronouns are inherently read *de se/te*, I simply held that this property of the first/second person extends to PRO. However, I have come to realize that certain instances of the first/second person pronouns are not so purely read *de se*. They may be read *de se* through *de re* construals.

For instance, imagine yourself looking at a picture in which you are smiling with your friends. You want to share it with your parents. Showing the picture to them, you may say:

- (2) Look at me. I look so happy.

Now, imagine yourself spending an exciting time with your friends, perhaps at a party. You feel so happy and may say to yourself:

- (3) Oh boy, I'm happy.

The two uses of *I*, one in (2) and the other in (3), seem to designate two different objects. The *I* in (2) designates the figure in the photo, who you identify as the same individual as yourself, but the figure you may be pointing at in the picture is obviously not you yourself. In contrast, the *I* in (3) designates nothing but you yourself. Importantly, the declarative sentences *I look happy* in (2) and *I'm happy* in (3) are assertions, a type of attitude expressed by the attitude holder, the speaker in these cases.

Both uses of *I*, the *I* in (2) and the *I* in (3), ultimately amount to a *de se* reading. They both seem to satisfy the aboutness and awareness conditions of *de se* construals (see section 3.2) posed by Pearson (2013, 2016). Nonetheless, the interpretative process for the *I* in (2) may involve two steps. First, you find that the figure in the picture looks happy, and then, you identify the figure you are looking at to be yourself. Thus, the *de se* reading for the *I* in (2) is indirect, and obtains via a *de re* construal. In contrast, the *I* in (3) is directly read *de se*. The notion that the

first person *I* may be read *de se* via *de re* is discussed in Higginbotham (2010). I assume that the contrast between the two *Is* above bears morphosyntactic significance.

PRO corresponds to the *I* in (3). PRO induces direct *de se* construals. Consider the following two sentences adapted from Higginbotham (2009: 224):

- (4) a. I remember *my* saying John should finish his thesis by July.
- b. I remember PRO saying John should finish his thesis by July.

Both (4)a and b describe the same event, but there is an important interpretative difference. I would say (4)b only if I remember the event in which I said *John should finish his thesis by July* as “an action I performed”; contrastingly I could say (4)a when I remember it “as an event I witnessed” (Higginbotham (2009: 225)). If I only remember the event as hearing the words *John should...* which happened to be uttered by me, but do not remember actually speaking those words, then, only (4)a truthfully describes my state of memory. (4)b with PRO is true only if I do actually remember saying the words. This observation led Higginbotham (2009: 226) to say PRO is “more first-personal than the reflexive forms, and even more first-personal than the first-person pronoun itself.”

As such, the *de se* nature of PRO cannot be simply reduced to the *de se/te* nature of the first/second person. There seems to be at least two kinds of the first person pronoun *I*, one directly gives rise to a *de se* construal and the other indirectly through *de re*, of which PRO corresponds to the former. We need a much deeper understanding of what constitutes *de se*.

Exploration of the nature of *de se* necessarily leads to the second question discussed in this chapter:

- (5) Do control complements denote properties or propositions?

Various views have been expressed in the literature. Most of the syntactic contributions to this area have assumed that control complements are propositions. Simply put, the propositional view presupposes that there is a semantic and/or syntactic representation of a subject within the control infinitival complements. Such a view has been adopted by Rosenbaum’s (1967) Equi-NP deletion analysis, followed by most of the studies during the GB period (Chomsky (1981), Manzini (1983), Koster (1984), Borer (1989), among others). Those analyses presented after the introduction of Minimalism (Chomsky (1993)) such as Hornstein (1999) and Landau (2000) have

also assumed the propositional view. However, from a semantic perspective, Dowty (1985) argued that embedded infinitives are essentially bare VPs denoting properties, and that control predicates express a relation between the referent of the matrix argument and the property denoted by the complement. Some earlier works of Chierchia (1984, 1985) also assumed that the infinitival control complements semantically correspond to subject-lacking properties. Chierchia (1985) even argued that the embedded infinitival VP is a nominalized property, which is incapable of taking a subject for predication. Under these property views, the meaning postulates or entailments of the control predicate were accounted as wholly responsible for the connection between the matrix argument (i.e. the alleged controller) and the property denoted by the embedded VP.

Thus, it appears as though these arguments split into two types: one type holds that control complements are proposition-denoting full clauses; and the other type contends that they are VPs representing properties. Such a dichotomous perspective may lead some to assume that a control infinitive being clausal or a full CP entails its propositional denotation. However, this is not the case. Williams' (1980) proposal was that the infinitive in control can be a full clause, yet its semantics may be equated to that of a predicate, and be more property-like in nature. Then comes the influential work of Chierchia (1990) on *de se* thoughts, where the infinitive was assumed to be clausal, but denote a property. This is possible via λ -abstraction taking over the subject. Chierchia's idea, in essence, dates back to Lewis' (1979) discussion on the possibility of all sentences denoting a property.

Since the turn of the century, we have seen important developments in the semantic literature on issues surrounding the *de se* nature of certain instances of PRO (i.e. PC PRO) and other attitude reports (Anand (2006), Pearson (2013, 2016), Percus and Sauerland (2003ab)). They mostly presuppose the property view of control infinitives following Chierchia (1990).

The present thesis follows this line of thought, and assumes that control infinitives are full CPs that denote a property. Strikingly, the property view converges with my proposal presented in the previous chapter that PC complements are imperatives and some other related force types. The semantic denotations for imperatives and other related clause types provided in Portner (2004) look extremely similar to those for control infinitives and *de se* attitude

complements under the property view. Portner explicitly posits the idea that imperatives denote a property formed by abstracting over the subject argument. This chapter is meant to capture the *de se* nature of PC PRO, but at the same time, it lends strong support for the force-based proposal set forth in the previous chapter.

The conclusion drawn from the discussion in this chapter will be that PRO behaves like the relative pronoun *who*. The relative pronoun *who* has the feature [+human] in that its reference can only be humans or animate entities close to humans. I will propose that the features on PRO are more specified than *who* in that PRO (PC PRO) bears discourse participant features such as [±Sp] and [±Ad]. This argument directly builds on Percus and Sauerland's (2003ab) proposal in which the *de se he* (Castañeda's *he**) is treated like a relative pronoun. Percus and Sauerland suggest that the *de se* construed *he* moves up to the clausal edge (at least in LF) to create a self-ascriptive property out of a proposition. I will employ this view in my analysis on PRO. My argument, however, departs slightly from Percus and Sauerland's: they seem to assume that the entire DP *he* moves; I will posit, instead, that only a certain part of the null DP moves.

3.2. Attitudes *De se*

What is *de se*? To shed light on the mechanism that underlies *de se* and partial control, we need a deeper understanding of *de se* construals. Consider again how PRO contrasts with the pronoun *he* in the interpretation. The scenario (6) and the sentences (7)ab are adopted from Schlenker (2003b: 61):

- (6) Scenario: John is so drunk that he has forgotten that he is a candidate in the election. He watches someone on TV and finds that that person is a terrific candidate, who should definitely be elected. Unbeknownst to John, the candidate he is watching on TV is John himself.
- (7) a. John hopes that he will be elected.
b. John hopes PRO to be elected.

While there is at least one reading in (7)a which truly describes the situation in the scenario, no such reading is available in (7)b. Taken that *he* is understood to be John, (7)a describes John's mental attitudes where he might have thought either "That candidate should win" or "I should

win.” In contrast, (7)b only represents John’s attitude which he has expressed as “I should win.” Since in the scenario, John only thinks that “That candidate should win” being unaware that the candidate is in fact he himself, (7)b with PRO cannot stand to be true. Informally speaking, the type of attitudes that would involve *I* if the attitude holder were to directly express his thoughts, beliefs, or hopes is called attitudes *de se*. The terminology attitude *de se* is coined by Lewis (1979).

There is another notion, *de te*, which specifically designates the individual who the attitude holder bearing *de se* thoughts identifies in his (the attitude holder’s) thoughts as his addressee. The scenario that helps clarify the notion of *de te* goes as follows (taken from Schlenker (2011: 1573), a similar story is also mentioned in Schlenker (1999: 80)):

- (8) Scenario: At a party, John is told that somebody named “Mary” is being particularly obnoxious. He tells the person he is having a conversation with: “Mary should leave.” But that person is none other than Mary herself.
- (9) a. John told Mary that she should leave.
 b. John told Mary PRO to leave.

(9)a describes the situation truly, but (9)b does not. (9)a, taking *she* to designate Mary, describes the situation in which John might have expressed his attitude as either “The person named Mary should leave,” or “You should leave” towards the person he is speaking to. Only the former is true for the scenario. Contrastingly, (9)b only expresses John’s attitude which John would have stated as “You should leave.” This does not truly describe the situation. The type of attitudes John would express with the second person pronoun in his thoughts or direct speech is called *de te*. (9)b only gives rise to a *de te* construal, but (9)a may be construed either *de te* or non-*de te*.

Unfortunately, the notion of *de te* is not as much discussed as the notion of *de se* in the literature. The discussion in the rest of this chapter focuses on the notion of *de se* attitudes, which serves as a basis for understanding the nature of *de te* attitudes. As one might have noticed, *de te* is really an extension of, or arises from, attitudes *de se*. One must hold attitudes *de se* first to hold attitudes *de te*.

Back to *de se*. Researchers, representatively Higginbotham (1992, 2009, 2010), often conceive of *de se* thoughts as inherently connected to first person thoughts, and depict PRO in

subject control as in (7)b as involving some sort of *first personness*. According to Pearson (2016: 4), the notion of attitude *de se* can be defined as in (10).

- (10) An *attitude de se* is an attitude – a belief, desire, expectation etc. – that has the following properties:
- (i) the attitude is about the attitude holder *and* (aboutness condition)
 - (ii) the attitude holder is aware that the attitude is about herself (awareness condition)

An extended version of Pearson's *awareness condition* is found in Pearson (2013: 2), which, I believe, defines the notion more clearly (11).

- (11) A sentence S reports an attitude *de se* only if its truth depends on the bearer of the attitude being aware that the individual whom the attitude is about is herself.

However, the awareness condition for *de se* is very difficult to define in simple terms. Although (11) concisely captures the important ingredients of *de se* awareness, there is one more element that needs to be added. Of course, Pearson (2013) is fully aware of this; it is just not expressed in (11). The way that the bearer of the attitude is aware that the attitude is *about herself* needs to be more constrained to qualify as *de se*, or direct *de se*. She must be aware that the attitude is *about herself at the time and place* she is bearing the attitude. This constraint bears significance for my discussion. For instance, the construals for the two *Is* I mentioned in the beginning of this chapter in (2) and (3) (*I look so happy* vs. *I'm happy*) would not be distinguishable without the constraint; they would both fall under direct *de se*. When the speaker asserts her attitude by uttering *I look happy*, she is aware that the attitude is about herself, or else she would not have used the first person pronoun *I*. However, the attitude is not about herself at the time and place she is holding the attitude; it is about herself in the picture, taken some time in the past at a distinct location from where she now stands. Contrastingly, when the speaker utters *I'm happy*, she is aware that her assertive attitude is about herself at the time and place she is bearing the attitude. Direct *de se* attitudes involve *I, here, and now* if the attitude holder were to express her attitude directly. The distinction is important because this is exactly the difference between the first person pronoun *I* and PRO. PRO is always directly read *de se* but *I* may or may not be. In the following discussion, the term *de se* is used exclusively for direct *de se*, unless otherwise mentioned.

Now returning to (7)ab repeated here as (12)ab.

- (12) a. John hopes that he will be elected.
b. John hopes PRO to be elected.

Recall that (12)a may be read either *de se* or *de re*; (12)b may only be read *de se*. Crucially, the observation that both (12)a and b may express attitude *de se* implies that there is at least one form of LF that is shared between the two sentences, putting aside the finiteness contrast of the complements. Both sentences have the LF of attitude *de se*. Sentence (12)a may have some other LF forms corresponding to its non-*de se* construal, but sentence (12)b plausibly has only *de se* LF. Thus, getting a very good grasp of what this common LF looks like is indispensable for understanding the *de se* nature of PRO.

3.3. *He**

An important notion, Castañeda's *he**, needs to be introduced (Castañeda (1966, 1967ab, 1968)) to put *de se* into better perspective. Simply put, Castañeda's *he** corresponds to *he* in (7)a or (12)a with a *de se* construal. For Castañeda, *he** is a special linguistic device which expresses self-consciousness, self-knowledge, or self-belief. *He** points to the object known by the individual who knows it as himself. Most significantly, Castañeda suggests that the use of *he** is irreducible to other notable uses of *he* (Castañeda (1966), in particular) and clearly argued for a special grammatical status of *he**. For instance, *he** cannot be reduced to *he* used ostensibly as a demonstrative pronoun as in (13).

- (13) Look, *he* is naked. (with a pointing gesture)

*He** should also be distinguished from the use of *he* as a quantifier (14) or a variable bound to a quantifier (15).

- (14) *He* who marries young will get divorced.
(15) Anyone who marries young is such that *he* will get divorced.

Nor can *he** be treated equivalently to various anaphoric uses of *he* in sentences such as the following:

- (16) If John comes late, *he* will call.
(17) John thinks of David that *he* is happy.

(18) If the editor of *Language* remembers it, *he* will notify you about it.¹

All uses of *he* in the above examples are contrasted with the use of *he** in sentences like (19), the oft-cited sentence of Castañeda's:

(19) The Editor of *Soul* knows that *he** is a millionaire.

Most importantly, (19) is a different statement from (20).

(20) The Editor of *Soul* knows that the Editor of *Soul* is a millionaire.

(19) and (20) do not entail each other. (19) does not entail (20) because even though the Editor of *Soul* may know *he* (himself) is a millionaire, he may not know that *he* (himself) is the Editor of *Soul*. The entailment does not hold the other way either. Under the scenario like (21), (20) is true, but (19) false.

(21) Scenario: The man just appointed to the Editor of *Soul* has not been notified of this appointment. He reads a will by which a successful but very eccentric businessman bequeathed millions of dollars to the man who is the Editor of *Soul*.

(Adapted from Castañeda (1966: 135))

The hallmark of Castañeda's discussion is that *he** cannot be replaced with a name or any other description without changing the meaning of the sentence, and this is because it specifically refers to the object identified by the person who knows it to be himself. If this person, the experiencer of knowledge, is the one who utters a sentence, he will refer to this object by *I*, but if another person is speaking, *he** will be used. In other words, if someone is to talk about some other person's self-knowledge, *he** is used.

In his own words, Castañeda said, quote:

[P]hilosophers (especially Hume and Kant) have known all along that there is no object of experience that one could perceive as the self that is doing the perceiving. However it is that one identifies an object of experience as oneself, whenever one does, one identifies an object in experience with a thing which is not part of the experience, and this thing is the one to which the person in question will refer to by 'I' (or its translation in other languages), and another person will refer to by 'he', or 'he himself' in the special S-use.*² (Castañeda (1966: 142-143))

Clearly, Castañeda's goal was not merely to point to the fact that there is a subtle difference in construal between *he* and *he**, but to convince us that language is endowed with this special device, *he**, only by which we can refer to the object of someone else's self-knowledge.³ In reality, we may never perceive this object in the same way as the person who is perceiving it, but at least we have a way to point to it. This pointer is *he**. (22) is another simple instance of *he**.

(22) Jones knows that *he** is in the hospital. (Adapted from Kretzmann (1966: 420), cited in Castañeda (1967b: 209))⁴

If Jones were the one to express his knowledge described by (22), he would say *I am in the hospital*, and the knowledge that Jones has expressed as such with the first person pronoun cannot be known to any other person in exactly the same way as Jones does. In this sense, the self-knowledge of Jones may never be shared with a person other than Jones himself. However, language has a way to refer to this knowledge via *he**. Hence, sentence (23) does not entail (22).

(23) Jones knows that Jones is in the hospital.

Strictly speaking, (22) does not entail (23) either, since Jones may not know *he** is Jones. Only under the assumption that in a normal situation any person knows his own name, may (22) entail (23).

Here I need to cite one last story, the most well-known story of an amnesic war hero, the story of a man called "Quintus." The situation is now reversed from (22), and the story described does *not* involve someone's self-knowledge. It represents a situation where a person may know all the knowledge anyone can have about that person, but he lacks one crucial piece of knowledge: That the knowledge that he knows is about him himself.

[Quintus] is brought unconscious to a military tent, but on gaining consciousness suffers from amnesia, and during the next months becomes a war hero and gets lost in combat and completely forgets the military chapter of his life. Later on Quintus studies all accounts of the war hero and discovers that he ((the hero), not he) was the only one wounded 100 times. Quintus becomes fascinated by the hero's accomplishments (for some mysterious reason unknown to him) and comes to write the most authoritative biography of the hero. Clearly, for most normal situations, regardless of*

shifts in the criteria for identifying a person, Quintus knows who the hero was much better than most people, even though Quintus does not know that he is the war hero. Since the hero is the same person as Quintus and so must know exactly what Quintus knows... (Castañeda (1968: 446))*

Compare (24) and (25) (Castañeda (1968: 446)):

(24) The war hero wounded 100 times knows who the war hero wounded 100 times is (was).

(25) The war hero wounded 100 times knows that he* is [tenselessly] the war hero wounded 100 times.

(24) holds true with respect to the story, but (25) does not. (24) does not entail (25). *He** can only be used to refer to someone's self-knowledge, and thus, (25) is incompatible with the story of the amnesic war hero.

3.4. Attitudes *De Se* as Properties

There is another important aspect to attitudes *de se* that requires discussion: the property view of Lewis (1979), who coined the term attitudes *de se*. Lewis (1979) argues that attitudes *de se* could not be reduced to propositions. His discussion is centered around how we should capture the nature of the content of our mental attitudes such as beliefs, expectations, knowledge, and desires. More concretely, he asks questions such as the following: when we expect *something* or believe *something*, what is the nature of this *something*, the object of our attitudes? He argues that although most attitudes (non-*de se* attitudes) might be taken to be propositions, *de se* attitudes, self-knowledge, self-beliefs, or self-desires just could not. Put another way, attitudes *de se* that would be described with Castañeda's *he** may not be subsumed under propositions.

Now, when Lewis says *a proposition*, he means a set of possible worlds. To him, obviously, a proposition does not mean a sentence with a certain syntactic structure, but a set of possible worlds that are compatible with the attitude. For those who say attitudes are propositions, having a belief, for instance, amounts to selecting from all possible worlds a set of possible worlds in which what the believer believes holds true. However, Lewis contends that attitudes *de se* do not fall under sets of possible worlds. They are not propositions.

To prove this, he mentions various examples. One of them is the well-known story from Perry (1977). It goes as follows:

- (26) Lingens is lost in the Stanford Library. The library has no maps with a dot showing the location of the map. To locate where he is, he may read all the books available in the library. This would certainly help him gain more and more propositional knowledge about the world he lives in, and give him fewer world options where he might be inhabiting. However, no matter how much he learns from books, unless he perceptually and physically locates himself to be, say, in aisle five, floor six, of Main Library, Stanford, he will not find his way out.

The type of knowledge required for Lingens to find his way out is not a proposition (a set of worlds) but a property. The knowledge that not only allows him to identify a set of possible worlds he might be in, but also enables him to identify a certain member of each world to be a counterpart of him (*he** himself) in the actual world. This involves self-ascription of the property of being that particular individual in his belief world. Hence, it is not a proposition, but a property. Likewise, take the amnesic war hero from Castañeda (1968). He may have all the propositional knowledge about the war hero he has so much interest in, but he lacks the property-type knowledge that *he** is the war hero he knows about. He cannot identify the war hero in his belief worlds to be the counterpart *he** himself in the actual world. That is why he cannot express his knowledge as *I am the war hero*, and thereby we cannot describe his knowledge as *He knows he* is the war hero*.

Lewis (1979) in fact makes a stronger argument that not only *de se* attitudes but all attitudes could be subsumed under properties. Very roughly put, this is because all propositions, sets of possible worlds, can also be defined as the attitude holder's self-ascription of the property of being an inhabitant of each possible world. As such, for Lewis, all contents of attitudes are properties. Nonetheless, I will just focus on the property view of *de se* attitudes, which is most crucial for the purpose of the present study. In fact, this view is very widely accepted in the studies of *de se* attitude reports including Chierchia (1990), Percus and Sauerland (2003ab), and Pearson (2013).

3.5. Property Denoting Operator

From Castañeda, we learn that *he** of attitudes *de se* has a special status in language. PRO may share whatever the properties *he** has that make it special. From Lewis, we learn that the contents of attitudes, *de se* attitudes in particular, correspond to properties. Thus, control complements with *de se* PRO may also fall under properties. The question that remains is: how do we put these notions into grammatical perspective? Chierchia (1990) makes a great contribution in this area.

Chierchia contends that the semantic structures of *de se* attitude reports correspond to those of properties, not propositions, following Lewis (1979). He assumes, contradicting Lewis however, that while *de se* attitude reports denote properties, their non-*de se* counterparts denote propositions. For Chierchia, a sentence such as (7)a cited again as (27) involves at least two distinct semantic structures corresponding to *de se* and *de re* construals. Under this assumption, it is natural that the *de se* finite structure looks similar to those of control infinitives such as (7)b, repeated here as (28).

(27) John hopes that he will win the election.

(28) John hopes PRO to win the election.

For Chierchia, to say certain structures denote properties does not imply that they have syntactically reduced structures like bare VPs. It is just the opposite: a property denoting structure requires a more complex structure than a simple proposition. It is to assume an operator above the proposition denoting IP, which creates a property out of that proposition. This operator adjoins to S' or CP, Chierchia argues. The structure of (27) with a *de se* construal under this view would look very roughly like (29)a contrasted to its *de re* counterpart (29)b, and (27), a control structure, like (30).

(29) a. $\text{John}_i \text{ hopes } [\text{Op}_i \text{ that he}_i \text{ will win the election}]$. (*de se*, *he**)

b. $\text{John}_i \text{ hopes } [\text{that he}_i \text{ will win the election}]$. (*de re*)

(30) $\text{John}_i \text{ hopes } [\text{Op}_i \text{ PRO}_i \text{ to win the election}]$.

What the operator does in (29)a and (30) is λ -abstraction over the subject of the complement.

Thus, (29)a and (30) are to be interpreted as (31)a and (32), while (29)b is interpreted as (31)b.

(31) a. $\text{hope}(\text{John}, \lambda x [x \text{ will win the election}])$ (*de se*, *he**)

b. $\lambda x [\text{hope}(x, x \text{ will win the election})](\text{John})$ (*de re*)

(32) hope (John, λx [x to win the election])

Chierchia's proposal assumes that pronouns are either directly bound to a c-commanding DP or indirectly bound via the operator at the left edge of the complement clause. When the structures denote *de se* attitude reports ((31)a and (32), i.e., *he** and PRO structures), the pronoun is bound via the operator; within those denoting non-*de se* attitudes ((31)b with *de re he*), the pronoun is directly bound to the DP (in this case *John*). According to Chierchia, the binding relation between the c-commanding DP (*John*) and the operator is ensured by coindexing between them via a control relation: a control relation, for Chierchia, is lexically specified by the matrix predicate, in this case *hope*. As such, *he* in (29)a and PRO in (30) end up coindexed to the matrix subject.

Intriguingly, Chierchia's proposal accounts for the same contrast observed between the two readings arising with the quantified matrix DP. Consider the following adapted from Chierchia (1990: 10).

- (33) a. Everyone in that room thinks he will win the election.
 b. [Everyone in that room_{*i*}] [_{*t_i*}] thinks [Op_{*i*} that [he_{*i*} will win the election]]].
(*de se*, *he**)
 c. [Everyone in that room_{*i*}] [_{*t_i*}] thinks [that he_{*i*} will win the election]].
(*de re*)

(33)a admits at least two readings. One is construed *de se* and the other *de re*. For instance, imagine a situation like (6), where everyone in the room is a drunk candidate for the election and watching campaign speeches given by themselves. Every drunk candidate might think his own speech was amazing without being aware that the person who gave the speech was in fact he himself, and say *he will win the election*. In that case, only (33)c holds true, but (33)b does not. (33)b would hold true only if every candidate were aware that the person who gave the amazing speech was he himself, and said *I will win*. Chierchia's proposal captures such contrast: *de se* arises when *he* (= *he**) is bound by the quantified DP via the operator, and *de re* arises when the binding relation is not mediated via the operator. This proves that *de se* construals cannot be reduced to direct binding to the matrix argument; neither can *de se* construals of PRO be reduced to direct binding.

Chierchia's approach is most innovative, I believe, in that it accounts for the interpretative asymmetries by structural asymmetries. Under his proposal, one construal with Castañeda's *he** and the other with *he* without a star depend not merely on the independent nature of these lexical items *he** and *he*, but on the structural differences of the sentences. Moreover, it explicitly reveals that an expression being clausal does not necessarily entail that it denotes a proposition; it could denote a property. This, in fact, captures the very essence of Williams' (1980) idea that control is an instance of predication. Positing the operator, a λ -abstractor over the subject, allows us to interpret the clausal structure as a predicate.

For all these advantages, Chierchia's analysis will form the basis of my proposal in accounting for the *de se* nature of PRO. His proposal, however, needs clarification at least in two non-trivial respects. One is a clarification on the control relation he presupposes between the matrix argument and the operator. The proposed structures for both *he** (29)a and PRO (30) in themselves remain mute on this issue; they require another independent system of control to account for that relationship. More concretely, the structures themselves do not provide clear clues as to which argument the operator should be coindexed to when the matrix predicate has two arguments other than the complement (i.e., in the cases of ditransitives such as *promise* and *order*). Another point that requires articulation is on the ability on the part of the operator to self-ascribe the property denoted by the complement. For instance, just positing the λ -abstractor over the complement subject in (29)a and (30) (or (31)a and (32)) does not ensure that what is abstracted over is the attitude holder of the attitude denoted by the complement. It does ensure that the subject abstracted over bears the property, but does not necessitate that the property bearer be the attitude holder. As a matter of fact, Chierchia (1990) presents an extensive discussion on this issue; nevertheless, his solution is not very conclusive.

It appears that we need just a little more information on the operator; a piece of information that says the property, the content of the attitude, denoted by the complement is about the attitude holder himself. Simple-mindedly, we could just add this information to the operator as a feature or something of the sort and assume that it originates with that specification. I will *not* adopt this idea, but with that kind of specification, the structure would look like (34) and (35), and it apparently would solve the two problems at once.

(34) John hopes [Op_{AH_i} that he_i will win the election]. (*de se*, *he**)

(35) John hopes [Op_{AH_i} PRO_i to win the election].

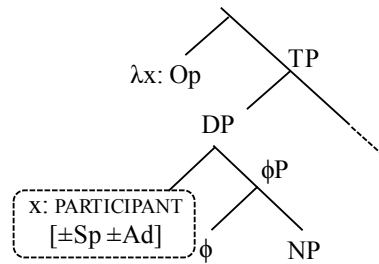
The above structures specify that it is the attitude holder (AH) of the property that is abstracted over and that the property bearer is the attitude holder. In addition, we do not need to syntactically coindex the matrix subject *John* and the operator anymore. This is because the hypothesized Op_{AH} would have the ability to restrict its range of values (reference) to be the attitude holder of the property. In the above cases, the attitude holder would naturally be the *hope* holder, the person designated by the matrix subject as *John* (but not the linguistic object *John*). Put another way, we could assume that Op_{AH} denotes a partial function whose domain is constrained to attitude holders,⁵ and that it denotes any truth values only when it is applied to some attitude holder as in (36). This implies that the property returns no truth value when applied to any individual other than John in (34) and (35).

(36) $\llbracket \text{Op}_{\text{AH}} \rrbracket = \lambda x: x \text{ is the attitude holder. } x, \text{ otherwise undefined.}$

However, we would not want to just posit a new feature AH on the operator here. It is not only stipulative but also circular. We would be saying that *he** and PRO are attitude holders because it is bound to Op_{AH}, and Op_{AH} denotes an attitude holder because it abstracts over the attitude holder *he** or PRO. This is not what we want. We perhaps need a more fine-grained account which *structurally* defines the nature of the operator.

To foreshadow, I will look into the internal structure of personal pronouns, which may consist of multiple functional projections (Ritter (1995), Déchaine and Wiltschko (2002, 2009), Harley and Ritter (2002)). For instance, as in Déchaine and Wiltschko (2002), a full DP structure involves two functional projections, DP and ϕ P. For the issue at hand, we could assume that what is abstracted over is not the full subject DP, but only a part of it that stands for the attitude holder. We could incorporate Harley and Ritter's (2002) feature geometry, and assume that PARTICIPANT (speaker/addressee) node is in the left periphery of the DP. The operator may be a λ -abstractor over this part of the embedded subject DP. This view can roughly be schematized as in (37):

(37)



In order to present a more articulated argument in this line of thought, I will consult with another influential work on attitude reports, namely Percus and Sauerland (2003ab).

3.6. *He** and PRO as Relative Pronouns

Percus and Sauerland (2003a) advance the proposal of Chierchia (1990) and the idea of Lewis (1979) that attitude reports correspond to properties. Their greatest contribution is the formalization of the two distinct LFs associated with *he* (*de re*) and *he** (*de se*) in the complement of attitude predicates, and the suggestion that *he** serves the role of a relative pronoun. I argue that the syntactic status of PC PRO can also be assimilated to a relative pronoun.

Like Chierchia (1990) and Lewis (1979), they presuppose that *de se* attitudes correspond to properties, basically falling under type $\langle e, \langle s, t \rangle \rangle$. Describing the content of our mental attitudes amounts to choosing a set of possible worlds among all possible worlds. In each world chosen, the attitude holder situates himself as one of its inhabitants. Crucially for *de se* attitudes, the attitude holder identifies a specific member of the inhabitants to be a counterpart of himself. As such, the content of our mental attitudes, say our *thoughts*, can be characterized by the set of individual-world pairs, the set $\langle y, w' \rangle$, such that w' is a world compatible with what the attitude holder x thinks (believes, hopes, etc.) in the actual world w , and y is the individual in w' who x (in w) identifies as himself. The predicate, say *think*, quantifies over the set of individual-world pairs.

Percus and Sauerland (2003a) focus on sentences like (38) under the scenario (39) similar to (6).

- (38) John thinks that he will win the election.
- (39) Scenario: A group of drunken election candidates watching campaign speeches on television do not recognize themselves in the broadcast. John, the only confident one, thinks “I’ll win,” but does not recognize himself in the broadcast. Bill and Sam, both depressive, think “I’ll lose” but are impressed by the speeches that happen to be their own and are sure “*that* candidate” will win. Peter, also depressive, happens to be impressed not by his own speech but by John’s.
(Percus and Sauerland (2003a): 234)

Just like (7)a, (38) gives rise to at least two readings, one *de se* and the other *de re*, taking *he* to designate John.

Their focus is on the constituent, *thinks that he will win the election*, having a simplified structure like (40). w_0 is a silent item that functions as a variable over possible worlds. They propose an LF denotation for *de se* as in (41) and for *de re* as in (42), with $\text{DOX}_{x,w}$ (x ’s doxastic or belief alternatives in w) defined as in (43) (adapted from Percus and Sauerland (2003a)).

(40) John [λ_1 [$_{VP}$ w_0 t_1 [$_{VP}$ thinks that he will win the election]]]

(41) *De se* (*he**)

$\llbracket \text{thinks that he will win the election} \rrbracket^s = \lambda x. \lambda w. \forall \langle y, w' \rangle \in \text{DOX}_{x,w}, y$ wins the election in w' .

(42) *De re*

$\llbracket \text{thinks that he}_i \text{ will win the election} \rrbracket^s = \lambda x. \lambda w. \text{there is some acquaintance relation } R \text{ that } x \text{ bears uniquely to } g(i) \text{ in } w, \text{ such that } \forall \langle y, w' \rangle \in \text{DOX}_{x,w}, \text{ the individual that } y \text{ bears } R \text{ to in } w' \text{ wins the election in } w'$.

(43) $\text{DOX}_{x,w} = \{ \langle y, w' \rangle : w' \text{ is a world compatible with what } x \text{ thinks in } w, \text{ and } y \text{ is the individual in } w' \text{ who } x \text{ (in } w) \text{ identifies as himself} \}$

From the definition of $\text{DOX}_{x,w}$, y is the individual in w' who the attitude holder x (in w) identifies as himself. The *de se* construal in (41) is very straightforward: it holds true if and only if the individual in a world compatible with John’s belief, identified by John to be himself, wins the election in w' . This *de se* construal is compatible with scenario (39). John does

self-ascribe the property of winning to himself when he says *I will win*. As for the *de re* construal in (42), Percus and Sauerland assume existential quantification over acquaintance relations R that the attitude holder bears uniquely to an individual denoted by the DP *he*.⁶ (42) indeed covers all *de re* cases where *he* is understood to be John or any other male individual. The pronoun *he* has an index *i* that functions as a variable whose semantic value is determined under assignment *g*. Intuitively, (42) says that there is a certain unique way that John knows of someone in the actual world (e.g. “that guy giving a speech,” “my brother,” “Bill”), and in his belief, the person who John knows of in the same way as he does in the actual world will win the election. Thus, if John says *Bill will win* in the scenario, and *he* in (38) is understood to refer to Bill, the sentence is true via the *de re* construal as denoted in (42). One possible *de re* reading is that of *he* designating John himself via an acquaintance relation John holds of himself. This is just one possible value for *g(i)* in (42), but we could single out the denotation for this particular case (*he*=John) as in (44).

(44) *De re* (*he* = John)

$\llbracket \text{thinks that } he_i \text{ will win the election} \rrbracket^g = \lambda x. \lambda w. \text{ there is some acquaintance relation } R \text{ that } x \text{ bears uniquely to } x \text{ in } w, \text{ such that } \forall \langle y, w' \rangle \in \text{DOX}_{x, w}, \text{ the individual that } y \text{ bears } R \text{ to in } w' \text{ wins the election in } w'.$

Informally, this denotation only says that there is some acquaintance relation R that the attitude holder John bears uniquely to John, and the person who John bears the same relation R to in his belief wins the election. Thus, contrasted to the *de se* denotation in (41), it holds true in a situation where John may be watching campaign speeches on TV and happens to think “That candidate giving a speech now will win the election” without being aware that the candidate is actually John himself (this is not what happened in the scenario (39)).

Crucially, to prove that there is an LF dedicated to the *de se* construal as in (41) distinct from LFs for *de re* construals as in (42), Percus and Sauerland consider the sentence below:

(45) Only John thinks that he will win the election.

We intuitively judge (45) to be a truthful statement of scenario (39). However, if we only had the *de re* LF (42) and its special case (44), we just could not judge it to be true. First, (45) cannot be

true under (44) since it is not the case that John is the only one who satisfies (44). Bill and Sam also satisfy (44). For instance, assume that Bill is the first candidate Bill hears in the campaign, and Bill thinks that *The first candidate will win*, without being aware that the first candidate is actually Bill himself. The R in this case will be the relation Bill bears uniquely to the first candidate, and in his thought, the person who Bill bears this relation to (i.e. the first candidate) wins. A similar assumption holds of Sam.

Second, John is not the only one who satisfies (42) either. Even if we confine ourselves to the readings in which *he* in (38) designates John, Peter also satisfies (42). The R may be the relation Peter bears uniquely to the third candidate which happens to be John, and Peter may think that *The third candidate will win*. The R may also be the relation Peter bears uniquely to the person by the name *John*, and Peter may think that *John will win*. In either case, (42) returns true. This means that (45) under the denotation (42) is *not* true.

Thus, the judgment that (45) is true requires some other LF denotation, which Percus and Sauerland propose to be (41), the dedicated *de se* LF. Only under (41), (45) returns true. John is the only person who satisfies (45). Very informally, John is the only one with a thought that the person who John identifies as him himself in his thought wins the election. None of the rest of the candidates, Bill, Sam or Peter, holds this type of thought. This proves that part of (38) has a dedicated *de se* LF very plausibly like (41).

Importantly, Percus and Sauerland suggest distinct syntactic statuses for *de se he* in (41) which they indicate as *he** and *de re he_i* in (42). *He** corresponds to Castañeda's *he**. Their arguments for distinct syntactic roles of *he** and *he_i* are more clearly presented in Percus and Sauerland (2003b), in which they propose that *he_i* functions as a variable as most often assumed, but *he** behaves as a relative pronoun in the sense presupposed in Heim and Kratzer (1998). According to Percus and Sauerland (2003b), *he** moves to the edge of the constituent creating a λ -abstractor just below it, which would then bind the trace it left behind. Under this view, *he** is assimilated to the relative pronoun *who* as shown in (46)ab and (47)ab (adapted from Percus and Sauerland (2003b: 8) using a different example sentence).

- (46) a. John thinks that *he will win the election*.
 b. *he** [λ_1 [*t₁ will win the election*]]

- (47) a. the man *who will win the election*
 b. who [λ_1 [t_1 will win the election]]

In this way, *he** contributes to creating a property in line with the property view of attitudes *de se* advocated in Lewis (1979) and Chierchia (1990). They suggest that a *de se* LF can be derived by assuming a pronoun *he** in the embedded clause and by moving it for λ -abstraction. The embedded clause then combines with the predicate, *think* in this case, to derive the property of bearing a thought where the attitude holder (the thinker) plays a role.

Percus and Sauerland (2003b) basically assume that *he** moves at LF, although they briefly explore an alternative account that *he** may be a resumptive pronoun. Either way, their proposal for distinct LFs for *de se* and *de re* attitude reports as in (41) on one hand and (42) and (44) on the other makes a strong case that various instances of *he* having identical phonological realizations may occur in distinct syntactic configurations *and* play distinct syntactic roles: one is a variable and the other a relative pronoun. Their proposal serves to further articulate Chierchia's (1990) proposal in which the contrast between *de se he* and *de re he* was mostly captured by presence or absence of the operator at the clausal edge. We repeat Chierchia's proposal below (48)ab and (49), repeating (29)ab and (30).

- (48) a. John_{*i*} hopes [Op_{*i*} that he_{*i*} will win the election]. (*de se*, *he**)
 b. John_{*i*} hopes [that he_{*i*} will win the election]. (*de re*)
 (49) John_{*i*} hopes [Op_{*i*} PRO_{*i*} to win the election].

Percus and Sauerland (2003ab) add to this picture by saying that *de se he* generates as *he** which is already distinct from a variable pronoun *he_i*, and only *he** moves at least in LF to function as a relative pronoun. In contrast, the variable pronoun *he_i* remains in situ. Turning to PRO as in (49), we could most plausibly assume that PRO is also a relative pronoun, behaving much like *he**. This would give rise to its obligatory *de se* construal.

Some readers may wonder what accounts for the subjecthood of PRO. If PRO is a relative pronoun, nothing prevents the object of the embedded complement from being null and behaving like PRO. The traditional view rooted in Chomsky (1981) accounts for the subjecthood of PRO by the PRO theorem: PRO is ungoverned. This theorem is derived from the assumptions that i) PRO is like an overt pronoun in that it does not have an antecedent within its clause or NP;

but ii) PRO is also anaphor-like in lacking its own referential content. Then, PRO is a pronominal anaphor falling under both Conditions A and B of the binding theory, a blatant contradiction if PRO had a governing category (Chomsky (1981: 191)). PRO can never appear in the object position because it is governed.

However, the present proposal cannot appeal to the PRO theorem because it does not assume ii) above. Here, it is assumed that PRO is referential just like the overt first/second pronouns (see section 4.2, Chapter 4). Arguing PRO to be a relative pronoun and also similar to the first/second pronouns may seem somewhat contradictory, but I assume the first/second person pronouns to be free variables (again see section 4.2), comparable to free relatives.

Recall that the present thesis does not take PRO to be a lexical item picked out from the lexicon for a numeration before syntactic derivations; the zero-morphology of PRO is a derivational consequence. As discussed in the next chapter, the subject DP that will be realized as PRO (or null) starts its life bearing the same internal structure as the English overt first/second person pronouns. Being the subject, it agrees with T and then, in my proposal, it agrees with the Fin head just above T. Through these agreement processes, the DP gets to bear a certain combination of person ($\pm Sp$, $\pm Ad$) features and a temporal feature (Time) which correspond to a null morphology in English. Non-subject DPs do not bear the same feature combination as the subject DP because they do not agree with T or Fin. I assume the key feature determining the nullness of the subject in English is the temporal feature Time (see sections 4.6.1 and 4.6.2 in Chapter 4); so my proposal bears some resemblance to the Null Case approach ((Chomsky and Lasnik (1993), Martin (2001))). However, the nullness of the subject is not a necessary ingredient of control. In some languages, the subject of the complement may not be null but still exhibits referential restrictions that apply to the English-type PRO (see section 3.9 later in this chapter). My proposal accounts for, or at least opens room for, these overt control phenomena.

3.7. *De Se* Structure

The first question asked in the beginning of this chapter was the following, repeating (1).

- (50) How does PC PRO come to be interpreted obligatorily *de se*?

Based on the previous studies considered in this chapter, I assume that the *de se* nature of PC PRO lies in its morphosyntactic resemblance to a relative pronoun. It moves out to the clausal edge to create a self-ascriptive property. This straightforwardly answers the second question:

(51) Do control complements denote properties or propositions?

They denote properties. In fact, I have not much to add to what previous literature has discussed on the property view on the control complements. However, one thing that is worth mentioning here is that I do not consider PC complements to express just any self-ascriptive properties. They bring about special forces such as the imperative and the promissive. Regarding this issue, I need to add something more to the arguments developed in the previous studies.

Percus and Sauerland's (2003ab) proposal, like Chierchia's, does not explicate the issue pertaining to controller determination, or binder determination. This is perhaps not an issue for them because accounting for controller determination is not one of their major purposes. However, it is certainly important for the present study. What determines the binder of the relative pronoun-like element *he**? When we consider monotransitives like *hope* as in (48) and (49), the binder may simply be the subject of the matrix clause. But, what happens when the predicates are ditransitives as in (52) and (53)?

(52) a. John promised David that *he** would win the election.

b. John promised David PRO to win the election.

(53) a. John ordered David that *he** should win the election.

b. John ordered David PRO to win the election.

How do we know that *he** and PRO in (52) are to be understood *de se* with respect to John, while *he** and PRO in (53) are interpreted *de te* with respect to David, not vice versa? The assumption that *he** is a relative pronoun as in (46)b says little regarding this question. I assume that there must be some morphosyntactic specifications within *he** and PRO that contribute to determination of their binders. What kind of specifications do we need?

Following Percus and Sauerland (2003ab), we know that *he** corresponds to *y* in (43) repeated as (54) in subject control cases. *He** designates whoever the individual the attitude holder identifies as himself.

- (54) $\text{DOX}_{x,w} = \{ \langle y, w' \rangle : w' \text{ is a world compatible with what } x \text{ thinks in } w, \text{ and } y \text{ is the individual in } w' \text{ who } x \text{ (in } w) \text{ identifies as himself} \}$

We could extend this line of thought to define the set of PROMISE alternatives and ORDER alternatives as in (55), which essentially builds on Uegaki (2011). The quantification now involves individual-individual-world triplets.

- (55) $\text{PROMISE/ORDER}_{x,z,w} = \{ \langle y, z', w' \rangle : w' \text{ is a world compatible with what } x \text{ promises/orders to } z \text{ in } w, y \text{ is the individual in } w' \text{ who } x \text{ identifies as himself, and } z' \text{ is the individual in } w' \text{ who } x \text{ identifies as his addressee} \}$

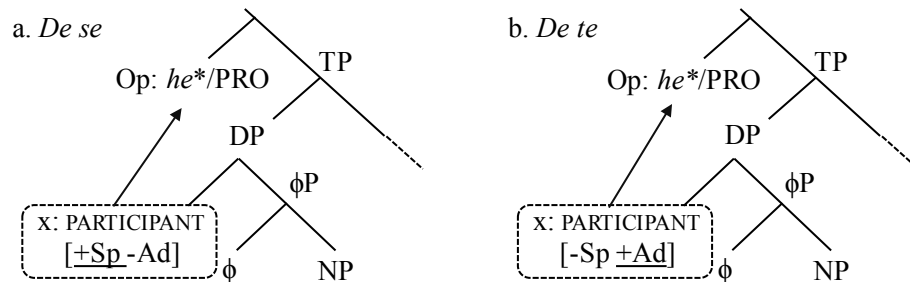
In (52)a, the constituent *promised that he would win the election* with the *de se* construal (i.e. *he**) would have the denotation in (56); (57) corresponds to the constituent in (53) with the *de te* construal. I disregard tense here.

- (56) $\llbracket \text{promised that he}^* \text{ would win the election} \rrbracket = \lambda x. \lambda z. \lambda w. \forall \langle y, z', w' \rangle \in \text{PROMISE}_{x,z,w}, y \text{ wins the election in } w'.$

- (57) $\llbracket \text{ordered that he}^* \text{ would win the election} \rrbracket = \lambda x. \lambda z. \lambda w. \forall \langle y, z', w' \rangle \in \text{ORDER}_{x,z,w}, z' \text{ wins the election in } w'.$

Thus, *he** appearing under the predicate *promise* corresponds to *y*, the individual who the attitude holder identifies as himself. Contrastingly, *he** occurring in the complement of the predicate *order* corresponds to *z'*, the individual who the attitude holder identifies as his addressee. The former is the source of *de se* and the latter is the source of *de te*. In the next chapter, I will propose that such *de se* vs. *de te* distinction is specified in the DP-internal structure of *he** before it moves up to the clausal edge. I will propose that *de se he** has the structure (58)a whereas *de te he** has the structure (58)b. Only the PARTICIPANT node is abstracted over by movement. A similar assumption holds of PC PRO.

(58)



In (58)ab, both *he** and PRO play the role of a relative pronoun. They behave very much like the relative pronoun *who*, but not only do they have the feature [+human] but also the features like [+Sp, -Ad] and [-Sp, +Ad]. These additional feature specifications restrict the range of values for *he** and PRO to be the attitude holder (Sp, speaker) or the addressee (Ad) of the expressed attitude. It has been argued in the geometric approach (e.g. Harley and Ritter (2002)) and in the multiple categorical approach (e.g. Déchaine and Wiltschko (2002)) to personal pronouns that only the first/second person pronouns are associated with the speaker/addressee representations. However, I will argue in the next chapter that some instances of the third person pronouns including *he** and PRO may also internally represent those discourse participant features. To be clearer about the contrast between *he** and PRO on the one hand and the bound variable *he* on the other, I assume that the former is a moved element from a DP bearing a structure as in (58), while the latter is an in-situ bound variable with a simpler structure ϕ P as will be considered in the next chapter. I hypothesize that the DPs that *de se* pronouns are moved out from already bear the structure distinct from that of the bound variable pronouns.

The proposed structures in (58) properly capture the relationship between the subject of the embedded clause (the DP in (58)ab) and the matrix argument, *John* in (52)ab and *David* in (53)ab. The relationship between, say *John* and the embedded subject DP, is represented in the relevant LF denotation as a relationship between *x* and *y*. The denotation only says that *x* in *w* identifies *y* as himself in *w*'. Informally speaking, in most cases, *x* designates the same person as *y* does: if *x*=John, then *y*=John (or John's counterpart in *w*'). However, in certain cases, such as dream-reports (Percus and Sauerland (2003b)), the relationship between *x* and *y* is not so simple. Consider the following (from Percus and Sauerland (2003b: 2)):

(59) John dreamed that he got promoted.

Imagine that John was dreaming that he was his friend, Fred. In his dream, Fred got promoted. John could report this as his *de se* attitude as below:

(60) In my dream, I was Fred and *I* got promoted.

And, Sam hearing (60) uttered by John could report this by (59), in which case *he* should be construed *de se* and as an instance of *he**. Nevertheless, we are not quite sure if it is correct to assume *he** represents John or Fred. We only know that *he** designates John's dream-self, who is

Fred in this case. It represents two individuals at once. In other words, in the relevant denotation, $x (=John)$ in w identifies $y (=Fred)$ as himself in w' . Such duality of representation can be properly captured in the proposed structures in (58). The Spec DP PARTICIPANT represents a concept of John but the entire DP represents that of Fred. I cannot be certain about the exact position for Fred, but I temporarily assume it to be ϕP . In any event, the entire DP may designate Fred but it has John inside it as an attitude holder. The DP may be construed somewhat informally as John's Fred, or John being Fred. Note that I am not assuming names like *John* and *Fred* are morphologically represented within the proposed DP structures; what is represented is a concept of John or Fred.

Furthermore, the proposed structures account for the restrictions on the interpretations of dream-reports, known as the Oneiric Reference Constraint (ORC) (Percus and Sauerland (2003b)). The ORC bears strong relevance to the *De Re Blocking Effect* observed for shifty indexicals (Anand 2006), which will be discussed in the next chapter. The ORC captures the interpretative restrictions on a sentence like the following:

(61) John dreamed that he was marrying his grand-daughter.

(Percus and Sauerland (2003b: 4))

The context has it that John dreamed that he was Bill, so there are at least four logical possibilities for interpreting the pronouns *he* and *his* in the embedded clause. The following are the paraphrases of these possibilities:

- (62) a. In John's dream, the dream-self (Bill) marries the dream-self's (Bill) grand-daughter.
 b. In John's dream, the dream-self (Bill) marries John's grand-daughter.
 c. # In John's dream, John marries the dream-self's (Bill) grand-daughter.
 d. In John's dream, John marries John's grand-daughter.


However, the construal paraphrased as (62)c is not allowed by (61). Note that this construal is pragmatically felicitous as the following shows:

(63) John dreamed that his grand-daughter was marrying him.

(63) allows the interpretation in which *his grand-daughter* (=Bill's grand-daughter) was marrying *him* (=John).

Percus and Sauerland's (2003b) account for ORC can be roughly described as follows. They assume that the self-ascriptive pronoun *he/his* expressing the dream-self behaves like a relative pronoun and moves to the clausal edge at LF. In contrast, *he* functioning as a bound variable stays in situ. Thus, for construal (62)c to obtain, the relative pronoun *his* has to move across the variable *he*. (64) is a simplified illustration of this movement, based on Percus and Sauerland (2003b: 12).

(64) John_i [dreamed that [his*_j [he_i was marrying t_j grand-daughter]]].



In their account, this movement is a violation of what they call *superiority*, a version of Minimal Link Condition. It is defined as follows:

(65) Superiority: At a given point in the derivation, if you are faced with the option of moving two different items α and β to the same position, if α asymmetrically c-commands β , and if α and β have the same features, then do not move β .

The crucial part of this superiority rule is that α and β must share the same features for the violation to apply. In other words, one has to assume *he* and *his* in (64) bear the same features.

Percus and Sauerland mention that the bound variable *he* and the relative *his* share the morphological features, which would include ϕ -features such as person, number, and gender, but there must be more than just ϕ -features shared between them. This is because (61) allows another interpretation paraphrasable as (66):

(66) In John's dream, *Fred* marries *the dream-self's* (Bill) grand-daughter.

(Based on Percus and Sauerland (2003b: 6))

This means that *he* in (61) designates someone distinct from the one referred to by the matrix subject *John*, and crucially, this reading is not ruled out although apparently *he* and *his* do share the same ϕ -features. However, Percus and Sauerland (2003b) do not make clear the nature of the additional features necessary to rule out construal (62)c but not (66).

Intuitively, in the ruled-out reading (62)c, although *his* designates the dream-self, who is Bill, it ultimately refers to John, who was dreaming he was Bill. The embedded subject *he* also refers to John. Thus, *his* and *he* seem to share a 'feature' of the sort making them end up referring

to the same individual. Construal (66) lacks this feature, exempting it from violations of the superiority rule; but precisely for this shared feature, (62)c is ruled out.

An issue arises, however, as to how to capture such features syntactically. The proposed structures for *de se* pronouns in (58) provide a plausible solution. Suppose *his* in (61) being a *de se* pronoun has an internal structure like (58). It would represent a concept of John at Spec DP as in (67) since John is the attitude holder, and that of Bill plausibly at ϕ P.

(67) *de se his*: [_{DP} [_x: PARTICIPANT (John)] [_{ϕ P} (Bill)]]

Now, what moves to the clausal edge is PARTICIPANT *x*, representing a concept of John as in (68).

(68) ...*Op_i* [*he_i* was marrying *his* [_{DP} [_x: PARTICIPANT_{*i*} (John)] [_{ϕ P}]] grand-daughter]

Here, *his* behaves more like a resumptive pronoun, having part of it moved out.⁷ When PARTICIPANT *x* moves, it has to cross over *he_i*, which is bound to the matrix subject *John*. This constitutes a strong crossover effect. I assume (62)c is excluded for this reason. Note that (63) allows reading (62)c, since the movement does not give rise to the same effect.

(69) ...*Op_i* [*his* [_{DP} [_x: PARTICIPANT_{*i*} (John)] [_{ϕ P}]] grand-daughter was marrying him_{*i*}]

One may have noticed the structural difference between (58) and (67). In (58), *he** (or *his**) is at the operator position, but in (67) it occupies the DP position. There may be serious theoretical and empirical consequences pertaining to this issue, but I cannot make a decisive argument for either position at this moment. However, they do share the basic line of thought I argue for in the current proposal. Fortunately, for PC PRO, neither position gets pronounced; the choice presumably boils down to a theoretical preference.

PC PRO is a *de se* pronoun, and it shares this core property with another *de se* pronoun *he**. What I have attempted in the latter part of this section is to demonstrate that my proposal not only accounts for the behaviors of PC PRO (to be discussed in the following chapters), but also some peculiar phenomena observed for *he**. This constitutes independent support for the internal structure of PC PRO I argue for and its interactions with the clausal structure.

3.8. Two *Hes* and Two *Is*

Here I return to the issue I started this chapter with. There seems to be two kinds of *Is*: one is directly read *de se*; the other appears to be read *de se* but via a different route *de re*. The relevant utterances (2) and (3) are repeated below.

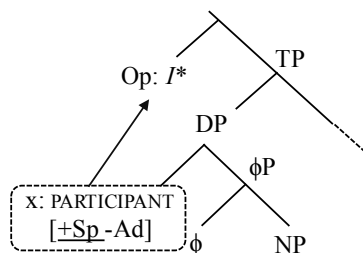
(70) Look at me. I look so happy. (the speaker, pointing to a picture)

(71) Oh boy, I'm happy. (the speaker, having an exciting time at a party)

I said that the contrast between the two *Is* bears morphosyntactic significance, but I have not mentioned how the contrast should be captured structurally. Due to the nature of the issue being so profound and philosophical, this will be an open-ended question, but I will share some of my assumptions that may help readers understand my basic contentions throughout this thesis.

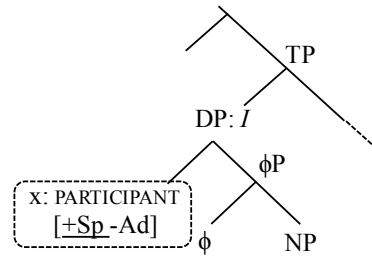
The discussions in this chapter showed that there are at least two *hes*, *de re he* and *de se he*. The latter corresponds to Castañeda's *he**. I will refer to the former as *he* and the latter as *he**. I will also call the *I* in (70) as *I* contrasted to the *I* in (71) as *I**. I assume *I* corresponds to *he* whereas *I** corresponds to *he**. This implies that *I* bears a structure comparable to *he*, but the structure of *I** is comparable to that of *he**. Thus, *I* (in (70)) is structurally *de re*. *I** is construed directly *de se* because of its syntactic structure as in (72), which looks like the proposed structure for *he**.

(72) *De se I** (in (71))



Just as proposed for *he** (and PRO), the PARTICIPANT node represented inside DP is abstracted over by movement. In contrast, *I* which is structurally *de re* bears the structure as in (73).

(73) *De re I* (in (70))



The PARTICIPANT node remains *in-situ*, and it is not abstracted over. The entire DP is pronounced as *I*.

In the structure for *de se I* as in (72), a property is created out of a proposition. This is in line with my assumption that a clause expressing a *de se* attitude denotes a property. As a matter of fact, however, I am not certain about the status of a non-*de se* attitude. As argued for by Lewis (1979) and in fact also by Pearson (2013), all sentences may denote a property. However, if *de re I* bears the structure like (73) and nothing happens afterwards, the sentence ends up denoting a proposition. If assertive sentences like *I look happy* really denote a proposition, then, (73) is not problematic. Nevertheless, insofar as assertive sentences express attitudes whether *de se* or non-*de se*, they are properties of the attitude holder; we need structural representations that correspond to them as such. (73) is insufficient for this purpose. It perhaps requires additional representations in the CP domain. In the next chapter, I will introduce a context tuple represented on Fin, the lowest head in the left periphery (Rizzi (1997)), which interacts with the DP internal PARTICIPANT node. But the interactions are only relevant for bringing about a *de se* property for *I**, *he**, or PRO. I do not discuss non-*de se* properties, so that the problem for (73) will not be solved. I will have to leave it to further study.

In any event, at some point in syntactic derivations, it is plausible that *de re I* bears the structure as in (73), contrasted to *de se I** as in (72). My argument in this section is incomplete; but I believe it is important that we take the subtle construal differences observed between the two *Is* and consider what morphosyntactic contrast there might be.

3.9. An Interlude: Overt Finite Control in English

This section is just an interlude, showing some evidence for finite and/or overt control in various languages discussed in the previous studies. I am providing this section because I assume that the English sentence (7)a, repeated here as (74), is an instance of overt finite control when *he* is read *de se* as *he**.

(74) John hopes that *he* will win the election. (*he=de se he**)

The reason should be obvious from my argument in this chapter. (74) minimally contrasts in finiteness and overtness of the subject with control constructions such as (7)b, repeated here as (75):

(75) John hopes PRO to win the election.

Control effect in sentences like (74) is not phonologically evident because the variable *he* and the relative pronoun *he** are phonologically identical. However, once you assume two distinct syntactic structures for the two *hes*, it is clear that one structure involves control.

For English, complement control is often assumed to involve identification of the reference of the *null subject* of a *non-finite* complement clause by the reference of one of the overt arguments in the immediately higher finite clause. Nevertheless, a large body of cross-linguistic studies on control has revealed that such definition of control is unsatisfactory. It is widely acknowledged that neither the nullness of the subject nor the non-finiteness of the control complements are the defining properties of control (See Landau (2013: 87-103) and Stiebels (2007) for extensive reviews on this issue). Then, it is quite natural that English also allows overt finite control.

For example, languages that do not make clear morphological distinctions between finiteness and non-finiteness are attested to have an empty category which behaves like PRO. Consider the following Chinese sentence from Huang (1984: 556):

(76) Zhangsan_i shefa e_i bangmang wo.
Zhangsan try to help I
'Zhangsan tried to help me.'

We could assume that the empty category in (76) is a topic bound variable, since Chinese is a topic-drop language. However, Huang (1984) provides sufficient evidence (e.g. its immunity to

strong crossover and complex NP constraint) that it is not. Huang holds that it is an empty pronominal that falls under his Generalized Control Rule. Japanese and Korean also show control-like effects in complements bearing verbal morphologies identical to those of roots. That is exactly what we observed in Chapter 2 regarding Japanese.

Hebrew is one of the well-known languages that manifest so-called *finite control* (Borer (1989), Landau (2004), Shlonsky (2009)). In Hebrew, first and second person null subjects are allowed in past and future tenses while third person null subjects are generally prohibited. However, there is one specific type of context in which third person null subjects are allowed: an embedded subject position in past and future tenses under certain matrix predicates. The null subject in this context is taken to be an instance of PRO. Observe (77) (taken from Landau (2004: 813)):

(77)	himlacti	le-Gil ₁	še-ec _{1/*2}	yearšem	la-xug
	I-recommended	to-Gil	that-ec	will-register.3sg.M	to-the department
	le-balšanut.				
	to-linguistics				

‘I recommended to Gil to register to the linguistics department.’

Note that the verb in the complement is inflected for both tense (future) and agreement (third masculine singular), so the null subject looks very much like *pro* in *pro*-drop languages such as Italian. However, it is unlike *pro* in that its reference has to be identical to the reference of the matrix object. Depending on the predicate, the reference of the matrix subject may be identified with that of the null subject (e.g. under the predicates equivalent to *hope* and *promise*).

Contrastingly, when the complement subject is overt, there are no such interpretative restrictions.

Brazilian Portuguese also evinces finite control (Rodrigues (2004), Nunes (2008), Modesto (2010)). Brazilian Portuguese generally prohibits null subjects,⁸ but in embedded indicative contexts, null subjects are allowed provided they have a specific antecedent as in (78), taken from Nunes (2008: 85).

(78) [[o João] disse que [o pai d [o Pedro]] acha que vai
 the João said that the father of-the Pedro thinks that goes
 ser promovido].

be promoted

‘João_i said that [Pedro_j’s father]_k thinks that he_{k/i/*j/*l} is going to be promoted.’

The reference of the null embedded subject has to be interpreted as identical to the subject of the immediately higher clause; it cannot take the subject of the highest clause or the possessive DP of the next higher clause to be its antecedent; nor can it refer to some other third person. Nunes demonstrates that the null subject in contexts like the above: i) has to be interpreted as a bound variable in an *only*-DP subject construction, ii) gives rise to obligatorily sloppy reading under VP-ellipsis, and iii) requires a *de se* construal, just like PRO.

According to Landau (2013), various Balkan languages (Greek, Bulgarian, Romanian, Serbo-Croatian, Albanian) exhibit finite control, where embedded complements appear with present tense subjunctive morphology inflected for agreement.

The nullness of the complement subject cannot be taken to be a prerequisite for control effects, either. As discussed in Borer (1989), Korean exhibits *overt* control where the controlled null subject may be lexical as in (79) (adapted from Borer (1989: 85)):

- (79) a. John_i-ka ku_{i/*j} ttena-lye-ko nolyek ha-ess-ta.
 John-Nom he leave-will-Comp try do-Past
 b. John_i-ka cagi_{i/*j} ttena-lye-ko nolyek ha-ess-ta.
 John-Nom self leave-will-Comp try do-Past
 ‘John tried to leave.’

The overt pronouns, *ku* in (79)a and *cagi* in (79)b, must refer to the same individual referred to by the matrix subject. They cannot refer to any other individual. These Korean overt pronouns appearing in these contexts seem to be controlled by the matrix subject. It deserves mention that null subjects may also appear in the same contexts, but the interpretative restrictions on them are not affected by their nullness (or overtness).

These cross-linguistic data reveal that control phenomena, at least control-like phenomena, are not restricted to null subjects of non-finite clauses. This suggests that any

theories dependent on PRO-theorem as originally set forth in Chomsky (1981) would miss important generalization. PRO-theorem takes the nullness of PRO to be an intrinsic property of control, where it is ungoverned because it occurs in a subject position of a non-finite clause. The Null Case approach as in Chomsky and Lasnik (1993) may account for control phenomena specific to English and similar languages, but it plays a limited role in theories that attempt to subsume varieties of cross-linguistic data under one system. The present thesis aims at generalizing various control phenomena including finite and/or overt control. On this perspective, the English sentence (74) quite naturally emerges as an instance of control.

This ends the interlude section. The next chapter returns to our main line of discussion.

Chapter 4. PRO as a Shifted Indexical¹

4.1. Issue and Overview

In Chapter 2, based on the Japanese data, I argued that certain PC complements express a force distinct from the matrix clause. In short, I proposed that PC involves embedding of the imperative and some other related forces. (1) to (5), taken from Chapter 2, illustrate this framework.

- (1) John hoped [_{OPT} PRO_{+Sp} (-Ad) to win]. (subject control)
- (2) John decided [_{INT} PRO_{+Sp} to leave]. (subject control)
- (3) John ordered Bill [_{IMP} PRO_{-Sp +Ad} to leave]. (object control)
- (4) John promised Bill [_{PRM} PRO_{+Sp -Ad} to leave]. (subject control across object)
- (5) John proposed to Mary [_{EXH} PRO_{+Sp +Ad} to meet each other at 6]. (split control)

For instance, in (1), the complement bears the optative force, and being the subject of the optative, the reference of PRO must include the speaker but exclude the addressee(s) of the relevant context. Although, there is no morphological evidence in English for embedded force or person specifications, the proposed assumptions straightforwardly account for various atypical interpretations of PC including split control, control shift, and partial control, as well as typical, well-behaved subject and object control (as discussed in sections 2.8 and 2.9, Chapter 2).

The speaker/addressee included in the reference of PRO is, however, not the speaker/addressee of the actual utterance context. The speaker/addressee PRO designates is that of a shifted context. Consider (6) similar to (3), for example. The context is, Mary is talking to Sam:

- (6) [Mary is talking to Sam]

Yesterday, John specifically ordered Bill_i PRO_i to leave for the airport at 5 am,
but he didn't.

In the proposed framework, the infinitival complement is an imperative; this implies that PRO includes the addressee in its reference; however, the relevant addressee is surely not Sam. It is Bill, the addressee of the reported context in which John orders Bill to do something.

As such, my proposal assumes force embedding *and* context shifting for PC. PRO designates the speaker/addressee of a shifted context, and in this sense, it is a shifted indexical. This chapter focuses on such indexicality of PRO and context shifting mechanisms involved in PC.

Recall that I argued in Chapter 2 that matrix arguments do not *control* PRO. The reference of PRO often overlaps with that of one of the matrix arguments, but PRO is not referentially dependent on the matrix argument. It has its own reference, which corresponds to the complement force. PRO designates a set of sets of individual(s) including the speaker(s) and/or the addressee(s) of the relevant context. In this respect, PRO is as referential as overt first and second person pronouns. They are indexicals which have capabilities to quantify over sets of individual(s) in the relevant context. The semantic values for indexicals are determined by the context. PRO shares this property with other overt indexical pronouns, including the canonical instances of the English first/second person pronouns. The matrix predicate exerts its influence on the reference of PRO only via selection of the complement force.

In Chapter 3, I suggested that PC complements denote a property which is created by moving the Spec DP PARTICIPANT element to the clausal edge. My discussion in this chapter will show that only indexical DPs represent such Spec DP element in its internal structure. This implies that, in order to create a clause that denotes a self-ascriptive property, the clause must have an indexical DP to begin with. Put differently, the proposed *de se* relative pronoun PRO moves out of an indexical DP. Not all indexical DPs are read *de se* (Pearson (2013), Deal (2017)). Being indexical is a necessary condition for a *de se* construal, but not a sufficient one; only when the Spec DP of an indexical pronoun moves to the clausal edge, does a *de se* reading arise.

The view that PC involves indexical shifting is not new at all. In the past decade or two, various studies have converged on this view (Bianchi (2003), Schlenker (2003b), Anand and Nevins (2004), Anand (2006), Pearson (2013, 2016), Landau (2015)), and it constitutes one of the major lines of thought pursued in the research of PC. This does not mean that these authors all assume PC PRO to be equivalent to the shifty indexicals in languages like Amharic (Schlenker (1999, 2003b)); but they posit that the author of the attitude expressed by a clause may shift from clause to clause sentence-internally.² Thus, my force-based proposal on PC is

well-supported in this regard. However, we still do not have a clear picture of what really constitutes indexicality and indexical shifting. Insofar as the nature of indexicals remains uncertain, the nature of PC and PRO remains foggy. The goal of this chapter is to clarify the notion of indexicality and the mechanism of indexical shifting for pronominal forms not limited to PRO. The questions discussed in this chapter will be as follows:

- (7) What constitutes indexicality?
- (8) What morphosyntactic properties does PC PRO share with overt person indexicals?
- (9) What are the syntactic mechanisms behind indexical shifting?
- (10) How is person determined for indexicals?

4.2. Indexicality: Indexicals as Free Variables

This section considers the first question: What constitutes indexicality? There is a significant amount of philosophical, semantic, and morphosyntactic literature on this topic. I will not attempt to do justice to all these previous works. Instead, I will just introduce my assumptions on indexicality under the proposed framework.

Indexicals are linguistic expressions with a context dependent reference. Their semantic values are determined by the context (Schlenker (2003ab)). We have person indexicals such as first and second person pronouns, locative indexicals such as *here*, and temporal indexicals such as *now*. In English, the semantic values of certain indexical expressions such as *I*, *you*, *here*, and *now* are canonically determined by the speech or thought context. I will only focus on person indexicals in this thesis.

I argue that PRO is a shifted indexical (or, more precisely, PRO moves out of a shifted indexical) and that it is as independently referential as any unshifted indexicals could be. In other words, PRO is referential in the way, for example, the English person indexicals, *I*, *we*, and *you* are. Then, what does it mean when we say that the first and second person indexicals are referential?

I follow the presuppositional view on ϕ -features in line with Cooper (1983), Heim and Kratzer (1998), and Heim (2008). In particular, I follow Heim's (2008) implementations.

According to Heim, all pronouns including the first and second person pronouns are variables. That is, pronouns always bear an index and receive their semantic value by an assignment. They can be free variables or bound variables. The first and second person pronouns in their canonical indexical uses³ are free variables. When pronouns are free, the assignment is provided by the speech context. ϕ -features are assumed to be presuppositions that restrict the range of possible values of the pronouns. For instance, the gender feature $[[\text{masculine}]]$ denotes a partial identity function in that the pronoun with the index i is defined under assignment g only if i is in the domain of assignment g and $g(i)$ is a male. The partial identity function (type $\langle e, e \rangle$) $[[\text{masculine}]]$ can be represented as in (11)a. The denotations for the gender feature $[[\text{feminine}]]$ and other ϕ -features pertaining to number and person are shown in (11)b to (13)c. These denotations are adopted from Heim (2008).

(11) Gender

- a. $[[\text{masculine}]] = \lambda x_e: x \text{ is male. } x$
- b. $[[\text{female}]] = \lambda x_e: x \text{ is female. } x$

(12) Number

- a. $[[\text{singular}]] = \lambda x_e: x \text{ is an atom. } x$
- b. $[[\text{plural}]] = \lambda x_e: x \text{ is a plurality. } x$

(13) Person

- a. $[[1\text{st}]]^c = \lambda x_e: x \text{ includes } s_c. x$
- b. $[[2\text{nd}]]^c = \lambda x_e: x \text{ includes } h_c \text{ and excludes } s_c. x$
- c. $[[3\text{rd}]]^c = \lambda x_e: x \text{ excludes } s_c \text{ and } h_c. x$

(s_c stands for the speaker of the context; and h_c , the hearer of the context.)

If a pronoun has multiple ϕ -features, they adjoin to the index node one by one as in (14), and the constituent with one of the features and its complement is interpreted via Functional Application, which can be defined as (15) following Heim and Kratzer (1998: 44). The order of the ϕ -features in (14) is irrelevant for Heim (2008).

- (14) $[3^{\text{rd}} [\text{singular} [\text{masculine} [\text{he}_7]]]]$ (taken from Heim (2008))

(15) Functional Application

If α is a branching node, $\{\beta, \gamma\}$ is the set of α 's daughters, and $\llbracket \beta \rrbracket$ is a function whose domain contains $\llbracket \gamma \rrbracket$, then $\llbracket \alpha \rrbracket = \llbracket \beta \rrbracket(\llbracket \gamma \rrbracket)$.

For example, informally, example (16) is only defined if $g(i)$ is a male and an atom, and excludes the speaker and the hearer of the context. If defined, it is true only if $g(i)$ leaves; otherwise it is false.

(16) $\llbracket he_i \text{ leaves} \rrbracket^{g,c}$

This also applies to the first person pronoun *I*. We could assume that it has the index j . It is defined only if j is in the domain of assignment g and $g(j)$ is an atom and includes the speaker of the context. As such, according to Heim (2008) the first person pronoun *I* is also a variable, even though its range is so restricted as to always designate the speaker of the context. Its semantic values vary by the context. Likewise, the second person singular *you* is a variable. It is defined only if it is an atom and includes the hearer (but excludes the speaker); the plural *we* is defined only if it is a plurality (a set of multiple individuals) and includes the speaker of the context; the plural *you* is defined only if it is a plurality and includes the hearer and excludes the speaker of the context. As such, the first and second person indexicals are all free variables. When we say that *I* refers to the speaker or *we* refers to a group inclusive of the speaker, we are forced to interpret these pronouns as such because any other referential options would leave the pronoun and any constituent containing it truth conditionally undefined.

In sum, in the present proposal, person indexicals are taken to be as follows:

- (17) a. Person indexicals are free variables, receiving their semantic values from the relevant context; and
- b. They bear presuppositions restricting the range of semantic values with respect to the speech/thought participants of the relevant context.

Strictly speaking, the definition of person indexicals I set forth here includes not only some canonical uses of the English first/second person pronouns, but also certain instances of the English third person pronouns. The third person pronouns often occur as bound variables, but when they are free variables, they fall under my definition of indexicals. There are at least two types of third person indexical uses. I will contend that the second type parallels PC PRO.

The first type of such cases is when they are used demonstratively as in (18), repeating (13) (section 3.3) of the previous chapter.

(18) Look, *he* is naked. (with a pointing gesture)

The demonstrative *he* in (18) falls under the definition (17)a in that it receives its semantic values directly from the speech context. It also meets the definition (17)b; it is a free variable with value restrictions excluding the speaker or the addressee of the speech context (see (13)c). As such, its range is *negatively* defined with respect to the speech participants. Thus, the demonstrative *he* falls under the definition of person indexicals. In fact, when the third person pronouns are bound, such restrictions do not apply. A simple example would be (19).

(19) Everyone loves *himself*.

The reflexive *himself* allows any values with respect to the speech participants. Its range does not exclude the speaker/addressee of the speech context. In any event, although I consider the demonstrative *he* to be a person indexical, I will not say PRO is a third person indexical in this sense.

There is another instance of English third person pronouns being free variables and indexicals. It is when they occur in shifted embedded contexts designating the speaker and/or the addressee (or a group inclusive of either or both) of the shifted context. An overt instantiation of this type is Castañeda's *he** discussed in the previous chapter. This type of third person pronoun is what I strongly argue to be a parallel of PRO. PRO often (but not always) appears to bear third person as in (20).⁴

(20) John_{*i*} promised his mother PRO_{*i*} to behave *himself*.

Nevertheless, PRO meets (17)a in that its semantic value is determined by the context, and also falls under (17)b in that its range is restricted to be inclusive of the speaker or the addressee of the relevant context. As such, PRO is also an indexical. It is a free variable and, in this sense, it is unbound and independently referential. PRO just contrasts with the first/second person pronouns in that its semantic value is determined not with respect to the context of the actual speech, but with respect to the relevant shifted context. I will come back to the issue of context shifting in sections 4.4 to 4.6.

Heim's view on ϕ -features suggests that personal pronouns quantify over sets of individuals, not over individuals. From all possible sets of individuals, ϕ -features select a certain set of sets of individuals which meet their presuppositions. For instance, the feature $[[1st]]$ selects a set of sets of individuals which include the speaker of the context. The selected set of sets of individuals includes a singleton which has only the speaker of the context as its member *and* multi-membered sets with the speaker and others. This view exactly meets my assumption about reference of the personal pronouns.

I could explicate further on what I mean by saying personal pronouns quantify over *sets of individuals*, building on Harbour (2016: particularly 41-42). To make the story simple, imagine a world with only five inhabitants, the speaker (author, ego, etc.) represented as i and the addressee (hearer, audience, etc.) indicated as u . For simplicity, I assume a single speaker i and a single addressee u here (but see 5.4 for plausibility of multi-speakers/authors and multi-addressees). In addition, I assume three other members, o , o' , and o'' ; but this is also for simplicity; in reality, we could have an unspecified number of other members who are neither the speaker nor the addressee.

Under this setting, first person exclusive ranges over the following sets:

- (21) $\{\{i\},$
 $\{i,o\}, \{i,o'\}, \{i,o''\},$
 $\{i,o,o'\}, \{i,o,o''\}, \{i,o',o''\},$
 $\{i,o,o',o''\}\}$

First person inclusive may refer to any of the following sets:

- (22) $\{\{i,u\},$
 $\{i,u,o\}, \{i,u,o'\}, \{i,u,o''\},$
 $\{i,u,o,o'\}, \{i,u,o,o''\}, \{i,u,o',o''\},$
 $\{i,u,o,o',o''\}\}$

In the case of second person, it ranges over the following sets:

- (23) $\{\{u\},$
 $\{u,o\}, \{u,o'\}, \{u,o''\},$
 $\{u,o,o'\}, \{u,o,o''\}, \{u,o',o''\},$
 $\{u,o,o',o''\}\}$

Third person sets include:

- (24) $\{\{o\}, \{o'\}, \{o''\},$
 $\{o,o'\}, \{o,o''\}, \{o',o''\},$
 $\{o,o',o''\}, \emptyset\}$ ⁵

If the number is specified, as for the English first person singular pronoun *I*, it ranges over the unique set $\{i\}$, and always designates the speaker of that imaginary world with five inhabitants; but I still assume that it is a variable ranging over the set $\{\{i\}\}$. If the number is specified as plural, as for the first person exclusive *we*, its variable-nature is clearer. It quantifies over a set of sets of individuals excluding the single-membered set $\{i\}$ from (21), namely $\{\{i,o\}, \{i,o'\}, \{i,o''\}, \{i,o,o'\}, \{i,o,o''\}, \{i,o',o''\}, \{i,o,o',o''\}\}$. However, the notion of first person exclusive without number would range over all sets in (21). This way of thinking applies also to first person inclusive; without number, it ranges over the sets in (22). Likewise, the notion of second person ranges over all sets in (23), and that of third person over those in (24).

This view is precisely what Wechsler's (2010: 335) table introduced in Chapter 2 (section 2.9.3, table (117)) captures in explaining the associative nature of the first/second person pronouns; they do not always refer to multiple speakers or addressees. They refer to a group of people inclusive of the speaker and/or the addressee. I show the table again below.

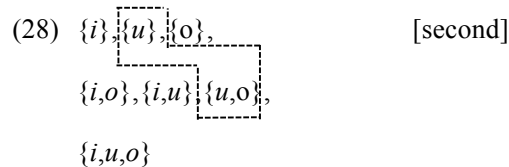
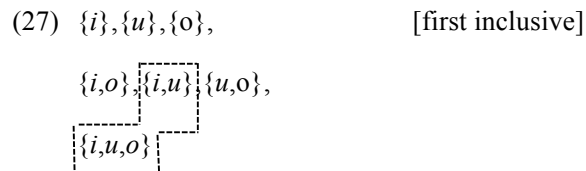
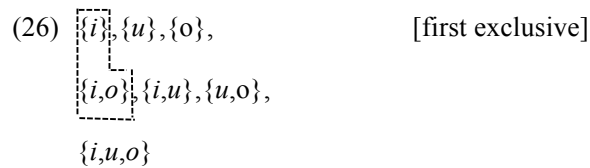
- (25) The Seven Logically Possible Meta-persons, and the Four Attested Pronoun

Types

Possible		Attested
1+2	speaker(s) and addressee(s); no others	A. first inclusive
1+2+3	speaker(s), addressee(s), and other(s)	+Sp +Ad
1	speaker(s) only	B. first exclusive
1+3	speaker(s) and other(s); addressees excluded	+Sp -Ad
2	addressee(s) only	C. second
2+3	addressee(s) and other(s); speakers excluded	-Sp +Ad
3	other(s) only	D. third person
		-Sp -Ad

Although many different variations of personal pronoun systems are attested in the world's languages, some logical alternatives are not attested. In the present Harbour (2016)-like framework, the person system allowed by language seems to distinguish the set of sets such as (21) (first person inclusive) from the set of sets in (22) (first person exclusive) but not $\{\{i,o\}, \{i,o'\}, \{i,o''\}\}$ from $\{\{i,o,o'\}, \{i,o,o''\}, \{i,o',o''\}, \{i,o,o',o''\}\}$.⁶ If we assume two addressees, u and u' , the person system would not distinguish $\{\{i,u\}, \{i,u'\}, \{i,u,u'\}\}$ from $\{\{i,u,o\}, \{i,u,o'\}, \{i,u,o''\}, \{i,u,o,o'\}, \{i,u,o,o''\}, \{i,u,o',o''\}, \{i,u,o,o',o''\}, \{i,u',o\}, \{i,u',o'\}, \{i,u',o''\}, \{i,u',o,o'\}, \{i,u',o,o''\}, \{i,u',o',o''\}, \{i,u,u',o\}, \{i,u,u',o'\}, \{i,u,u',o''\}, \{i,u,u',o,o'\}, \{i,u,u',o,o''\}, \{i,u,u',o',o''\}, \{i,u,u',u',o\}, \{i,u,u',u',o'\}, \{i,u,u',u',o''\}, \{i,u,u',u',o,o'\}, \{i,u,u',u',o,o''\}\}$. Both sets fall under first person inclusive. Under the same assumption with two addressees, even the notion of second person *plural* would not distinguish the set $\{\{u,u'\}\}$ from $\{\{u,u',o\}, \{u,u',o'\}, \{u,u',o''\}, \{u,u',o,o'\}, \dots\}$.

Personal pronouns serve the function of narrowing down the range of options of combinations they can take as their referents. Let us take even a simpler assumption with the domain of assignment g , or an imaginary world with only three inhabitants, one speaker, one addressee, and one other individual. The notion of first person exclusive would pick out the sets surrounded by the dotted lines from all possible combinations as in (26); first person inclusive would pick out the sets as indicated in (27); second person as in (28); third person as in (29). One could assume an infinite number of others, and the results would be similar.



- (29) $\{i\}, \{u\}, \boxed{\{o\}}$ [third]
 $\{i,o\}, \{i,u\}, \{u,o\},$
 $\{i,u,o\}$

I assume that the person system syntactically distinguishes between (26) and (27) as evidenced by those languages that make four-way person distinctions in morphology (e.g. Kalihna (a Carib language) discussed below in section 4.3.1), but the distinctions between, say, $\{i\}$ and $\{i,o\}$ or $\{i,u\}$ and $\{i,u,o\}$ are not syntactically represented in the person system. This implies that such unrepresented distinctions are left syntactically *vague*; they do *not* arise from structural ambiguity. The additional system of number may help make it *unvague* to some extent; for instance, number may serve to distinguish $\{i\}$ from $\{i,o\}$, but it does not help in making distinctions between $\{i,u\}$ and $\{i,u,o\}$ or between $\{i,o\}$ and $\{i,o,o'\}$ in languages where dual/plural distinctions are not made.

The present thesis argues that PRO also picks out the possible range of combinations from all possible combinations under a certain context, just like the notions of first exclusive, first inclusive and second person do. In this way, the referentiality of PRO is comparable to that of the first and/or second person pronouns. I will argue in Chapter 5 that PRO lacks number specifications. This means that syntax has no way of distinguishing $\{i\}$ from $\{i,o\}$ or even $\{u\}$ from $\{u,o\}$; distinguishing $\{i,u\}$ from $\{i,u,o\}$ is impossible even with number. Syntax just leaves us room to freely interpret PRO as $\{i\}$ or $\{i,o\}$ for instance, allowing exhaustive or partial readings with respect to the speaker i . Either reading arises depending on the contextual information provided intra- or extra-sententially. Put another way, the present proposal does not treat an exhaustive reading in PC to be the default; if it were the default, we would need an additional mechanism to bring about a partial reading. PC PRO can be interpreted either partially or exhaustively by default; the relevant contextual information narrows down the options to either one. The situation is similar to how *we* in (30)a and b is interpreted.

- (30) a. [John is talking to Mary, John's fiancée.]
 We will get married in June. (we=John and Mary)

b. [John is talking to Mary; John, Mary, and their friends are going to vote in the election the next day.]

We will all vote for the Democrat tomorrow. (we=John, Mary, and their friends)

The issue remains as to where the notions of *i* and *u* come from both for the overt personal pronouns and PRO. They are both the source of indexicality and ultimately the source of obligatory *de se/te* construals. The rest of the chapter mainly addresses the indexicality issue; but I will explain how indexicality may then be connected to *de se/te* construals in some cases.

4.3. Internal Structures of Indexical Pronouns

This section aims to answer the second question raised in the beginning of this chapter: What morphosyntactic properties does PRO share with overt person indexicals? The intention here is to morphosyntactically capture the indexicality of certain pronouns. The previous pronominal research has at least reached a near consensus that pronouns are not primitives; they involve multiple functional projections. I will first provide brief overviews of two representative studies in this area: Harley and Ritter (2002) and Déchaine and Wiltschko (2002). Both studies reveal that there are discourse related representations in the left periphery of the DP internal structures. They capture the contrast between the first/second person on one hand and the third person on the other by (non)projection of this peripheral category. However, I will propose that the contrast captures the split in indexicality, not person: DPs with a left peripheral projection are indexicals; DPs without this projection are non-indexicals. It does not capture the first/second vs. third person divide. The updated paper by Déchaine and Wiltschko (2009) suggests this line of thought is correct. In short, I argue that PRO shares this left peripheral projection with overt indexical pronouns.

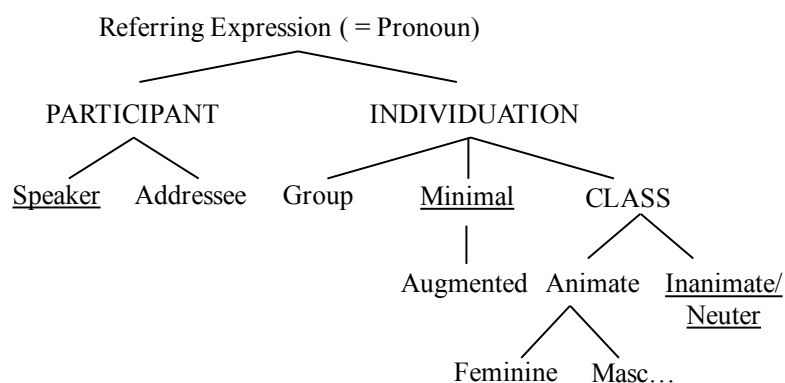
4.3.1. Feature Geometric Approach: Harley and Ritter (2002)

Harley and Ritter (2002) propose that the features on the pronouns and agreement are not randomly bundled, but highly constrained and hierarchically organized. Their arguments are mostly based on empirical data on the morphology of the pronouns in the world's languages.

Their database consists of data from 110 languages. They use the term *feature geometries* to express their notion of hierarchical relationships among the pronominal features. For instance, as is often presupposed without much discussion, the pronominal features can be grouped into some natural classes such as person, number, and gender. There are some constrained relationships among these classes such as that gender depends on number (i.e., if there is gender agreement, there is always number agreement) (Greenberg (1963)). Some dependencies are also observed among the features of the same natural class such as that dual depends on plural. In this sense, ϕ -features do *not* form unstructured bundles.

(31) represents Harley and Ritter's (2002) proposal for the feature geometry of pronouns.

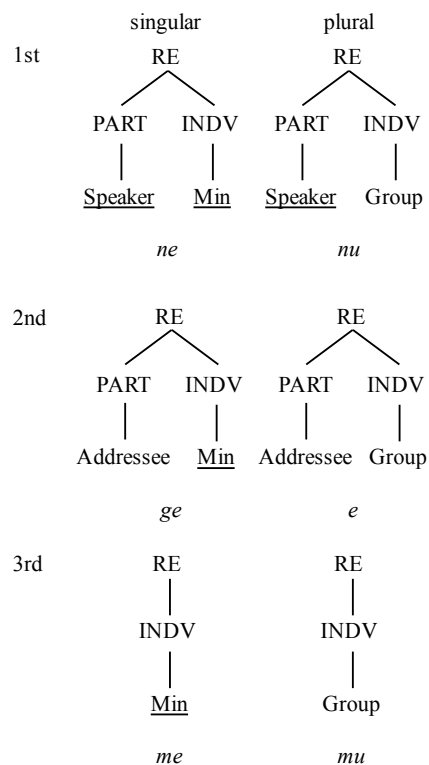
(31) Morphosyntactic Feature Geometry (Harley and Ritter (2002: 486))



At the root node is a referring expression or a pronoun. Its features can be grouped into three classes: the PARTICIPANT node, the individuation node, and the class node (these nodes are in small capital letters in the chart). The PARTICIPANT node has two dependents, Speaker and Addressee; the individuation node represents number systems, Group, Minimal, and Augmented; and the class node represents animacy, gender, and other class systems. The underlines on Speaker, Minimal, and Inanimate/Neuter indicate the default status for their immediately dominating node. They focus on the first two nodes, the PARTICIPATION node and the INDIVIDUATION node, which capture the systematic organizations of the pronominal systems in a great variety of languages.

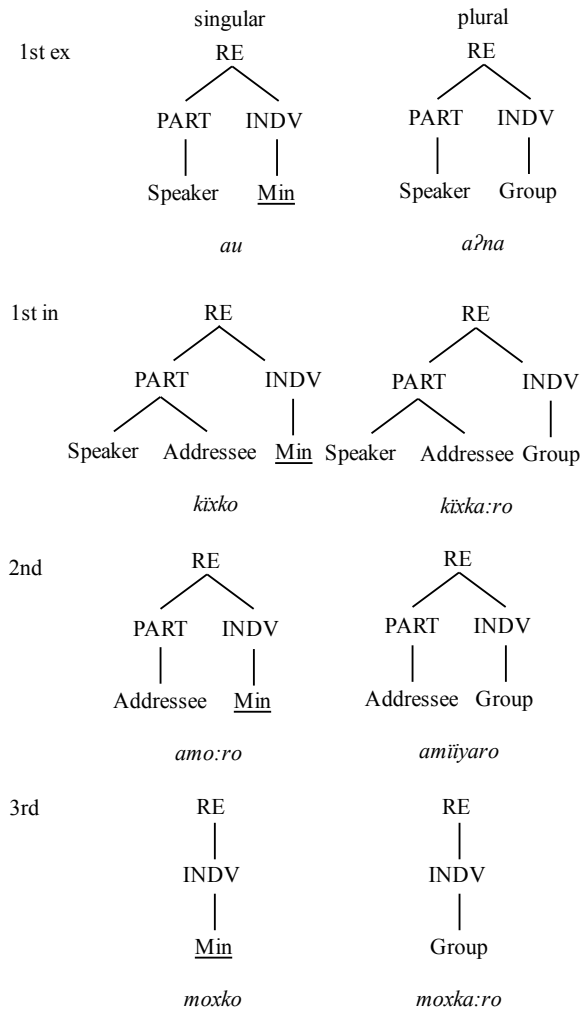
For example, the pronominal system of Daga (a language in the Trans-New Guinea family) distinguishes three persons and two numbers. Under Harley and Ritter's geometric approach, Daga emphatic pronouns can be represented as follows:

(32) Geometries of Daga Pronouns (Harley and Ritter (2002: 489))



The three person paradigm (first, second, and third) of Daga is representative of 52 genetically distinct languages and subfamilies out of 91 according to Harley and Ritter (2002: 496). Of 110 languages in their database, some languages from the same subfamily are counted as one; 66 out of 91 have the two number (singular, plural) system just like Daga. As such, Daga has a very representative pronominal system. The English pronominal system falls under the same group as Daga within the two node system. Another representative language is Kalihna (a Carib language). It has four persons and two numbers in its emphatic pronominal system as in (33):

(33) Geometries of Kalihna Pronouns (Harley and Ritter (2002: 491))



Contrasted to the Daga pronominal system, Kalihna distinguishes first person exclusive from first person inclusive. Harley and Ritter represent first inclusive as a conjunction of the Speaker and the Addressee features. For this reason, the PARTICIPANT node is fully specified and has no default; no underline is placed under the Speaker. The Kalihna four-person system represents 32 genetically distinct languages and subfamilies out of 91.

In sum, 84 out of 91 languages and subfamilies have either a three-person system represented by Daga (52) or four-person system represented by Kalihna (32). The rest of the languages use demonstratives for the third person. As to the number system, most (66) distinguish two numbers (singular and plural); both Data and Kalihna fall under this group. Some others (18) use a three-number system (singular, plural, and dual). Very few languages employ

either a four-number system (singular, plural, dual, and trial/paucal) or make no number distinctions.

What carries most significance for our purpose in Harley and Ritter's geometric analysis is that it captures the distinction between the first/second person pronouns, canonical indexical pronouns, and the third person pronouns. Third person is less marked than first/second person in that it lacks the PARTICIPANT node representation. For Harley and Ritter, first/second person is fundamentally different from third person. The former is discourse dependent while the latter is not. They illustrate discourse (in)dependency of person by the following conversation:

- (34) a. A: I_A think he_C wants you_B advice.
b. B: I_B think you_A're nuts. He_C doesn't want anything.

(Harley and Ritter (2002: 487))

The *I* in (34)a refers to person A but the *I* in (34)b refers to person B. Likewise the references of *you* switch between (34)a and b. However, the reference of *he* could stay constant between the two utterances. The two nodes, the PARTICIPANT node (person) and the individuation node (number and gender) represent two distinct sets of features: one is discourse dependent and the other discourse *in*dependent. This contrast captures the well-discussed notion that third person is not a true realization of person, but an indication of lack of person. In Harley and Ritter's geometry, the PARTICIPANT node is only relevant to first/second person. For third person, this node is completely absent. The contrast directly pertains to the indexicality of the first/second person pronouns. At this point, we can temporarily assume that Harley and Ritter's PARTICIPANT node is responsible for the indexicality of pronominal expressions, and that this node is also morphosyntactically represented within the structure of PC PRO.

I will develop my proposal on the internal structure of PC PRO building on Harley and Ritter's geometric analysis, but my view departs from theirs in some crucial points. I do not fully agree with their fundamental assumptions about what pronominal features denote. Discussing these points of disagreement will probably help to clarify my argument.

The first issue is most important for the argument of the present chapter. It concerns whether the representation of the PARTICIPANT node and lack of it really correspond to the geometric divide between first/second person pronouns and third person pronouns. As we will

see in the discussion of Déchaine and Wiltschko (2009), first/second person pronouns are not always discourse dependent indexicals; neither are third person pronouns always non-indexicals. More concretely, Harley and Ritter's proposal works mostly well for root unshifted contexts, where first and second person pronouns are indexicals, and third person pronouns are non-indexicals. However, once one takes embedded shifted contexts into consideration, non-indexical first/second person and indexical third person are possible. What I will propose towards the end of this chapter is that pronouns may have indexical vs. non-indexical structural differences cut across various persons (i.e. first, second, and third person). We have indexical (discourse dependent) and non-indexical (non-discourse dependent) first/second person pronouns as well as indexical and non-indexical third person pronouns, although in English the indexical and non-indexical divide is not overtly expressed in morphology.

Second, Harley and Ritter are not very clear on whether a combination of pronominal features is interpreted as a union or as an intersection. This concerns the issue of whether pronominal features range over individuals or sets of individuals. Harley and Ritter sometimes appear to assume combinations of features to be interpreted as a union. For instance, they suggest that first person inclusive is a conjunction of the Speaker and the Addressee features. They seem to mean that first person inclusive directly denotes a set of individuals consisting of the speaker and the addressee of the context. However, when they discuss the dual feature via the combination of the Minimal and the Group features, they appear to assume an intersective interpretation. By selecting a set of minimally plural sets from a set of plural sets, we get duals. For simplicity, we could think of a world with only five inhabitants {a, b, c, d, e}; the set of plural sets has 26 members, {{a,b},{a,c}, {a,d}, {a,e},{b,c},{b,d},{b,e},{c,d},{c,e}, {d,e},{a,b,c}, {a,b,d},{a,b,e},{a,c,d},{a,c,e}, {a,d,e},{b,c,d},{b,c,e},{b,d,e},{c,d,e}, {a,b,c,d},{a,b,c,e},{a,b,d,e},{a,c,d,e},{b,c,d,e},{a,b,c,d,e}}; the set of minimally plural sets includes a subset of the above plural set, namely {{a,b},{a,c}, {a,d},{a,e},{b,c},{b,d}, {b,e},{c,d},{c,e},{d,e}} with 10 members corresponding to duals. I assume a similar intersective interpretation for PARTICIPANT features, taking the first person inclusive set to be an intersection (a subset) of the first person set. Assuming only five individuals including one speaker, one addressee, and three others as we did in the previous section, the first person ranges over sets of

individuals inclusive of the speaker (16 sets as members of a bigger set shown in (21) and (22)); a subset of this set is a set of sets of individuals inclusive of the addressee as well as the speaker, which correspond to 8 sets of members in (22). Harley and Ritter seem to be aware of this problem (see Harley and Ritter (2002: 492, fn. 10)).

The third point pertains to the second one. They assume the Minimal number feature to be the default. Their assumption is based on the morphological markedness of the plural feature. However, on interpretative terms, adding the Group feature to the Minimal feature does not yield the dual as they suggest, if combinations of the features are interpreted intersectively. Likewise, adding the Group feature to the combination of the Speaker and the default Minimal does not yield first person plural. I assume there is no default number. Underspecified number denotes a set of sets of individuals including both singletons and non-singletons.

The last point is just a discussion for a possible extension of their analyses, which bears importance for the present thesis. They focus on the morphology of certain overt pronominal forms (e.g. nominative, emphatic) occurring in each language in their database. Thus, the English pronominal system is analyzed to make only three person distinctions. However, this should not be taken as an indication that the language entirely lacks the feature geometries that correspond to first person inclusive and exclusive. They may be present covertly in the pronominal form *we* or in the null pronominal element, PRO. Harley and Ritter (2002) present some discussion on the feature distinctions made in the agreement paradigm. I am sure that they also recognize covert distinctions not overtly expressed even in the agreement. Typological studies that include the interpretative distinctions of null pronominal forms seem almost impossible. However, we could employ some overt distinctions in some other languages to analyze the morphosyntactic structures of a null element of the language under study. That is what the present thesis proposes for the analysis of PRO.

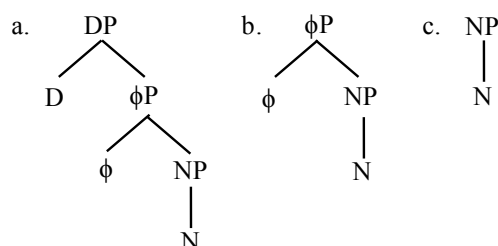
4.3.2. Categorical Divergence among Pronouns: Déchaine and Wiltschko (2002)

Déchaine and Wiltschko (2002) also focus on the non-primitive, decomposable nature of pronouns. While Harley and Ritter (2002) detail the morphological makeups of the pronouns, Déchaine and Wiltschko (2002) draw more attention to the interaction of the internal pronominal

structure with the external syntax. Building on Cardinaletti (1994), Ritter (1995), and Noguchi (1997), they argue that pronouns vary, both across languages and within a language, in their categorical statuses; pronouns are not uniformly DPs as maintained by Postal (1970b) and Abney (1987), but they are DPs, ϕ Ps, or NPs. Their categorical status determines whether they can or cannot be an argument, and they can or cannot be bound.

(35)a-c represent their proposed structures for DPs, ϕ Ps, and NPs:

(35)



They predict that the distribution of DP pronouns is restricted to argument positions. DP pronouns are semantically and syntactically determiners; they give rise to definite interpretations and behave like R-expressions in terms of binding theory. DP pronouns are conceived of as Condition C pronouns. ϕ P pronouns have an intermediate status between DPs and NPs. ϕ P projection encodes number and gender, and in certain cases person. They can appear as a predicate or an argument. Importantly, they are variables under binding theory; they are Condition B pronouns. NP pronouns behave as lexical nouns, appear as predicates and semantically constants. They hold that NP pronouns are undefined with respect to binding theory.

Déchaine and Wiltschko (2002) are known for their claim that the English first person and second person pronouns are DPs contrasted to the English third person pronouns being ϕ Ps. However, this claim has met some criticisms including Rullmann (2004). The present study also sees the claim as problematic. Nonetheless, Déchaine and Wiltschko's (2002) greatest contribution is their observation that personal pronouns do not form a homogeneous group. They do *not* argue that the observed correlation for the English pronominal system (i.e. the first/second person pronouns correspond to DPs; and the third person pronouns to ϕ Ps) holds cross-linguistically. For instance, they analyze all Halkomelem (a Central Coast Salish Language) independent pronouns to be DPs irrespective of person. They also maintain that both

French first/second person clitics and third person clitics are ϕ Ps. One of their core contentions is that first/second person pronouns are not cross-linguistically and inherently DPs or ϕ Ps. They even suggest that pronouns of the same person in the same language may contrast with each other in their DP/ ϕ P statuses. In one dialect of English, the third person pronoun *they* may be a ϕ P while *them* may be a DP. This reveals their core argument that pronouns form a heterogeneous group across different persons and within the same person.

In fact, Déchaine and Wiltschko (2009) significantly revised their view on the English personal pronouns. In essence, they now argue that the English first/second person pronouns may be either DPs or ϕ Ps. They also suggest that the English third person pronouns may also be DPs or ϕ Ps. I will first introduce Déchaine and Wiltschko's (2002) proposal on the English pronouns with the counter-arguments raised by Rullmann (2004). This should help in understanding Déchaine and Wiltschko's (2009) updated proposal.

Déchaine and Wiltschko (2002) argue for the DP status of the English first/second person pronouns, first, by showing that the first/second person pronouns behave like determiners while the third person pronouns do not, citing Postal (1970b):

- (36) a. *we* linguists *us* linguists
 b. *you* linguists *you* linguists
 c. **they* linguists **them* linguists

They maintain that the first/second person pronouns being DPs can function as determiners and allow an overt NP constituent, but the third person pronouns do not because they are ϕ Ps.

However, the clear distinction between first/second person and third person does not hold across different dialects of English. Déchaine and Wiltschko (2002) present relevant data from a different dialect of English, which reveals the following judgment (first mentioned in Jackendoff (1977: 106)):

- (37) a. *we* linguists *us* linguists
 b. *you* linguists *you* linguists
 c. **they* linguists *them* linguists

In this dialect, the third person pronoun *them* in its accusative form may function as a determiner. Their solution to this issue was to give *they* and *them* distinct DP/ ϕ P statuses in this particular dialect: *they* is a ϕ P, but *them* is a DP.

Second, on binding theoretic terms, they propose that the English first/second person pronouns are DPs in that they do not support bound variable readings. Consider (38) taken from Déchaine and Wiltschko (2002: 423):

- (38) I_i know that John saw me_{*i*}, and Mary does too.
- = a. ‘I know that John saw me, and Mary knows that John saw me.’
 $\lambda x [x \text{ knows that John saw me}] \ \& \ \lambda y [y \text{ knows that John saw me}]$
- ≠ b. ‘I know that John saw me, and Mary knows that John saw her.’
 $\lambda x [x \text{ knows that John saw } x] \ \& \ \lambda y [y \text{ knows that John saw } y]$

According to Déchaine and Wiltschko’s (2002) judgment, sentence (38) only allows a strict reading as in (38)a but not a sloppy reading as in (38)b. This is contrasted to the French first person clitic as in (39), adopted from Déchaine and Wiltschko (2002: 431):

- (39) &[Je]_{*i*} pense que la police [m]_{*i*}’ a vu, et Marie le pense aussi.
 I think that the police me have seen and Marie it thinks also
- = a. ‘I think that the police saw me, and Marie thinks that the police saw me.’
 $\lambda x [x \text{ thinks that the police saw me}] \ \& \ \lambda y [y \text{ thinks that the police saw me}]$
- = b. ‘I think that the police saw her, and Marie thinks that the police saw her.’
 $\lambda x [x \text{ thinks that the police saw } x] \ \& \ \lambda y [y \text{ thinks that the police saw } y]$

The observations including (39) lead them to conclude that the French first/second person clitics are ϕ Ps. Furthermore, the English first/second person pronouns contrast with the English third person pronouns in the availability of a bound variable reading. Déchaine and Wiltschko (2002: 423) mention (40) as evidence that the English third person pronouns support a bound variable reading:

- (40) [Every candidate]_{*i*} thinks that [he]_{*i*} will win.

The English third person pronouns can also be anaphorically bound (Déchaine and Wiltschko (2002: 423)):

- (41) [John]_{*i*} thinks that [he]_{*i*} will win.

However, Déchaine and Wiltschko's judgment on (38) is dubious, as suggested by Rullmann (2004). To Rullmann, it is not clear whether the sloppy reading is really excluded in (38). He contends that (38) could more easily give rise to a sloppy reading if we replace *and* with *but* as in (42) (Rullmann (2004: 162, fn. 3)):

(42) I know that John saw me, but Mary does too.

Besides, it is now widely accepted that the first/second person pronouns support bound variable readings (Partee (1989), Kratzer (1998, 2009), Rullmann (2004)). In the following examples, variable readings are possible with the first/second person pronouns, according to Rullmann (2004: 162):

- (43) a. I got a question I understood, but John didn't.
b. I hope that I will win, but of course you do too.
c. You may think you're the smartest person in your class, but so do most of the other kids.

As such, the contrast between the first/second person and the third person Déchaine and Wiltschko (2002) argue for is not very clear with respect to their binding theoretic statuses either.

Thirdly, Déchaine and Wiltschko (2002) maintain that DP pronouns can only appear in argument positions while ϕ P pronouns may occur both in argument and predicate positions. However, the first/second person pronouns, allegedly DPs, can be predicates as in (44). They acknowledge this fact themselves (Déchaine and Wiltschko (2002: 425)):

- (44) a. That's [*me*].
b. That's [*you*].

Lastly, they show first/second person contrasts with third person in their capabilities in compound formation. They argue that only the third person pronouns (ϕ Ps) form compounds.

Observe the contrast in (45):

- (45) a. [*she*]-male
b. [*he*]-goat
c. * [*me*]-male
d. * [*you*]-goat

Rullmann (2004: 160), however, cites various examples of the first person *me* and *we* and the second person *you* participating in compound formation:

- (46) a. [me]-decade
- b. [we]-society
- c. [you]-factor
- d. [you]-section

Déchaine and Wiltschko (2002: 426) are aware of these counterexamples. They suggest that the compounds formed with the first/second person pronouns are phrasal compounds whereas those with the third person pronouns are non-phrasal. Nevertheless, no clear evidence is provided to illustrate morphological differences between the expressions in (45)ab and (46)a-d.

As such, Déchaine and Wiltschko's (2002) arguments for the contrast between the first/second vs. third person based on their DP/ ϕ P categorial distinctions are not straightforwardly tenable in all four points they raised. However, that should not lead us to the rejection of their proposal that pronouns form a heterogeneous group and that they may be categorially distinct from one another. Déchaine and Wiltschko (2002) just drew a line in the wrong place for the English pronouns. Déchaine and Wiltschko (2009) present a very different view on the English pronouns; comparing their new view (2009) with their old view (2002) contributes to revealing the nature of the first/second person pronouns in relation to the third person pronouns.

4.3.3. Categorical Divergence and Indexicality: Déchaine and Wiltschko (2009)

Déchaine and Wiltschko in their updated paper consider when and why first/second person pronouns may be bound variables. Although, first/second person pronouns are often assumed to be inherently indexical and do not appear to support bound variable readings in most cases, they may in fact be bound. (47)ab are the oft-cited example from Partee (1989: fn. 3) similar to (43)a above:

- (47) a. Only *I* got a question that *I* understood. (Nobody else did.)
- b. Only *you* did *your* homework. (Nobody else did.)

Both (47)a and b give rise to ambiguity. They allow both strict and sloppy readings, and in the latter readings the first/second person pronouns *I* and *you* behave like bound variables. This constitutes a challenge for the inherent indexical view of the first/second person. They can behave both as indexicals and bound variables.

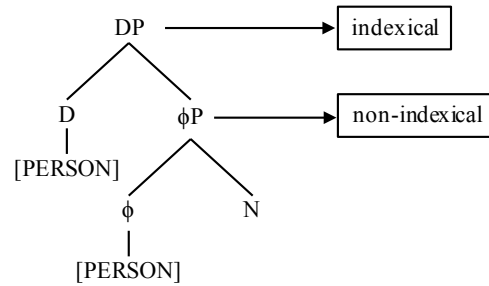
The dual nature of first/second person pronouns is also evident in the third person. The English third person *he*, for instance, may be used demonstratively as an indexical as in (48)a, anaphorically as in (48)b, or as a bound variable as in (48)c (Déchaine and Wiltschko (2009: 2)):

- (48) a. I saw *HIM*. [accompanied by ostension]
b. Q: Have you seen Peter lately?
A: Yes, I saw *him* yesterday.
c. Only *he* got a question that *he* understood. (Nobody else did.)

Note that Déchaine and Wiltschko (2009) calls *HIM* in (48)a an indexical in a different sense from the indexicality I assume for PC PRO in this thesis. *HIM* here falls under the first type of indexical third person I discussed in section 4.2 (around (18)). It is an indexical in that it receives its semantic value directly from the utterance context and that its possible values exclude the speaker/addressee of that context. In contrast, PC PRO's indexicality comes from its designating the speaker/addressee of the shifted context.

Nonetheless, examples in (47) and (48) reveal that both first/second person and third person may potentially support indexical and non-indexical construals. Observing these facts, Déchaine and Wiltschko (2009) suggest that the DP/ ϕ P categorial statuses correspond to indexicality and non-indexicality. They argue that the person features are in D when the pronouns function as indexicals, but they are in ϕ when they are non-indexicals. Their proposal can be schematically represented as (49):

(49)



(based on Déchaine and Wiltschko (2009: 11))

Following Déchaine and Wiltschko (2002), they consider D to be the locus of definiteness. They further assume definiteness and indexicality are deeply connected based on analyses such as those of Elbourne (2005). Under such proposal, any person, first, second or third, is not inherently indexical or non-indexical; its indexicality is determined by its structure. Both the English first/second person and third person may be indexical or non-indexical; the English pronouns of all persons may be DPs or φPs.

The proposal as in (49) predicts that in contexts where the φP structure is unavailable, a bound reading should be impossible. This is borne out by pronoun-noun sequences such as *us linguists* (those we saw in (36) and (37)). Déchaine and Wiltschko posit that pronoun-noun sequences should always be DPs with the structure in (50):

(50) [DP *us* [φP -s [NP *linguist*]]] (taken from Déchaine and Wiltschko (2009: 14))

Since the plural marker *-s* occupies φ, the first person feature *us* cannot be located at φ; *us* should be at D. Thus, the expression *us linguists* is predicted to exclude a bound variable reading. The following shows this prediction is correct:

(51) Only we got a question that *us linguists* understood.

≠ (i) λx [x got a question that x understood]

= (ii) λx [x got a question that *us linguists* understood]

(taken from Déchaine and Wiltschko (2009: 14))

Intriguingly, when we force the bound reading with the predicate *be the smartest person in the world* as in (52), the sentence turns out semantically infelicitous.

(52) # We think *us linguists* are the smartest person in the world.

(Adapted from Déchaine and Wiltschko (2009: 14))

However, contrasted to these pronoun-noun expressions, the English first/second person pronouns allow both indexical and bound readings. (47)ab above reveal that the English nominative and possessive first/second person pronouns admit both readings. The accusative first/second person pronouns also permit indexical and bound readings. Rullmann's (2004) counterexample to Déchaine and Wiltschko (2002) ((42) repeated as (53)) exemplifies the first person accusative bound variable:

(53) I know that John saw me, but Mary does too.

The English first/second person reflexives also support both readings. It is sometimes assumed that reflexives do not allow a strict reading under VP ellipsis, but that is not the case. Consider (54) from Déchaine and Wiltschko (2009):

(54) I love myself and so does Sam.

= (i) Sam loves himself.

= (ii) Sam loves me. (Adapted from Déchaine and Wiltschko (2009: 7))

Some other examples of strict readings with reflexives under VP ellipsis are shown in (55)ab.

These are taken from Buring (2005:138), but (55)a was originally presented in Sag (1976: 140).

(55) a. Betsy couldn't imagine herself dating Bernie, but Sandy could.

b. I could see myself having a romantic dinner with Winona Ryder, but my girlfriend couldn't.

Thus, the first/second person reflexives may be a DP or a ϕ P, and bear a corresponding structure as in (49).

It seems that the first/second person nominatives and accusatives require focus to permit or facilitate bound variable readings; there may be some interactions between focus and the D projection as suggested in Déchaine and Wiltschko's updated paper (2009). However, this issue is left open to future study.

The English pronominal paradigm mostly represents the homophonous relations between the DP and ϕ P structures. Nonetheless, there are languages, according to Déchaine and Wiltschko (2009), in which the sub-constituency of a ϕ P within a DP is more morphologically transparent (e.g. Halkomelem) in their pronominal forms. There are also languages in which DP

pronouns and ϕ P pronouns involve suppletion and seem morphologically unrelated (e.g. Plains Cree).

For the present study, the importance of Déchaine and Wiltschko's (2002, 2009) argument lies in their proposal that pronouns constitute a heterogeneous group with various categorical statuses. In their 2002 article, they posited that, in English, the first/second person pronouns are DPs while the third person pronouns are ϕ Ps. However, in their updated paper (2009), they revise their idea and propose that the DP/ ϕ P structural divide captures the indexicality contrast that cuts across the same person: irrespective of person, indexicals are DPs whereas non-indexicals are ϕ Ps. Their focus is more on the indexicality and bindability of the first/second person pronouns, and they do not much discuss the divide among third person pronouns. Nevertheless, their arguments suggest it is just as natural to posit the third person indexicals (DP third person) and the third person non-indexicals (ϕ P third person).

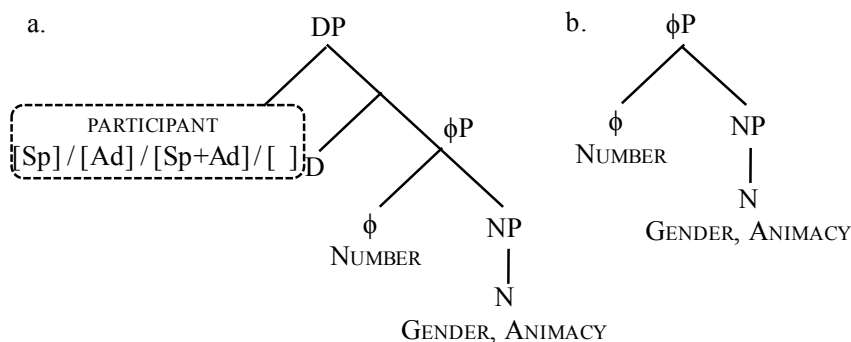
4.3.4. Internal Structure of Pronouns: Proposal

The goal of this section (4.3) was to clarify the common morphosyntactic properties of PRO and overt canonical indexicals such as the first/second person pronouns. Here I propose that they have very similar internal structures. Based on the discussion on Harley and Ritter's (2002) feature geometric approach to personal pronouns in subsection 4.3.1, I assume that some nominals originate with a participant representation in the left periphery. I incorporate Harley and Ritter's geometric analysis into Déchaine and Wiltschko's (2002, 2009) DP/ ϕ P representations of personal pronouns considered in subsections 4.3.2 and 4.3.3.⁷ Harley and Ritter's PARTICIPANT node will be projected as a Spec DP element which licenses D, representing indexicality and definiteness in Déchaine and Wiltschko's framework. I assume Harley and Ritter's individuation (number) node corresponds to the ϕ head under Déchaine and Wiltschko's proposal. There may also be the Gender head between ϕ and N; for the present study, however, I simply assume various class related features such as gender and animacy are on the N head.

In sum, (56)a represents the structure of the pronouns in their indexical use, including the canonical use of the first/second person pronouns and PRO. As discussed in the previous two subsections, the third person pronouns may also have the structure (56)a when they are used

indexically. (56)b, on the other hand, is the representation of bound pronouns. We saw that personal pronouns of all persons may be bound. As such, not only the third person pronouns but also the first/second person pronouns may bear the structure (56)b; bound *I*, *we*, and *you* have this structure as well as *he*, *she*, and *them*.

(56)



Note the specifications on the PARTICIPANT node in (56)a. I assume that when the pronoun represents the speaker, it generates with an [Sp] feature. Likewise, [Ad] represents the addressee and [Sp+Ad], both the speaker and the addressee. The point to be stressed here is that bearing [Sp] or [Ad] does not necessarily correspond to first or second person. Pronouns with [Sp] or [Ad] may end up expressed as third person. The blank brackets [] may appear confusing. They correspond to the cases of the demonstrative third person pronouns, which are indexical but do not represent either the speaker or the addressee. The demonstrative third person pronouns are distinguished from the bound variable third person pronouns which bear the structure (56)b. Pronouns with this blank feature (demonstrative third) do not play an important role in the present study; they are included just for completeness of the picture.

The proposal, presented as (56), thus makes no distinctions between different persons. Internal structures of the pronouns just distinguish between presence and absence of indexicality. A question arises as to what determines person (first, second, and third) and its correspondent form. How do some pronouns end up being specified as first person bearing the form *I* or *we*, while others turn out to be third person with the form *he* or *they*? The last two sections will take up this issue.

4.4. Indexical Shift

From this section, we explore the third question raised at the beginning of this chapter. Namely:

(57) What are the syntactic mechanisms behind indexical shifting?

I first consider so-called shifted or shifty indexicals observed in the world's languages, and present my overall view on how I relate PRO to them.

4.4.1. Background

Let us begin with the oft-cited indexical shifting example of Amharic, adapted from Schlenker (1999: 21):

- (58) Jonn Jägna nāNN yt-lall.
John hero I-am says-3 sg.m
a. 'John_i says that he_i is a hero.'
b. 'John says that I am a hero.' (*I* referring to the speaker of the entire utterance.)
Lit. 'John says I am a hero.'

(58) literally corresponds to the English sentence *John says I am a hero*. In English, *I* corresponds to the speaker of the utterance context, but in Amharic, *I* may refer to *John*, the speaker of the reported speech act as in the gloss in (58)a. Note that it may also refer to the actual speaker as indicated in (58)b. Thus, sentence (58) allows two readings.

(59) and (60) are Zazaki data adapted from Anand and Nevins (2004: 21):⁸

- (59) Heseni_j (mi_k -ra) va kε εz_{j/k} dεwletia.
Hesen-Obl (I-Obl-to) said that I rich-be-Pres
'Hesen said that {I am/Hesen is} rich.'
- (60) Heseni_j (Ali_k -ra) va kε t_{i/k} dεwletia.
Hesen-Obl (Ali-Obl-to) said that you rich-be-Pres
'Hesen said that {Ali is/you are} rich.'

(*i* = the addressee of the actual utterance)⁹

In (59), the pronoun *ez* refers to either the speaker of the utterance context (= *mi*) or the speaker of the matrix event (= *Hesen*). Similarly, in (60), *ti* refers to either the addressee of the utterance or *Ali*, the addressee of the reported event. Both structures are two-way ambiguous.

Clarification on the terminologies is in order. Although we have locative and temporal indexicals, I will use the term *indexicals* to exclusively refer to the personal pronouns or agreement designating the speaker and/or the addressee of the relevant context (unless otherwise mentioned). Furthermore, I will split *indexicals* into three types. The first type is *unshifted indexicals* which designate the speaker and/or the addressee of the actual speech context. The second type is *shifted indexicals* that designate the speaker and/or the addressee of the reported speech/thought context. Note that the speaker is a cover term including not only the speaker of speech acts but also the author of mental attitudes. The third type is *shifty indexicals* that may refer to the speaker and/or the addressee of either the actual speech context or the reported speech/thought context.¹⁰ Put another way, shifty indexicals represent homophonous realizations of unshifted and shifted indexicals. The Amharic and Zazaki data in (58) to (60) fall under the shifty indexicals; they bring about ambiguity. Now, what I call shifted indexicals here are often called *logophors* in that they designate the speaker/author of the reported context but not that of the actual speech context; however, sometimes, the term *logophor* or *logophoric* is used to describe the nature of an indexical which may either designate the speaker/author of the reported context or that of the actual context (i.e. those defined as shifty indexicals above). Thus, the term *logophor* is somewhat confusing. My intention in defining three types of indexicals as above is to avoid such confusion.

Under my definitions, the Ewe *yè* (often known as a logophor) falls under shifted indexicals. Pearson's (2013) observation on *yè* supports this view. *Yè* always refers to the speaker or the author of the reported speech event or the reported mental state as in (61); *yè* does not virtually occur in the matrix clause (62); and even when it seems to occur in the matrix context, it is interpreted as falling under the scope of a matrix predicate in another sentence as in (63). (61)-(63) are taken from Pearson (2013: 438-439), but (61) originally appeared in Clements (1975).

- (61) Kofi_i be yè_{i/*j} dzo.
 Kofi say LOG leave
 ‘Kofi_i said that he_{i/*j} left.’
- (62) * Yè dzo.
 LOG leave
- (63) Kofi_i be yè_i bidzi. Mary zu yè_i.
 Kofi say LOG angry Mary insult LOG
 ‘Kofi_i said he_i was angry. Mary insulted him_i.’

Under this perspective, the Japanese embedded imperative and other force morphologies discussed in Chapter 2 can be conceived of as instances of shifty indexicals. The Japanese imperative morphology is in effect a type of addressee agreement on the verb.¹¹ The same morphology may appear both in roots (unshifted) and embedded environments (shifted). In the former, the imperative agreement designates the addressee(s) of the actual utterance context while the latter, the addressee(s) of the reported speech act. Thus, the Japanese imperative morphology corresponds to a shifty second person. Observe the following:¹²

- (64) Chanto benkyoo si-*ro*.
 hard study do-Imp
 ‘Study hard!’
- (65) Oto-san-wa musuko-ni [chanto benkyoo si-*ro*-to] it-ta.
 Father-Top his son-Dat [hard study do-Imp-C_{to}] say-Past
 ‘Father told his son to study hard.’

In fact, this is exactly what happens in Amharic embedded imperatives like (66) taken from Leslau (1995: 779), cited in Schlenker (2003a: 409):

- (66) min amt'-a ind-al-ə-ññ al-səmma-hu-mm
 what bring.IMPER-2M COMP-say.PF-3M-1sO NEG-hear.PF-1S-NEG
 ‘I didn’t hear what he told me to bring.’
 (Lit. I didn’t hear that he said to me bring what)

These sets of data reveal that languages allow indexical shifting, where the semantic values of indexical expressions may be determined by the reported speech or thought context.

According to Deal (2017), indexical shifting has been observed in a great variety of languages in five continents and at least nine language families (see Deal (2017: 3) for the list of indexical shifting languages identified in the literature). Indexical shifting is a wide-spread phenomenon. My assumption is that indexical shifting is an even wider phenomenon than recognized by Deal (2017); if we included *covert* indexical shifting cases such as PRO and *he**, English would fall under indexical shifting languages, and presumably most of the world’s languages would, too.

4.4.2. Indexical Shift in English

I assume that indexical shifting takes place both syntactically and semantically in English, although it is less perspicuous than those already known to allow shifted/shifty indexicals.

Consider the English gloss for (58):

(67) John said he is a hero.

Taking that *he* designates John, at least two readings are possible:

(68) a. John said ‘I am a hero.’

b. John said ‘he is a hero.’ (without being aware that the man he is talking about is in fact John himself)

Importantly, it is precisely (68)a that corresponds to the Amharic shifted reading in (58), repeated here as (69). (68)a corresponds to (69)a.

(69) John Jägna näNN yt-lall.

John hero I-am says-3 sg.m

a. ‘John_i says that he_i is a hero.’

b. ‘John says that I am a hero.’ (*I* referring to the speaker of the entire utterance.)

Lit. ‘John says I am a hero.’

According to Schlenker (1999), to express (68)b, the English *de re he*, a third person agreement is employed in Amharic. Observe (70):

(70) a. John səwyew Jägna näw alä.

John the-man hero is said

‘John_i said the man_i (*de re* John) is a hero.’

- b. John əne Jägna nāNN alä.
 John I hero am said
 ‘John_i said {he_i (*de se* John) is /I_j am} a hero.’

(Based on Schlenker (1999: 97))

In Amharic, in a *de re* context, a third person morphology occurs as in (70)a, while the first person forms *əne* and *nāNN* are used when expressing a *de se* reading (70)b (putting aside the actual speaker construal).

Thus, we see the following correspondence between the English and the Amharic pronouns. One of the instances of English *he* corresponds to the Amharic shifty indexical.

(71)

	unshifted/actual speaker indexical	shifted speaker indexical	non-indexical
English (pronoun)	<i>I</i>	<i>he</i>	<i>he</i>
Amharic (‘be’ agreement)	<i>nāNN</i>	<i>nāNN</i>	<i>nāw</i>
Ewe (pronoun)	<i>m</i>	<i>yè</i>	<i>e</i>

The third row shows data relevant for the Ewe logophor *yè*, contrasted with its unshifted counterpart *m* and non-indexical third person pronoun *e*. Observe the following from Pearson (2013: 443-449). (72) and (73) repeat (61) and (62).

- (72) Kofi_i be yè_i/_{*j} dzo.
 Kofi say LOG leave
 ‘Kofi_i said that he_i/_{*j} left.’

- (73) * Yè dzo.
 LOG leave
 Intended: ‘He left.’

- (74) e dzo.
 3SG leave
 ‘He left.’

- (75) Kofi gblon na Marie be yè dzo.
kofi say PRP Mary COMPL LOG leave
‘Kofi told Marie that he/*she left.’
- (76) Kofi gblon na Marie be e dzo.
kofi say PRP Mary COMPL 3SG leave
‘Kofi told Marie that he/she left.’
- (77) M be m le cleva
ISG say 1SG COP clever
‘I say that I am clever.’

As in (72), the Ewe logophor *yè* only occurs under the scope of an attitude predicate (or, under the scope of some attitude introduced in the previous discourse as in (63)); when it occurs in roots in out-of-the-blue contexts, it gives rise to ungrammaticality (73); in such root contexts, a distinct third person singular form is used (74); in embedded contexts of attitude predicates, *yè* necessarily refers to the attitude holder/speaker (75); but, *e* could refer to either the speaker or the addressee (76); lastly, (77) shows that the first person singular form referring to the utterance speaker is *m* in Ewe.¹³

From the table in (71), we observe that in English, shiftedness of the indexicals is morphologically distinguished (*I* vs. *he*). Following the spirit of Distributed Morphology (Halle and Marantz (1993)), I assume that the English first person pronoun *I* is specified for unshiftedness (+actual). It could only appear in the terminal node bearing the features +actual and +speaker. However, the distinction between indexicality and non-indexicality is underspecified in English (*he* vs. *he*) in shifted contexts. Regarding Amharic, shiftedness is not marked morphologically in the speaker indexical. That is to say, *nāNN* is underspecified for (un)shiftedness (±actual), and it could occur in nodes representing either +actual +speaker or -actual +speaker. However, contrasted to English, Amharic makes an indexicality distinction: *nāNN* is for indexicals and *nāw* is for non-indexicals. Turning to Ewe, both distinctions (shiftedness and indexicality) are made morphologically; hence the contrast between *m* (+actual) and *yè* (-actual), and the contrast between *yè* (+speaker) and *e* (-speaker) are both observed. These observations are mostly built on Schlenker (1999, 2003b). Although what is captured in (71) is

very rough, and there are subtle but non-trivial differences in the interpretations and distributions of the pronouns/agreement occupying the correspondent cells in different languages, it represents the overall picture I have in mind regarding indexical shift.

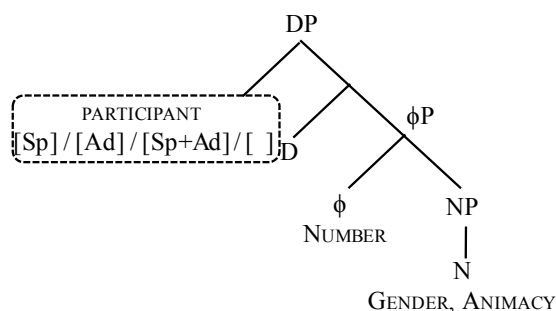
(71) tells us that, in English, shiftedness of the speaker feature is overtly expressed (*I* vs. *he*), while in Amharic, the distinction is non-overt (*nāNN* vs. *nāNN*). What makes the overt distinction in English less evident is the fact that the shifted speaker shares the same form with the non-indexical third person (*he* vs. *he*). Presumably for this reason, Schlenker (1999) sees a mismatch in the semantics and the morphological agreement of the indexically construed *he*: it is semantically first person, but morphosyntactically third person. Under Schlenker’s (1999) analysis, in the following sentence (78), the morphological features of *Smith* (3rd, singular) is inherited to *he* via syntactic agreement, but *he* is semantically read as the author of the embedded context (i.e. bound to the author coordinate of the embedded context); Schlenker holds that in such cases, the morphological features of *he* are not interpreted.

(78) Smith hopes that he will be elected. (*he* construed *de se*)

(Schlenker (1999: 98))

However, under my analysis (see (56) in section 4.3.4), the third person *he* in its indexical use internally represents the speaker. For convenience, (79) repeats (56)a, the proposed internal structure of indexical pronouns.

(79)



Simply put, the shifted speaker indexical *he* is inserted into a DP with structure (79) when the PARTICIPANT Sp is specified as -actual. When the Sp is +actual, *I* is inserted. Syntax distinguishes between + and -actual speaker. This much is also presupposed in Schlenker (1999, 2003b). The distinction is overtly expressed in English but covert in Amharic. In my system, the third person

singular features of *he* are not inherited from the matrix argument. It is pronounced in the third person singular form in its own right. It bears a set of features at least inclusive of +speaker, -actual, +male, and -plural. There is no semantic and morphological mismatch; the shifted indexicality is both properly interpreted and morphologically expressed in *he*. Crucially, I assume no syntactic relations between the matrix argument (say, *Smith* in (78)) and *he* that necessitate them to designate the same individual.

As such, there is indexical shifting in English, too; the interpretation of the PARTICIPANT projection shifts from the matrix context to the embedded context. We probably need a clearer notion of what shifts and what does not. In both English and Amharic, the context shifts from the matrix clause to the embedded clause in the relevant data. With this shift, the notions of speaker and addressee (as well as time and place) shift in both languages. This interpretative shift is reflected onto the syntactically represented PARTICIPANT node within DPs, again in both languages. However, the languages vary with respect to how indexical DPs are pronounced. In Amharic, the morphology remains constant across the interpretative shifts, while in English the morphology shifts with the interpretative shifts.

Now, in this setting, PRO falls under the middle column in (71) as indicated in (80). It realizes shifted indexicality with a zero-morphology.

(80)

	unshifted/actual speaker/addressee indexical	shifted speaker/addressee indexical	non- indexical
English (pronoun)	<i>I</i>	<i>he/ <u>PC PRO</u></i>	<i>he</i>

There is nothing new in this idea. Previous literature on indexical shifting has almost always mentioned similarities between shifted/shifty indexicals and PRO (e.g. Schlenker (1999, 2003b), Anand and Nevins (2004), Anand (2006)). However, there remains a question as to what accounts for the morphological differences if both *he* and PRO are shifted indexicals in English. Furthermore, recent literature has found that what I subsume under shifted indexicals such as the Ewe logophor *yè* is not always construed *de se* (Pearson (2013)), but PRO requires a *de se* reading. We need an account for this. Lastly, the current proposal assumes that PC complements

bear a force like imperative, distinct from the force of the matrix clause. However, in English, the verb takes the form of *to*-infinitive, say *to leave* in PC complements, but the form *leave* in root imperatives. In other words, in Japanese, unshifted imperatives and shifted imperatives occur in the same form, but English marks the difference as in (81). Why is this so?

(81)

	unshifted imperative	shifted imperative
English	<i>go</i>	<i>to go</i>
Japanese	<i>ik-e (go-Imp)</i>	<i>ik-e (go-Imp)</i>

4.5. Person Agreement as Complementizer Agreement: Previous Theories

The rest of this chapter continues to discuss the third question raised at the beginning of this chapter (repeated as (82)), and attempts at providing a solution to the last question (83).

(82) What are the syntactic mechanisms behind indexical shifting?

(83) How is person determined for indexicals?

The previous section saw that personal pronouns are not primitives. They have internal structures consisting of multiple categorical projections. The proposal based on the work of Harley and Ritter (2002) and Déchaine and Wiltschko (2002, 2009) was that indexical pronouns and non-indexical pronouns have distinct internal structures: the former are DPs with a discourse PARTICIPANT projection in their left periphery; the latter are ϕ Ps lacking this projection. Crucially, these pronouns in themselves do not bear person. DP pronouns with [Sp] or [Ad] are not necessarily first or second person; ϕ Ps are not necessarily third person either. I propose that DP pronouns receive their person via complementizer agreement. ϕ Ps get their person from their binder, or if they are not bound, their person will be the default third person.

I will introduce two previously proposed notions, *Logophoric Center* (Bianchi (2001, 2003)) and *A-matching* (Sigurðsson (2004a, 2004b, 2010)). The present study owes greatly to these notions in associating person with complementizer agreement. I will then proceed to presenting my own proposal (in section 4.6), in which precise syntactic implementations of complementizer agreement are developed. The previous arguments and mine share the core assumption that person agreement originates in the clausal left periphery. The novelty of the present proposal is in the DP internal structures like (79); the interactions between the internal

structure of the subject DP and the complementizer are crucial for my proposal in deriving person agreement. In other words, my proposal will incorporate (79) to the basic assumptions of the previous works on complementizer agreement.

4.5.1. Logophoric Center: Bianchi (2001, 2003)

Various recent studies propose that complement control, particularly PC, involves some sort of context shifting or a shift in world-individual pairs (Bianchi (2001, 2003), Anand and Nevins (2004), Anand (2006), Pearson (2013, 2016), Landau (2015)). How to capture the shift varies by study. The reason I focus on Bianchi (2001, 2003) is that she develops her arguments using syntactic devices on which I can most readily build my answer to question (82). It goes without saying, my proposal has benefited greatly from the other studies cited above and beyond.

Bianchi (2001, 2003) introduces the notion of Logophoric Center. She posits that every clause, whether root or embedded, is anchored to a deictic center representing a tuple of context defining coordinates including speaker, addressee, time, and space. She calls this deictic center *a Logophoric Center*. There are two types of Logophoric Center. One is the external Logophoric Center (eLC) and the other is the internal Logophoric Center (iLC). The eLC is anchored to the actual utterance context; the iLC is anchored to the speech event or the mental state introduced by the higher clause; or inferred from the previous discourse. The eLC represents the speaker, the addressee, the time, and the place of the actual utterance. The time of the eLC can be equated with the notion of the Reichenbachian S point. Contrastingly, the iLC represents the speaker, the addressee, the time, and the place of the reported or the inferred event. (84) summarizes the coordinates associated with the eLC and the iLC. I will indicate the eLC coordinates with the zero “⁰” marking and the iLC coordinates with “¹” to avoid confusion:

(84) a. External Logophoric Center (eLC):

eLC speaker (Sp^0): the speaker of the actual utterance

eLC addressee (Ad^0): the addressee of the actual utterance

eLC time ($Time^0$): the time of the actual utterance

eLC space ($Space^0$): the place of the actual utterance

b. Internal Logophoric Center (iLC):

iLC speaker (Sp¹): the speaker of the reported/inferred event

iLC addressee (Ad¹): the addressee of the reported/inferred event

iLC time (Time¹): the time of the reported/inferred event

iLC space (Space¹): the place of the reported/inferred event

Importantly, the speaker coordinate does not only represent the speaker of speech events; it is a cover term for a wide range of notions such as the author of thoughts, beliefs, hopes, and expectations, and the experiencer of various emotions and feelings. Bianchi also suggests that the addressee is not a requisite coordinate either for the eLC or the iLC. It is only represented when the relevant speech event has (an) intended addressee(s). This implies that the addressee coordinate is not represented in monologues or self-thoughts. This point is relevant to the distinctions I made for optatives, intentives, and promissives in Chapter 2 (see section 2.7.6 for a summary).

Bianchi proposes that the eLC and the iLC are syntactically represented in the clausal left periphery. She assumes that they are encoded in the Finite (Fin) head, the lowest head in Rizzi's (1997) split complementizer system. For Bianchi, finiteness implies encoding the speech point S, or the Reichenbachian S point, relative to which we interpret the time of event or situation expressed by finite sentences.¹⁴ In contrast, non-finiteness means a lack of the S point in the temporal structure. Simply put, for Bianchi, the eLC corresponds to the [+finite] specification on Fin, and the iLC to [-finite]. Also, the Fin head, located at the lowest position in the CP domain interacts with the inflectional structure, and most crucially, with person agreement.

According to Bianchi, the shift from eLC to iLC takes place mostly under the predicates of speech or mental events. Note that such predicates just overlap with the PC predicates (see Chapter 1, section 1.10). Bianchi maintains that PC complements project the iLC Fin, but EC complements do not. This is because EC predicates such as *manage* and *serve* do not describe a speech event or mental state. A similar view is presupposed in the present study.¹⁵

My understanding of Bianchi's (2001, 2003) eLC and iLC can be roughly schematized as follows. (86) is a skeletal representation of a PC sentence (85) uttered by Harry to Betty. I leave out the spatial coordinate from (86) for simplicity.

(85) Speech context: Harry is talking to Betty.

Harry says "Mary told John to leave."

(86) [Fin eLC $\langle \text{Sp}^0, \text{Ad}^0, \text{Time}^0 \rangle$ [TP Mary told John [Fin iLC $\langle \text{Sp}^1, \text{Ad}^1, \text{Time}^1 \rangle$ [TP PRO to leave]]]].

As in (86), the matrix Fin, Fin_{eLC} is anchored to the actual speech event. That is, the event of Harry talking to Betty. The Sp coordinate on Fin_{eLC}, Sp⁰ corresponds to Harry, Ad⁰ to Betty, and Time⁰ to the Speech point S. In contrast, the Fin in the embedded complement is Fin_{iLC}, anchored to the matrix event of Mary's telling John something. It follows that Sp¹ represents Mary, Ad¹ John, and Time¹ the time of the reported event (=Mary's telling).

One of the major concerns for Bianchi (2001, 2003) is the question why Nominative Case is licensed by [+finite] tense, as is often claimed (Chomsky (1981, 2000)). She asks: Why is the Nominative Case sensitive to finiteness? (Bianchi (2001: 2)). One could argue that the finite tense is *strong* or fully specified so that it can check Nominative Case on DP, contrasted with the *weaker* infinitive tense which checks Null Case (Chomsky and Lasnik (1993), Martin (2001)). One could also say only ϕ -complete finite T can check the uninterpretable Case feature on the subject DP (Chomsky (2000)). Nonetheless, the question remains as to why finite T is so fully specified or ϕ -complete as to license the Nominative Case on the subject DP. Bianchi's proposal for the eLC/iLC distinction is intended to answer this question.

She argues that although both number agreement and person agreement are often assumed to be responsible for Nominative Case licensing, only person agreement is the key factor in Nominative licensing. Some data are presented (e.g. impersonal sentences in languages like Central Catalan and Italian) which prove that when only number agreement is manifest, the postverbal DP cannot be unambiguously Nominative. Thus, it is actually Nominative licensing person agreement that is sensitive to finiteness. Finiteness is about being anchored to the speech point S. Without the S point, person cannot be interpreted. She views the S point not just as a time point, but as a speech event; person is definable only relative to the speech event S. The first

person designates the speaker in S, the second person the addressee in S, and the third person anyone who is neither the speaker nor the addressee in S, Bianchi argues. As such, only a finite clause with the S point may license person agreement, and person agreement licenses Nominative Case.¹⁶ That is why Nominative Case is sensitive to finiteness. For Bianchi, the eLC on the finite Fin head encodes the S point so that it licenses Nominative Case; but since the iLC on the non-finite Fin head does not encode S, it only licenses *anaphoric* person agreement. *Anaphoric* person agreement may license a Nominative subject DP in some languages (as in overt control, see Chapter 3 section 3.9), but does not allow a lexical DP (an R-expression). It only allows the participants of the iLC (i.e. the shifted speaker and/or the addressee) to be the value for the subject DP. I will later slightly revise Bianchi's view on how the eLC and the iLC correspond to finiteness and how they license person, but let us move on with her argument for now.

Bianchi's suggestion is that Fin_{eLC} licenses person agreement, which in turn licenses Nominative Case. Fin_{iLC} licenses anaphoric person agreement, which does not always license Nominative Case. Note that Fin_{iLC} does not prohibit Nominative Case. It in fact allows overt control in some languages where the Nominative subject appears (see section 3.9). It is just that anaphoric person agreement permitted by Fin_{iLC} restricts the semantic values of the subject to be the participants of the iLC. Fin_{eLC} contrasts with Fin_{iLC} in that it allows a lexical subject DP disjoint in reference from the participants of the represented eLC.

Consider some examples, other than PC complements, that Bianchi subsumes under the iLC clauses. The complements of the sentences below are iLC clauses; they contain shifty or shifted indexicals:

(87) Donno SO (Culy (1994: 1070), cited in Bianchi (2001: 12))

Wo inyeme yogo bojem giaa be.
 3sg log tomorrow go-prog-1sg said aux
 'S/he_i said the s/he_i is leaving tomorrow.'

(88) Amharic (Kuno (1987: 145), cited in Bianchi (2001: 12))

yohannls rasum habtam n' ñ al'
 John himself rich am said
 'John_i said he_i was rich.'

In the above examples, the subject occurring in the embedded clause refers to the *internal* speaker of the iLC, and appears in first person. Bianchi also draws attention to logophoric effects of non-obligatory control or long-distance control complements, whose subject is controlled by the iLC speaker/addressee.

- (89) John_i even shaved for the interview. [PRO_i Making himself presentable] was essential to the success of the project. (adapted from Bianchi (2001: 18, originally mentioned in Hornstein (1999)).
- (90) a. John said to Mary_i that it would be easy [PRO_i to prepare herself for the exam].
- b. * John said about Mary that it would be easy [to prepare herself for the exam]. (adapted from Bianchi (2001: 18, originally mentioned in Kuno (1987: 134-135)).

In (89), the subject clause in the second sentence is an iLC clause with the internal speaker, John; the subject of the subject clause refers to John. This example reveals that the internal speaker of the iLC does not have to be introduced by the immediately higher clause. It may be inferred from the preceding sentence. “[T]he internal logophoric centre is contextually licensed on a semantic/pragmatic basis” (Bianchi (2001: 18)). (90) illustrates an intriguing contrast. In (90)a, Mary is the addressee in the reported speech event, and thus constitutes the internal addressee of the complement. In (90)b, Mary is not the addressee of the reported speech, and hence is not represented as the iLC participant. As a result, Mary only controls PRO in (90)a but not in (90)b. Importantly, the iLC represents an anaphoric *event*, not an anaphoric *Agr* as in Borer (1989). The participants of the event are determined on semantic or pragmatic grounds. Thus, non-obligatory control or long-distance control where the alleged controller is not overtly expressed in the immediately higher clause is possible. Bianchi does not very much stress the following point, but her argument implies that, in obligatory control too, the participants of the iLC are determined contextually on a semantic or pragmatic basis. It is just that the iLC in the case of obligatory control is anchored to the matrix event so that the event participants in most cases *happen to* overlap with the references of the matrix arguments. I am just intending PC OC (obligatory

control) here, not EC OC. This view accounts for typical locality of PC, and also *atypical non-locality* of PC where implicit control is allowed.

Although my proposal will follow Bianchi's *Logophoric Center* approach, she does not provide an account for how the subjects of the iLC clauses appear in the form they do. I propose that personal pronouns including PRO receive their person feature via complementizer agreement, and this in turn determines their form. For more ideas on such a view, let us now turn to another important notion, Λ -matching.

4.5.2. Λ -matching: Sigurðsson (2004a, 2004b, 2010)

Syntactic literature often presupposes nominal phrases originating with a person feature, first, second, or third. Verbal agreement is typically taken as a process in which the person feature inherent in a nominal phrase is shared with a clausal verbal spine. The opposite views have also been proposed (Borer (1989)), in which the verbal functional head is assumed to originate with Agr and this verbal Agr is transmitted to a nominal phrase. My proposal takes neither approach. I argue that person agreement arises as a consequence of a joint work of both a nominal phrase and a clausal verbal functional category; this idea comes from Sigurðsson (2004a, 2004b, 2010). More concretely, I propose that the Fin head enters into an agreement relation with the subject nominal, and only via agreement do they get to bear a person feature.

Complementizer agreement is observed in various languages, and it is often considered to be an instantiation of feature dependency between the TP and the CP domains (Zwart (1993), Chomsky (2008)). Chomsky (2008) explicitly argues that the ϕ -features of T are inherited from C; T gets its ϕ -features from C only after C is merged. He seems to have based his argument on the complementizer agreement overtly manifested in languages such as West Flemish discussed in Haegeman (1990). Nevertheless, it seems that not all ϕ -features come from C. It has also been suggested in various studies including Shlonsky (1989) and Ritter (1995) that person agreement and number agreement arise from different heads: number agreement derives from a head in the vicinity of T, while person agreement from a higher head closer to or in the CP domain. The present proposal is in line with this type of thought. I assume that only person

agreement results via the agreement relation between C and the nominal subject. In particular, I will suggest that it arises from agreement between Fin and the nominal subject.

Here, I provide a brief review on Sigurðsson's (2004a, 2004b, 2010) proposal on an agreement operation, Λ -matching. Sigurðsson (2004b) maintains that syntactic computations do not operate with uninterpretable features, and that they are not deleted under Agree. Instead, he argues that the computation "operates with (interpretable but) uninterpreted features that get interpreted under matching in the course of derivation" (Sigurðsson (2004b: 226)). To illustrate this, he cites the well-known Reichenbachian understanding of tense. Consider the sentence below:

(91) John had eaten breakfast (before nine). (Sigurðsson (2004b: 226))

The past perfect tense in (91) is standardly analyzed as event time > reference time > speech time: the event time (eating breakfast) is before the reference time (grammatical tense, past), and the reference time is before the speech time (the time someone uttered this sentence). This example tells us that the event time is interpreted relative to the grammatical tense, and the grammatical tense is analyzed relative to the speech time.

For Sigurðsson, ϕ -features, particularly person features, have a parallel relationship to tense with respect to the event participants and the speech participants. Using his terminology, θ -features (event participant features) are valued in relation to ϕ -features, which are valued relative to Λ -features (speech participant features). According to Sigurðsson, the inherent speech participants are the active and the passive participants of the speech, which he dubs *logophoric agent* and *logophoric patient* respectively. He refers to these logophoric features as *A-features*. The term *A-features* is employed to contrast it with the notions of θ -features and ϕ -features; it has nothing to do with the notations of lambda calculus in which the small lambda λ is preferred (see Sigurðsson (2004b: 227, fn. 17)). Now, observe (92) which effectively illustrates his notions of Λ -features.

(92) a. I love you.

1SG= the speaker = LOGOPHORIC AGENT (and also the ‘loving one’)

2SG= the addressee = LOGOPHORIC PATIENT (and also the ‘loved one’)

b. John said to me: “I love you.”

1SG= John = LOGOPHORIC AGENT (and also the ‘loving one’)

2SG= the speaker = LOGOPHORIC PATIENT (and also the ‘loved one’)

(Sigurðsson (2004b: 227))

His notions of logophoric agent and logophoric patient converge with the notions of the speaker and the addressee in my proposal and of those in Bianchi’s logophoric center. He assumes that a nominal argument does not have inherently valued ϕ -features (i.e. first, second, and third person); they only have unvalued ϕ -features which are valued only after agreeing with clausal Λ -features. In his view, “arguments are sets of interrelated event features, grammatical features and speech features” (Sigurðsson (2004b: 228)). A lexical item or agreement morphology, which matches these interrelated features, is inserted only after ϕ -features have been interpreted relative to Λ -features. Late insertion in line with Halle and Marantz (1993) and Marantz (1995) is presupposed. My proposal also presupposes late insertion.

Based on these insights, Sigurðsson (2010: 164) proposes that the universal clausal structure minimally looks as follows:

(93) [_{CP} Force...CL_n... Λ_A ... Λ_P ...Fin...[_{TP} P_n...Nr...M...T...[_{VP} v... (NP)...]]]

He basically pursues the split C approach posited by Rizzi (1997), but he abstracts away from Rizzi’s Focus and Topic elements and represents them as CL_n, *Context-Linkers*. Fin, at the lowest position of the CP domain, further splits into *Speech Time* (S_T) and *Speech Location* (S_L), which roughly represent *now* and *here* of the speech event. Most relevant for the discussion here are Λ_A , logophoric agent, and Λ_P , logophoric patient, which are silent but syntactically active features in the CP domain. In the TP domain are P_n, person, and Nr, number, which he assumes to represent independent heads. M stands for mood, and there is T standing for tense.

He also proposes the *head unification* hypothesis, which assumes that adjacent heads may bundle up to function as a single head if they are not independently active. This means that, for example, Λ_A and Λ_P may bundle up to act as a single head, Λ , and plausibly, Λ and Fin may

bundle up to act as a single head, Λ -Fin. Such a way of thinking is reminiscent of the argument by Rizzi (1997) in which Force and Finite elements are assumed to be expressed by a single lexical item *that* or remain null. I hold that a single head, namely Fin, bears all features related to Λ_A (logophoric agent=speaker), Λ_P (logophoric patient=addressee), S_T (speech time=now), and S_L (speech location=here) just as in Bianchi (2001, 2003). Nonetheless, such assumption is made for reasons of theoretical simplicity. They may in fact involve multiple heads represented in the vicinity of Fin, but they are bundled up to act as a single head.

In Sigurðsson's view, an argument matches the Pn head, and this matching values the argument as +Pn (person) or -Pn (non-person). Under this assumption, [\pm human] distinctions are made syntactically visible. Only +Pn arguments (i.e. [+human] arguments) then match the Λ -features for more specifications of person values. First, second, and third person specifications are computed through the valuation process, Λ -matching, as shown in (94).

- (94) a. +Pn \rightarrow + Λ_A , - Λ_P = 1P by computation
 b. +Pn \rightarrow - Λ_A , + Λ_P = 2P by computation
 c. +Pn \rightarrow - Λ_A , - Λ_P = 3P by computation
 d. -Pn: 3P by default

(Sigurðsson (2010: 166))

In this system, abstracting away from T (tense), M (mood), and Nr (number), a nominal argument within ν P matches with Pn. If an argument positively matches with Pn and is valued as +Pn ([+human]), it moves to Pn (to the right of the Pn head in Sigurðsson's framework, but one could translate this position to be Spec Pn if X'bar projections are preferred). +Pn arguments, now located at the edge of TP, match with Λ_A and Λ_P in the left periphery. If the reference of the argument is identical with Λ_A , it will be valued as + Λ_A ; if not identical - Λ_A . Likewise, if the reference of the argument is identical with Λ_P , it results in positive matching + Λ_P and non-identity results in negative matching - Λ_P . Consequently, arguments that have gone through Λ -matching will bear $\pm\Lambda_A$ and $\pm\Lambda_P$, according to which first (1P), second (2P), and third person (3P) features are specified as in (94). Under this framework, there are at least four types of person. First person bearing + Λ_A , - Λ_P , second person - Λ_A , + Λ_P , and third person - Λ_A , - Λ_P by Λ -matching, and lastly third person bearing -Pn without Λ -matching (I will mention the missing

combination $+Λ_A, +Λ_P$ below; see (96)). The last type corresponds to [-human] nominal arguments.

Importantly, $Λ$ -features may shift from clause to clause:

(95) **He** said to **me**: **I** love **you**.

[CP... { $Λ_A$ }_i... { $Λ_P$ }_k...[IP...he_j...me_i...[CP... { $Λ_A$ }_j... { $Λ_P$ }_i...[IP...I_j...you_i...

(Sigurðsson (2004a: 249))

For Sigurðsson, direct speech quotations such as (95) are not “extra-syntactic phenomena” (Sigurðsson (2004b: 239)), and are treated as involving syntactic embedding. Under this view, we see that the $Λ$ -features of *the embedded clause* (the quotation) in (95) are not identical with those of the matrix clause. Instead, they are identical with the reference of the matrix arguments. The embedded $Λ$ -features have shifted values, under which the individual referred to in third person in the matrix occurs in the first person in the “embedded” clause. As such, $Λ$ -features in the clause periphery are syntactically active in determining the person of an argument.

Sigurðsson’s $Λ$ -matching system captures my basic intuitions about how nominal arguments come to bear first, second, and third person features; but it has some problems. The first problem is that it is missing out one logically possible combination of $±Λ_A$ and $±Λ_P$ in the formalization of $Λ$ -matching in (94). (94) does not value person for the combination $+Λ_A +Λ_P$, which corresponds to first person inclusive. Contrasted to this combination, $+Λ_A -Λ_P$ should correspond to first person exclusive. Although the English first person plural *we* does not morphologically distinguish between first inclusive and exclusive, I assume that the distinction bears significance in syntactic processes and interpretation. This problem is easily solvable by revising $Λ$ -matching as (96).

- (96) a. $+P_n \rightarrow +Λ_A, -Λ_P = 1P$ exclusive by computation
 b. $+P_n \rightarrow +Λ_A, +Λ_P = 1P$ inclusive by computation
 c. $+P_n \rightarrow -Λ_A, +Λ_P = 2P$ by computation
 d. $+P_n \rightarrow -Λ_A, -Λ_P = 3P$ by computation
 e. $-P_n$: 3P by default

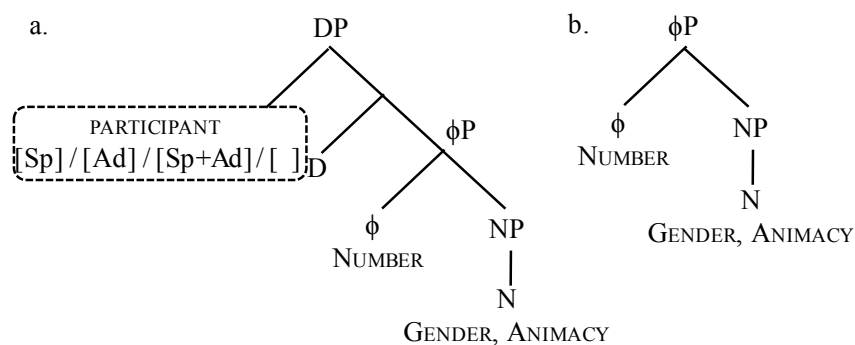
Second, Sigurðsson’s $Λ$ -matching system is not clear on how to apply it to plural arguments. This will be directly addressed in the next section; in fact, incorporation of the DP

internal structure discussed in the first half of this chapter directly solves this issue. Third, Sigurðsson's system is not applicable to indirect or reported contexts. For instance, in indirect contexts, the combination $+\Lambda_A, -\Lambda_P$ does not always yield first person agreement. This problem will also be dealt with in the next section where I will combine the notion of Λ -matching with Bianchi's Logophoric Center. I will propose that the tense feature (uT) on DPs plays an important role in determining person. Lastly, Λ -matching does not account for how the person of the object argument, which apparently sits far from the left periphery, is determined. I have to leave this issue to future research. Nonetheless, it is sufficient for the purpose of this section to show that even basic person features of nominals may require syntactic presence of speech act (thought) participants for defining themselves.

4.6. Person Agreement as Complementizer Agreement: Proposal

Section 4.3 observed that personal pronouns are not primitives. They consist of multiple functional projections; I built on Harley and Ritter (2002) and Déchaine and Wiltschko's studies (2002, 2009) and proposed that indexical pronouns bear the internal structure that looks like (97)a, repeating (56)a, and non-indexical pronouns bear a structure like (97)b, repeating (56)b.

(97)



Recall that I also assumed that DPs of all persons, first, second, or third, may be indexicals or non-indexicals. The structural divide between (97)a and b cuts across person. I held that the indexical structure (97)a in itself does not bear person. Indexical pronouns with Sp do not necessarily bear first person. The Sp specification just indicates that the DP designates (at least partially) the speaker of the context. If it appears under the shifted context, the DP may bear third person form such as *he* in English. In the following discussions, I will provide an account for

how the person of the indexical pronouns is determined via the agreement between the Fin head and the indexical pronoun. More radically put, I assume that syntactic agreement operations proceed without person features specified as first, second, and third. Syntax derives certain combinations of valued participant features as in Λ -matching; and corresponding pronominal forms, overt or null, are inserted in PF. For instance, depending on the feature values, the first person overt pronoun *I* or *we* is inserted, but some other values may be realized by a null morphology at least in English; these morphological realizations are subject to cross-linguistic variation.

My proposal in effect incorporates my DP internal analysis on indexical pronouns to the frameworks posited in Bianchi's Logophoric Center approach and Sigurðsson's Λ -matching system. For this purpose, I will employ a version of syntactic operation *Agree* (Chomsky (2000, 2001)), namely the feature sharing version proposed by Pesetsky and Torrego (2007). In this version of *Agree*, the uninterpretable tense feature, or uT , on the subject DP plays an active role; uT on the subject also plays a crucial role in my proposal.

I do not much discuss how person is determined for ϕP non-indexical pronouns; I just assume that they receive their person from their binders. Detailed accounts on ϕP pronouns are left to further study.

4.6.1. Agreement in the Unshifted Root Environment

4.6.1.1. Basic Framework

I first consider the *unshifted* root environments where control is *not* involved. I consider how overt indexical DP pronouns such as the English *I*, *we*, and *you* bear the form they do, distinct from one another and distinct from the third person overt pronouns such as *he*, *she*, and *they*. I assume that indexical DP pronouns ((97)a) correspond to +Pn ([+human]) nominals in Sigurðsson's Λ -matching system. In contrast, those ϕP pronouns lacking the PARTICIPANT node ((97)b) correspond to -Pn nominals and so they do not go through Λ -matching, or agreement; they are third person by default (see (96)e), or may bear first/second person via binding. As to the indexical DP pronouns, I postulate that the PARTICIPANT Spec DP is the target of agreement, which is in effect C level person agreement (as in Hasegawa (2009)).

I start by laying out the basic framework without the Time or the Space coordinate. Recall that in Sigurðsson's system, there are discourse participant representations in the left periphery of the clause structure. They are represented as Λ_A (Logophoric Agent, roughly the speaker/author) and Λ_P (Logophoric Patient, roughly the addressee). See (98):

(98) [CP...{ Λ_A }...{ Λ_P }...[IP... (Based on Sigurðsson (2004a: 248))

These are parallel representations of Bianchi's speaker and addressee coordinates in her logophoric centers. I could rewrite (98) as (99) under Bianchi's eLC.

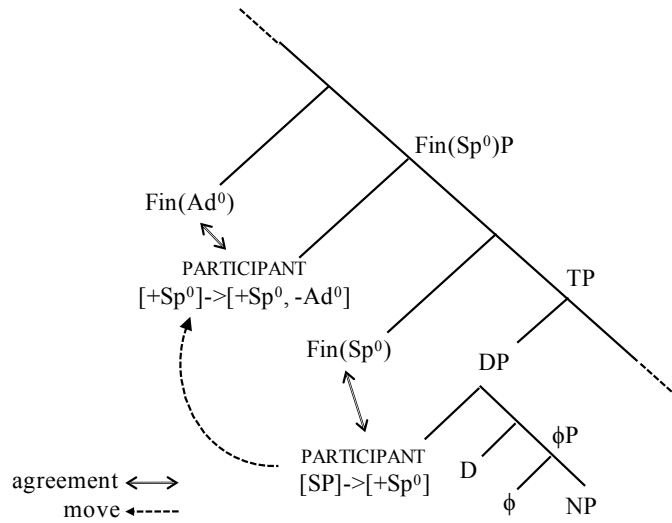
(99) [Fin eLC $\langle_{Sp^0, Ad^0} \rangle$ [TP ...

In root finite clauses, the subject at Spec TP enters an agreement relation with Fin_{eLC}. I assume that PARTICIPANT at Spec DP in indexical pronouns matches with the Sp^0 coordinate and the Ad^0 coordinate on Fin_{eLC}; as a result, they receive their person via the computation (96). (96) can be rewritten as (100) under the current Sp/Ad terminology. +D in (100) indicates having a DP indexical structure ((97)a), -D, a ϕ P non-indexical structure ((97)b). Note the revision on (100)e; I do not assume that all -D pronouns (ϕ P pronouns) will be third person by default. They may be first/second or third person via binding.

- (100) a. +D \rightarrow + Sp^0 , - Ad^0 = 1P exclusive by computation
 b. +D \rightarrow + Sp^0 , + Ad^0 = 1P inclusive by computation
 c. +D \rightarrow - Sp^0 , + Ad^0 = 2P by computation
 d. +D \rightarrow - Sp^0 , - Ad^0 = 3P by computation
 e. -D: 3P by default or 1P/2P/3P via binding

Focusing on indexical DP pronouns (with the structure as in (97)a), PARTICIPANT will be valued as [+ Sp^0] only if it bears the feature Sp; otherwise it will be valued [- Sp^0]. Similarly, PARTICIPANT will be valued [+ Ad^0] only if it bears the feature Ad; otherwise it will result in negative matching, [- Ad^0]. As a result, PARTICIPANT (Spec DP) will bear [$\pm Sp^0$] and [$\pm Ad^0$] values. For theoretical simplicity, I have been postulating that Fin_{eLC} represents both Sp^0 and Ad^0 on a single head (Fin), but the valuation process may involve two separate heads, Fin(Sp^0) and Fin(Ad^0) corresponding to Sigurðsson's Λ_A and Λ_P respectively. Fin(Sp^0)-PARTICIPANT agreement under the framework of Λ -matching is schematized in (101):

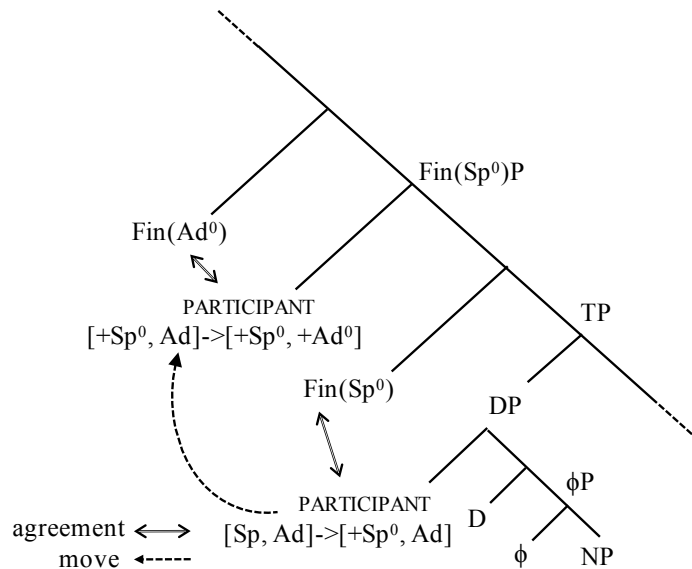
(101)



The PARTICIPANT node within the subject DP, first agrees with $\text{Fin}(\text{Sp}^0)$. For instance, if the PARTICIPANT node represents a feature Sp as in (101), it is valued $[\text{+Sp}^0]$ via agreement with $\text{Fin}(\text{Sp}^0)$. It then moves up to Spec $\text{Fin}(\text{Sp}^0)$, and agrees with $\text{Fin}(\text{Ad}^0)$. Since it lacks feature Ad, it will be valued $[-\text{Ad}^0]$. As a result, PARTICIPANT will be valued $[\text{+Sp}^0, -\text{Ad}^0]$. In (101), the bracketed feature on the left side of the arrow “->” indicates the value before agreement, and on the right side is the value after agreement.

(102) represents a rather complicated case for PARTICIPANT with Sp and Ad.

(102)



First, PARTICIPANT agrees with $\text{Fin}(\text{Sp}^0)$, and gets valued as $[\text{+Sp}^0]$. At this point, the Ad feature remains unvalued. It then moves up to $\text{Spec Fin}(\text{Sp}^0)$ and receives a $[\text{+Ad}^0]$ value for its Ad feature. This results in $[\text{+Sp}^0, \text{+Ad}^0]$ values, and both Sp and Ad features on PARTICIPANT are now valued.

According to these values, the entire DP will bear first, second, or third person following the computation rules indicated in (100). The value set $[\text{+Sp}^0, \text{-Ad}^0]$ results in first person exclusive, $[\text{+Sp}^0, \text{+Ad}^0]$ in first person inclusive, and $[\text{-Sp}^0, \text{+Ad}^0]$ in second person. The demonstrative *he* as in (18) falls under (100)d.

Depending on the number feature specified on ϕ , the pronoun is pronounced as first person singular *I*, or first person plural *we* if the value set ends up in $[\text{+Sp}^0, \text{-Ad}^0]$. Second person *you* may appear in English whether the ϕ is specified as singular or plural. When the values are $[\text{+Sp}^0, \text{+Ad}^0]$, the number on ϕ must be plural, or else it will face a presuppositional clash; thus, first person inclusive will always be plural, pronounced as *we* in English. The third person, *he/she* or *they*, occurs when it lacks the PARTICIPANT projection as in (97)b (bound third person) or the participant node is empty, [], as in (97)a (demonstrative third person), and the number on ϕ is singular or plural respectively. Note that indexical DP pronouns have a gender feature too (see (97)a); the gender (masculine/feminine) is expressed overtly as *he* or *she* in English when they end up in third person singular after agreement. However, this does not mean that the first/second person and third person plural pronouns lack a gender feature; they have a covert gender feature.

One problematic issue in the proposed system is why Fin agrees with the Spec DP element instead of agreeing with its maximal projection. In fact, for the unshifted cases, no interpretative difference arises from Fin agreeing with the entire DP or its Spec element. Also, syntactically, the Spec element is as local to Fin as the whole DP. I employ Van Koppen's (2012) formalization on this argument, but a similar assumption is also posited in Pesetsky and Torrego (2001). By (103) and (104), taken from Van Koppen (2012: 152), a maximal projection and its spec element are *equally local* to a c-commanding agreeing Probe.

(103) Equally local

Y and Z are equally local to X iff,

- (i) X c-commands both Y and Z
- (ii) the set of nodes that c-command Y is equal to the set of nodes that c-command Z

(104) More local

Y is more local to X than Z iff,

- (i) X c-commands both Y and Z
- (ii) the set of nodes that c-command Y is a proper subset of the set of nodes that c-command Z

Thus, we have a free choice as to whether Fin agrees with the Spec or the maximal projection. In fact, it could be the maximal DP projection that goes into an agreement relation with Fin. This does not impinge on my system for the unshifted (or typically finite) root cases. However, it bears significance in shifted cases for PC; in PC, it is important that only the PARTICIPANT node moves up; as discussed in the next chapter, this accounts for the controller-PRO subset relation in PC.

I need to mention here that my proposal for the Fin-Spec DP agreement builds on Van Koppen (2012). She focuses on *double agreement* in Hellendoorn Dutch where C appears to agree with a different set of features from T. She accounts for this by proposing that there is a gap in C and T agreement targets: C agrees with the Spec element internal to the subject while T agrees with the entire subject. My framework for PC is greatly inspired by this analysis.

4.6.1.2. Interactions with the Time Coordinate: Feature Sharing and Significance of *uT*

Here, I will bring the Time coordinate back into the picture. Fin also represents the Time coordinate, which also plays an important role in agreement processes. To incorporate this coordinate into Fin agreement, we need to consider another agreement that has taken place beforehand. That is the T-subject agreement. The following discussion may involve some complexity, but what I intend to show is that the subject DP, that has agreed with T, bears a tense property received from T; when the DP agrees with Fin, this tense property is valued with respect

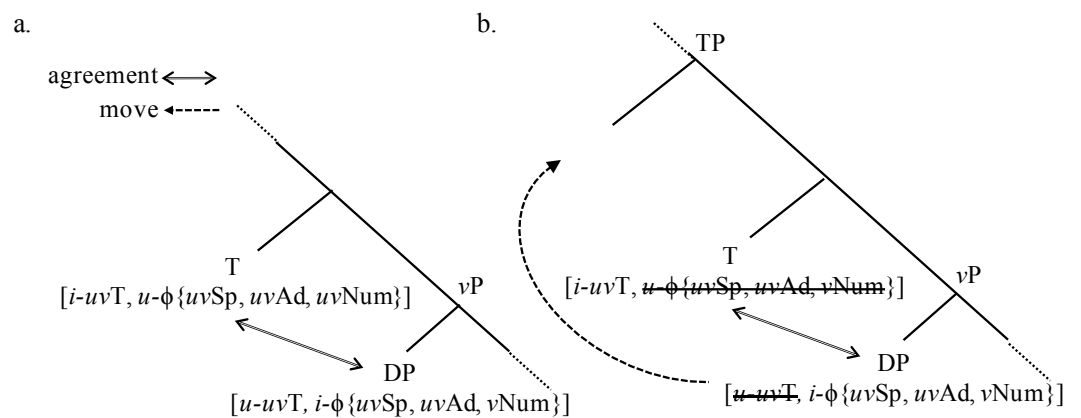
to the S point or S_T (speech time= now) of the speech event. The view that DPs bear a tense property, or the Time feature as I propose shortly, may seem somewhat strange and not readily acceptable; the following discussion is intended to clarify my point in this regard.¹⁷

I adopt the minimalist feature checking approach to agreement (Chomsky (2000, 2001)), in which the operation *Agree* is conceived of as an agreement relation between a probe and a goal. When a probe has an uninterpretable feature that needs to be deleted or *checked*, it searches its c-commanding domain for a goal which has a corresponding interpretable feature. More precisely, I will follow the revised version of this operation, proposed by Pesetsky and Torrego (2007), where *Agree* is said to involve feature sharing. The core contention of this approach is that even deleted/checked features live through their cycle or phase to check another uninterpretable instance of the relevant feature. Also, unlike Chomsky (2000, 2001), the feature sharing approach does not assume that uninterpretable features are always unvalued; both uninterpretable valued features and interpretable unvalued features are presupposed. In sum, features may be:

- (105) a. interpretable and valued
- b. interpretable and *unvalued*
- c. *uninterpretable* and valued
- d. *uninterpretable* and *unvalued*

Under this setting, T-subject agreement and the following Fin-subject agreement proceed in the following manner:

(106)



The subject DP is at Spec vP as in (106)a. A maximal DP projection is assumed here for simplicity. It has interpretable ϕ -features (i - ϕ) specified as Sp and Ad which are unvalued (uv), and the Number feature which is valued (v). These Sp and Ad features are reflections of their Spec DP PARTICIPANT features; the Number feature comes from its internal ϕ projection. My original motivation in assuming Sp/Ad to be generated *unvalued* on DP but its Number *pre-valued* (as in Matsuda (2017b)) was that while the former is a derivative of syntax and varies across contexts, the Number on N seems lexically valued, and not a syntactic derivative. As mentioned in Pesetsky and Torrego (2007: 263), there are *pluralia tantum* nouns such as *scissors* in English which are lexically specified as plural. In contrast, there are no nouns, as far as I know, that are specified as first or second person.

However, this assumption may be incorrect. For some DPs, Number appears to be left unvalued, or at least uninterpreted. Observe (107), pointed out to me by Idan Landau (p.c.).

(107) Mary asked those in charge to make themselves/*himself visible.

Those in (107) appears in the plural form, but it does not require a plural interpretation. The speaker of (107) may have uttered it without the knowledge of the number of individuals who are in charge; there might have been a single individual or multiple individuals in charge. Thus, *those* allows a singular or plural interpretation. Crucially, PC PRO also seems to fall under the case where its Number is left uninterpreted (see section 5.8, Chapter 5). The interactions between tense, finiteness and the subject seem to be responsible for the valuation of Number. For instance, the irrealis T or the non-finite Fin of the PC complement may lack the Number feature, which may lead to T-Spec DP or Fin-Spec DP agreement instead of T or Fin agreeing with the entire DP projection. However, it is not yet clear to me how they interact to bring about the valuation of Number. For this reason, I will proceed with my original assumption that Number on the subject DP is pre-valued although it is highly dubious.¹⁸

I also presuppose that the subject DP bears an uninterpretable T feature (u -T), which is the source of Nominative assignment, as assumed in Pesetsky and Torrego (2001, 2007). The T feature on the subject plays a key role in accounting for subject/non-subject asymmetries in *that*-trace effect, *that*-omission, and T-to-C movement (Pesetsky and Torrego (2001, 2007)). I even take it further and speculate that the u -T on the subject may not be deleted after spell out,

since the T feature contributes to the interpretation of the subject. Very roughly, the English *I* means the speaker here now, *you* (singular) the addressee here now, and *he/she* any individual who is neither the speaker nor the addressee here now.

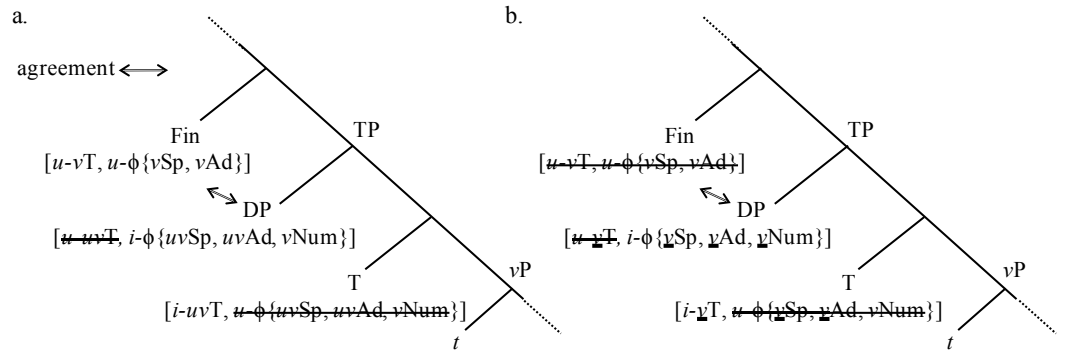
It also has important implications in that the subject may even do the job of quantifying over contexts; in addition to the speaker, addressee, and T features, it may also bear the location or world ‘features’ so the context may be fully defined by the subject; but I need to leave these issues to further study.

Turning to T, it merges the structure with an interpretable T feature (*i*-T) and uninterpretable ϕ features (*u*- ϕ), in line with the well-accepted notion of *Agree*. Via T-Subject agreement, the *u*- ϕ on T gets deleted, and in turn, *i*-T on T deletes the *u*-T on the subject. After agreement, the subject moves up to Spec TP by EPP. This movement is viewed as a reflex to agreement.

A crucial difference between the proposed system and Pesetsky and Torrego (2007) on the one hand, and other more standard views on the other is whether to assume *i*-T to be pre-valued on T. I maintain in line with Pesetsky and Torrego that it is not, although the reason for this assumption is somewhat different from theirs. I assume that tense properties such as [present] and [past] need an anchoring point to be properly interpreted. This is the theoretical framework pursued both in Bianchi (2001, 2003) and Sigurðsson (2004ab, 2010). For example, in root environments, we need an S point or S_T (speech time=now) to interpret, say [past] to be a point in time preceding this S point.¹⁹ In my system, the S point is represented on Fin. As such, unless T has some interactions with Fin, its tense feature cannot be valued. Such conjecture on tense valuation extends to unvalued person features Sp and Ad on the subject DP. They require anchoring in person to be properly interpreted, and those anchors reside in Fin.

Thus, the *u*-T on DP has a specific purpose beyond Nominative Case assignment. DP carries *u*-T to Spec TP to be valued in Fin-subject agreement. When *u*-T on DP is valued, the same instance of T carried on T (the *i*-*uv*T in (108)a) instantly gets a value. The subject in a way serves as a bridge between T and Fin. In the same agreement, unvalued Sp/Ad features on the subject (*i*- ϕ {*uv*Sp, *uv*Ad} in (108)a) are also valued, as illustrated in (108)b.

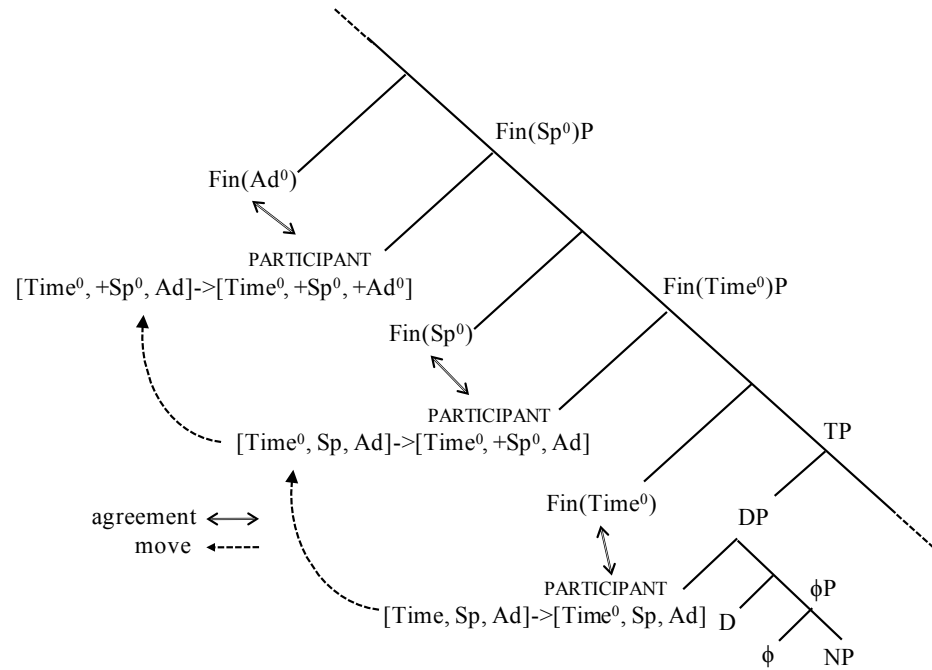
(108)



The Sp, Ad and Time coordinates we have been assuming are captured as valued features on Fin. These features on Fin are uninterpretable but valued. A T feature is interpretable on T and ϕ -features are interpretable on DP, but none of them are interpretable on Fin. However, they are valued on Fin as anchoring points of the speech event. Note that after Fin-DP agreement, as shown in (108)a, all uninterpretable features on Fin are deleted. In addition, shown by the double underlines, all unvalued features (uv) on DP and T in (108)a are turned into valued features (v) in (108)b. Since the features on DP had already been linked with the corresponding features on T in the previous agreement, once those on DP get valued, those on T also get valued. After Fin-subject agreement, all features relevant to the present discussion are valued and all uninterpretable features are deleted. The subject at Spec TP has no need to move to Spec Fin, at least for the purpose of feature deletion and valuation. I assume that Fin, the lowest head in the left periphery, contributes to A movements in the manner illustrated, but it does not necessitate A-bar movements.

Let us now go back to where we left off for the detailed accounts on agreement (about three paragraphs below (102)). I will illustrate how the Time coordinate on Fin, captured as the $\text{Fin}(\text{Time}^0)$ head, agrees with the subject DP at Spec TP. The subject already bears a Time feature from the previous T-subject agreement. It corresponds to $u-uvT$ on DP in (108)a. In this agreement, the Time feature on DP gets the superscript “ 0 ” from $\text{Fin}(\text{Time}^0)$ via agreement, representing anchoring to the actual speech time. This step is shown in (109).

(109)



The T valuation assumed in (109) amounts to locating of the S point. The S point may itself represent a certain time interval, but this does not concern us greatly for the issue at hand. If the tense on T is specified as [past], T valuation in this agreement allows us to interpret T as a point in time preceding the speech point *now*. Note that I temporarily placed the Time feature at Spec DP by an assumption that all deictic features would occupy this position; this decision, however, demands further consideration.

Incorporation of the Time coordinate into the picture does not change the morphological realizations of the subject DP, indicated in (100). Consider (110).

- (110) a. +D -> Time⁰, +Sp⁰, -Ad⁰ = 1P exclusive by computation: *we, I*
 b. +D -> Time⁰, +Sp⁰, +Ad⁰ = 1P inclusive by computation: *we*
 c. +D -> Time⁰, -Sp⁰, +Ad⁰ = 2P by computation: *you*
 d. +D -> Time⁰, -Sp⁰, -Ad⁰ = 3P by computation: *he, she, they*
 e. -D: 3P by default or 1P/2P/3P via binding

However, it bears significance in accounting for the nullness of PRO in shifted contexts.

4.6.2. Agreement in the Shifted Environment: PRO

Next, I will consider shifted Fin_{iLC} contexts as in (111), relevant for PC. They mostly occur in the embedded context of attitude verbs:

(111) $[\text{Fin eLC} \langle \text{Sp}^0, \text{Ad}^0, \text{Time}^0 \rangle [\text{TP} \dots [\text{Fin iLC} \langle \text{Sp}^1, \text{Ad}^1, \text{Time}^1 \rangle [\text{TP} \dots$

Recall the PC construction that exemplifies embedded Fin_{iLC} contexts in (86), repeated here as

(112):

(112) $[\text{Fin eLC} \langle \text{Sp}^0, \text{Ad}^0, \text{Time}^0 \rangle [\text{TP} \text{ Mary told John } [\text{Fin iLC} \langle \text{Sp}^1, \text{Ad}^1, \text{Time}^1 \rangle [\text{TP} \text{ PRO to leave}]]]]]$.

In (112), Sp^1 designates Mary and Ad^1 John. A Fin-PRO agreement takes place, almost in the same way as in the root Fin_{eLC} agreement (as in (109)). To be more precise, before the agreement, the phonological form of any subject at Spec TP has not been determined. Thus, under the present framework, it is not correct to indicate the Spec TP element in (112) as PRO; I indicate it as PRO for ease of understanding. In any event, the subject (PRO) will bear various combinations of feature values shown in (113)a-c by Fin agreement:

- (113) a. $+D \rightarrow \text{Time}^1, +\text{Sp}^1, -\text{Ad}^1 = 3\text{P}$ by computation: PRO (*null*)
 b. $+D \rightarrow \text{Time}^1, +\text{Sp}^1, +\text{Ad}^1 = 3\text{P}$ by computation: PRO (*null*)
 c. $+D \rightarrow \text{Time}^1, -\text{Sp}^1, +\text{Ad}^1 = 3\text{P}$ by computation: PRO (*null*)
 d. $+D \rightarrow \text{Time}^1, -\text{Sp}^1, -\text{Ad}^1 = \textit{for}$ +overt pronouns/lexical nouns
 e. $-D$: 3P by default or 1P/2P/3P via binding

Valuation processes should be clear from (109). (113)e is irrelevant for the Fin-subject agreement because nominal phrases without a maximal DP projection (ϕ P and NP) do not go into this agreement. Nevertheless, (113)d is relevant. In roots, the demonstrative *he* typically falls under this combination. It is an indexical in that it picks out its reference from the context, but lacks Sp/Ad features. I speculate that $[\text{Time}^1, -\text{Sp}^1, -\text{Ad}^1]$ results in *for* insertion on Fin, as in (114)a, following the suggestion in Watanabe (1995). He proposes that *for*-complementizer is analogous to a different subject marker in switch reference. Thus, not only sentences like (114)b are ungrammatical, but also those like (114)c are ungrammatical, at least for some speakers. (114)bc are adapted from Watanabe (1995: 9-10). A similar observation is presented in Bresnan (1982).

- (114) a. John_i preferred [*for her*_j to be the candidate].
 b. * John_i preferred [*for him*_i to be the candidate].
 c. (*) John_i preferred [*for himself*_i to be the candidate].

I could assume that ambiguity of the judgment on (114)c arises from whether it is construed *de se* or *de re*. Under the present assumption, a *de se* construal is not allowed with *for*, but *de re* is possible; but this issue needs further research for confirmation.

Let us return to more relevant cases for PRO, (113)a-c. A crucial difference that lies between eLC agreement and iLC agreement, particularly in English type languages is how phonological representations correspond to these feature values. In iLC contexts, if the values come out as (113)a-c as a consequence of Fin-subject agreement, nominal elements carrying them get a null realization. Put differently, the terminal nodes representing these features correspond to PRO.

Importantly, the subject being null does not imply it lacks any person. It does bear third person as indicated in (113)a-c. This shows up in sentences like (115) from Landau (2015: 37):

- (115) John_i planned [PRO_i to promote himself/*myself].

I propose that, in English, only those features specified as [Time⁰, +Sp⁰, -Ad⁰] and [Time⁰, +Sp⁰, +Ad⁰] qualify as first person; and those bearing [Time⁰, -Sp⁰, +Ad⁰] as second person. All *elsewhere* cases fall under third person, unless they are bound to the first/second person pronouns.

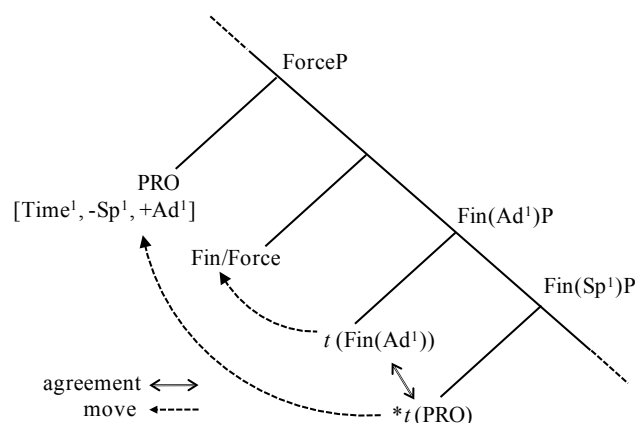
- (116) a. Time⁰, +Sp⁰, -Ad⁰ -> 1st
 b. Time⁰, +Sp⁰, +Ad⁰ -> 1st
 c. Time⁰, -Sp⁰, +Ad⁰ -> 2nd
 d. Elsewhere -> 3rd, unless bound to 1st/2nd

Note that although PRO bears third person, as in (113)a-c, it is interpreted according to Sp/Ad values. When we get (113)c, we will interpret it as designating a group inclusive of the addressee exclusive of the speaker in the shifted context. For instance, in (112), we will know it designates a group inclusive of John but exclusive of Mary; we find this out when the matrix clause is

merged and the content of the shifted context is made clear. In fact, these features are exactly what bring about distinct clausal force effects.

I assume that after the derivation as in (109) (except that since it now involves a shifted context, all the superscripts are “¹” not “⁰”), Fin adjoins to Force, the highest head in the CP domain (Rizzi (1997)). The null subject PRO moves to the Spec of this Fin/Force complex. I postulate that the Force head serves the role of *world* operator, quantifying over possible worlds as suggested by Kempchinsky (2009). The purpose of the movement of PRO to the Spec Fin/Force is for abstraction to create a self-ascriptive property out of a clause. The relevant projections are schematically shown in (117). Fin(Ad¹) adjoined to Force bears all features carried by PRO via agreement. Note that the position of *t*(PRO) will be revised later, but it is sufficiently close to my intention for the issue at hand.

(117)



*The position of *t*(PRO) will be revised in (123)b.

What we see in (117) is a representation of an embedded imperative. The reference of the imperative is restricted to include the addressee of the relevant context; this is captured by the features on PRO; recall that in PC complements, the context is shifted. The structure also represents Portner’s (2004, 2007) denotation of the imperative as in (118), repeating (50) of Chapter 2.

(118) $[[\text{Sit down!}]] = [\lambda w. \lambda x : x = \text{addressee}_C. x \text{ sits down in } w]$

(Portner (2007: 358))

The imperative quantifies over possible worlds in which the addressee takes some action. Indeed, the proposed structure quantifies over contexts, which are much more specified than the world-individuals pairs captured in (118).

Expressed forces vary depending on the feature values on PRO. As proposed in Chapter 2, each combination of the values corresponds to a specific force. PRO bearing [+Sp¹, -Ad¹] creates a promissive, and PRO with [+Sp¹, +Ad¹], an exhortative. When the embedded contexts express mental attitudes, such as hopes, thoughts and beliefs, not involving communication with the addressee(s), PRO receives no Ad values; PRO bears [+Sp]. Under these contexts, Fin_{ILC} does not represent the Ad coordinate. In other words, the left periphery lacks the Fin(Ad¹) head. In effect, this brings about the intentive or optative force. The relationship between the features on PRO and force will be just as I proposed in (89) in Chapter 2.

Thus, PRO, although null in English, does not lack person. It bears third person, but carry Sp and Ad features playing indispensable roles in interpretation. The core argument of Chapter 2 was that they are overtly realized in Japanese. We can now view the overt force markings in Japanese as realizations of Fin, bearing the same feature combinations as PRO via agreement.

- (119) a. Fin [+Sp] -> intentive -(y)oo
 b. Fin [+Sp, -Ad] -> promissive -(r)u
 c. Fin [-Sp, +Ad] -> imperative -e/ro
 d. Fin [+Sp, +Ad] -> exhortative -(y)oo²⁰

In Japanese, these suffixes may appear both in shifted and unshifted contexts, whether the features bear “⁰” or “¹”. In English, on the other hand, the distinctions between these feature values are lost in PF, but not in LF.

4.6.3. *Leave* vs. *To Leave*

A question, now, arises as to why the root imperative occurs as, say *Leave!*, while its embedded counterpart takes the form of *to leave* in English. In order to account for this, I need to first mention a crucial structural difference between declaratives and imperatives. Recall the structure

and the features on T and the subject DP after T-subject agreement under the minimalist feature sharing assumptions in (106). A simplified representation is indicated in (120).

$$(120) T_{i-uvT, \#-uv\phi} [vP \text{ Subj}_{\#-uvT, i-uv\phi} \dots]$$

The uninterpretable features on T and subject are deleted by their interpretable counterpart on their agreeing partner. However, the features are not yet valued (*uv*). To get them valued, the subject moves up to Spec TP to agree with Fin. The result is indicated in (121).

$$(121) \text{Fin}_{\#-vT, \#-v\phi} [TP \text{ Subj}_{\#-vT, i-v\phi} T_{i-vT, \#-v\phi} [vP t_{\text{Subj}} \dots]]$$

The uninterpretable features on Fin are deleted; the unvalued features on the subject and T are valued. The only features left are the interpretable valued ϕ -features on the subject and the interpretable valued T feature on T. However, to get similar results, T could have moved to adjoin Fin. If this takes place, instead of the subject movement as in (121), we get (122).

$$(122) T_{i-vT, \#-v\phi} + \text{Fin}_{\#-vT, \#-v\phi} [TP t_T [vP \text{ Subj}_{\#-vT, i-v\phi} \dots]]$$

The subject could stay at Spec *vP* and still get all features valued. All uninterpretable features on Fin get deleted and the T feature is valued on T. For some reason, which is beyond the scope of this thesis, the subject moves in English declaratives. However, T movement is another legitimate option available in the present framework.²¹

I suggest that in the derivation of the imperative, even in English, T moves as in (122) instead of the subject. The reason is that, although English is a non-null subject language, a null subject is allowed in imperatives. In my system, Fin is the locus of person agreement; if T moves to Fin, it does not need to depend on the subject for person agreement. The agreement is on T. The English imperative morphology such as *Leave!* reflects person agreement on T adjoined to Fin. This argument presupposes a previous *v*-to-T movement, which then requires a presupposition that, even though the English present or past tense does not attract *v*, the irrealis tense in the imperative does. These details need to be worked out, but I temporarily assume that root imperatives involve *v*-T-Fin movements, at least in the simplest case like *Leave!* The derived *v*-T-Fin complex bears both T and ϕ -features. The combination of the feature values for the root unshifted imperative is [Time⁰, -Sp⁰, +Ad⁰], which is pronounced as *Leave!*²²

The contrast in the phonological forms between *to leave* in embedded contexts and *Leave!* in root contexts arises from their feature value differences. *To-leave* is a morphological

realization of the features [Time¹, -Sp¹, +Ad¹]. Although they both share the same feature +Ad, for instance, one is anchored to the addressee of the utterance context, while the other is anchored to the reported speech/thought context. Importantly, syntax sees this contrast.

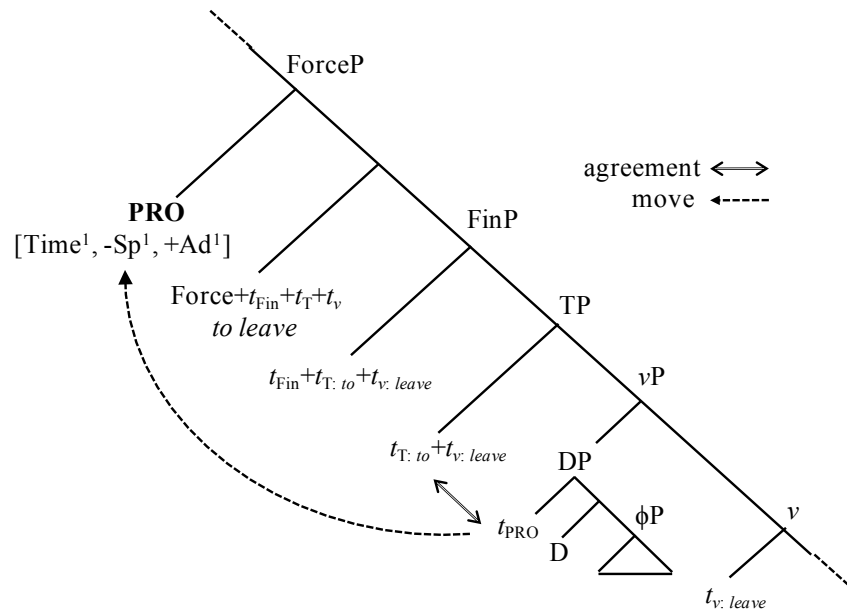
I also presuppose T-to-Fin movement for embedded imperatives, which are PC complements under my proposal. This means that PRO, which is the Spec element of the maximal subject DP projection, does not move immediately after T-subject agreement. Nor does the maximal projection raise to Spec TP. Instead, T moves up to Fin for valuation of the T and ϕ -features, and forms a T-Fin complex. We could conceive of the infinitival *to* to be a realization of the irrealis T, anchored to a shifted context as so specified by Fin.²³ This expresses an unrealized time point *not* with respect to the speech point S but to the point in time of the reported speech/thought event. More concretely, T_{irrealis} with Fin⁰ in roots represents an unrealized time point relative to the actual speech point; the counterpart with Fin¹ in embedded contexts expresses an unrealized time point relative to the reported speech point.

Whether the verb also moves to T and then to Fin is another question to be asked. Considering the fact that everyday English allows split infinitives, although it is dispreferred prescriptively, the verb does not necessarily move all the way up to Fin; but it could be adjoined to T and then to Fin, forming a v-T-Fin complex, when they are not split. I temporarily assume v-T-Fin movement for shifted imperatives just as for unshifted imperatives.

To sum up, (123)b represents the syntactic derivations and structures of PC complements such as (123)a.

(123) a. Mary told John PRO to leave.

b.



A crucial point is that PRO could stay at Spec DP, which is at Spec vP, until the last movement to Spec Force for λ -abstraction. This is because it has already shared its person features and tense features with T in T-PRO agreement (see (106) and (108)). When T adjoins to Fin, PRO gets all these features valued via T. I left the details of (123)b for simplicity, but multiple Fin heads such as Fin(Time¹), Fin(Sp¹), and Fin(Ad¹) are presupposed. T moves up to these heads one by one for its features to be valued in a similar manner illustrated in (109). The values on T are instantly transmitted to the shared features on PRO. PRO ends up with [Time¹, -Sp¹, +Ad¹] for (123)a.

PRO moves to the edge of the complement with these features. They represent the imperative force. ForceP also bears the same features. When a matrix predicate merges this structure, the predicate and ForceP form a sister-relation. I consider this relation to be a prerequisite for an s-selectional relationship.

Traditionally, it has been argued in semantic approaches to control that controller choice is encoded in the lexical semantics of control predicates (Jackendoff (1972), Williams (1980), Farkas (1988), Culicover and Jackendoff (2001, 2006), Jackendoff and Culicover (2003)). Various syntactic approaches have also presupposed this assumption. However, how the semantics of the matrix predicate that determines the controller could be mapped onto syntax has

never been clear. If the complement is a CP with its subject PRO at Spec TP, as often assumed, the position of PRO seems to be too far from the matrix predicate to exert its influence on PRO. In addition, how the predicate makes the reference of PRO to be identical to the reference of its argument has not been fully explained in syntactic terms.

In my proposal, PRO is at the clausal edge, accessible to the matrix predicate; its reference options are already determined by the features on PRO when the predicate merges the structure. The semantics of the predicate is still important in my framework, but not in determining the reference of PRO; it bears significance in maintaining the right selectional relationship between the predicate and its clausal argument. This way of thinking is also compatible with minimalist assumptions such as the Phase Impenetrability Condition (Chomsky (2001)).

4.6.4. Agreement in the Shifted Environment: *he*

The picture seems incomplete if we do not consider the cases for shifted contexts with an overt subject. The *he* (*he**) cases such as (124).

(124) a. John hopes that he will win.

b. [Fin eLC $\langle \text{Sp}^0, \text{Ad}^0, \text{Time}^0 \rangle$ [TP John hopes [that [Fin iLC $\langle \text{Sp}^1, \text{Time}^0 \rangle$ [TP *he** will win]]]]].

My argument is already presented in (124)b. The key is in the iLC of the complement clause; it involves shifting of the Speaker coordinate, but not the Time coordinate. Note that since the complement expresses a mental attitude without communication, the iLC does not include the Addressee. This is not the issue here. The focus is on the number superscript on Sp and Time. My assumption is that *he* bears [Time⁰, +Sp¹] after syntactic derivations, which is minimally different from the features on PRO in PC as in (125), bearing [Time¹, +Sp¹], and the English first person pronoun *I* with [Time⁰, +Sp⁰]. *He* bears [+Sp¹], but since it is not [+Sp⁰], it does not qualify as first person; but Time⁰ makes it overt; PRO cannot be first person nor overt.

(125) John hopes PRO to win.

The coordinates represented in the eLC and the iLC do not always shift in one fell swoop. So far, building on Bianchi (2001, 2003), I have been assuming only two types of logophoric centers:

the eLC and the iLC. In the eLC all coordinates are anchored to the actual speech event, while in the iLC all coordinates are anchored to the reported speech/thought event. However, this conjecture may be incorrect. Observe the following from Wurmbrand (2014: 411):

- (126) a. Leo decided a week ago to go to the party yesterday.
 b. Leo decided a week ago that he will go to the party (*yesterday).

We could assume that the non-finite tense in the embedded clause in (126)a is anchored to the reported time (the time of Leo deciding). The embedded event expressed by the infinitival *to go* may occur any time after the reported event; thus, *yesterday* may appear felicitously. In contrast, in (126)b, the finite tense is anchored to the utterance time; *will* represents a point in time after the utterance time; this is evidenced by infelicity of occurrence of *yesterday*. In the proposed system, this amounts to Fin bearing Time^0 , or projecting $\text{Fin}(\text{Time}^0)$. If *he* can be read *de se* (I assume this is an option both in (124)a and (126)b), it involves indexical shift, which is represented by Sp^1 on Fin. This means that after agreement operations, an indexical subject bearing Sp at Spec DP comes to bear $[\text{Time}^0, +\text{Sp}^1]$, which will be third person in the current framework.

The following summarizes my proposal on the feature combinations and their corresponding English person for indexical pronouns. In a way, the overt first/second/third personal pronouns which have agreed with T and Fin (=Nominative) realize finiteness (Time^0), which means being anchored to the utterance time in a language like English.

- (127) a. $\text{Time}^0, +\text{Sp}^0, (-\text{Ad}^0) \rightarrow$ 1st
 b. $\text{Time}^0, +\text{Sp}^0, +\text{Ad}^0 \rightarrow$ 1st
 c. $\text{Time}^0, -\text{Sp}^0, +\text{Ad}^0 \rightarrow$ 2nd
 d. Any other values \rightarrow 3rd $\left\{ \begin{array}{l} \text{Time}^0 \rightarrow$ overt 3rd \\ \text{Time}^1 \rightarrow null 3rd (PRO) \end{array} \right.

4.6.5. A Problem: First and Second Person PRO

Under the proposed system, a sentence like (128)a poses a serious problem.²⁴

- (128) a. I_i planned [PRO_i to promote myself $_i$].
 b. [Fin eLC $\langle Sp^0, Ad^0, Time^0 \rangle$ [TP I plan [Fin iLC $\langle Sp^1, Time^1 \rangle$ [TP PRO to promote myself]]]]].

A context shift should have taken place from Fin_{eLC} to Fin_{iLC} . I assume that the complement in (128)a is an intensitive, which is compatible with the predicate *plan* in terms of s-selection. PRO ends up with $[Time^1, +Sp^1, -Ad^1]$ at the end of agreement operations, and bear third person as a result. However, against this prediction, a grammatical sentence like (128)a occurs with the first person reflexive *myself*. How could this be? I will lay out my speculations below.

One analysis, which I ultimately reject, is to focus on the identity in reference between Sp^0 and Sp^1 . A closer look at sentences like this tells us that the reflexive *myself* appears when Sp^0 on Fin_{eLC} designates the same individual as Sp^1 on Fin_{iLC} . In other words, the speaker of the speech context and the speaker of the reported context refer to the same individual. This suggests that shifts from Fin_{eLC} to Fin_{iLC} in such cases may involve partial shifts: Time shifts, but Sp does not. This results in Fin_{iLC} representing Sp^0 and $Time^1$. Predicates such as *plan* describe mental attitudes, so Ad coordinate is irrelevant here. This way of thinking implies that we have (129) instead of (128)b for (128)a.

- (129) [Fin eLC $\langle Sp^0, Ad^0, Time^0 \rangle$ [TP I plan [Fin iLC $\langle Sp^0, Time^1 \rangle$ [TP PRO to promote myself]]]]].

After agreement, (129) will give PRO feature values $[Time^1, +Sp^0]$. We could assume $[+Sp^0]$ on PRO qualifies as first person; but since it bears $[Time^1]$, it cannot appear overtly as first person. However, a reflexive bound to PRO may appear in first person. The problem seems solvable this way. Intriguingly, data from Ewe supports this view ((130) and (131) repeat (72) and (77); (132) is mentioned in endnote 13).

- (130) Kofi $_i$ be yè $_i$ / *_j dzo.
 Kofi say LOG leave
 ‘Kofi $_i$ said that he $_i$ / *_j left.’
- (131) M be m le cleva
 ISG say 1SG COP clever
 ‘I say that I am clever.’

- (132) * M be yè le cleva
 1SG say LOG COP clever

Intended: 'I say that I am clever.'

Under the proposed analysis, Ewe logophor *yè* appears in the position of a shifted indexical (130). However, when the speaker of the speech context and the speaker of the shifted context are the same individual, the first person pronoun appears in this position, instead of the logophor *yè* (131). In fact, the logophor *yè* in this context brings about degradation (132). Appearance of *himself* in (128)a corresponds to the degraded Ewe case in (132).

Under this approach, (133) also seems unproblematic. Here, no shift takes place for the addressee either. Note that the complement in (133) is an imperative under my framework.

- (133) a. I ordered you_i [PRO_i to behave yourself_i].
 b. [Fin eLC <Sp⁰, Ad⁰, Time⁰> [TP I ordered you [Fin iLC <Sp⁰, Ad⁰, Time¹> [TP PRO to behave yourself]]]].

Yet, (134) constitutes a problematic case:

- (134) a. You_i planned [PRO_i to promote yourself_i].
 b. [Fin eLC <Sp⁰, Ad⁰, Time⁰> [TP You plan [Fin iLC <Sp¹, Time¹> [TP PRO to promote yourself]]]].

This time, Sp⁰ on Fin_{eLC} and Sp¹ on Fin_{iLC} designate distinct individuals: Sp⁰ corresponds to the speaker of the speech context, and Sp¹, the addressee of the speech context, who is the speaker of the reported context, or more precisely the author of the intention (the complement in (134) is an intensitive). If one simply applies my system to this configuration, PRO qualifies as third person, and the reflexive should appear in third person *himself/herself*, contradicting the fact. Furthermore, one could not employ the same device as the above; we cannot represent Sp⁰ on Fin_{iLC} because the speaker of the speech context is not the same individual as the speaker/author of the reported context. Likewise, a sentence like *you order me to behave myself* is unaccountable by the above approach; the addressee of the speech context is distinct from the addressee of the reported context.

Thus, the issue of the first/second person reflexives appearing in PC complements seems to require much more consideration. A different line of thought that seems more promising is the one that focuses on the nature of reflexives. The discussion below is inconclusive and

contradicts with some of the crucial arguments of the present thesis. However, it expresses my long-held intuition that the person value (first/second/third) of the reflexive in PC complements is evaluated against the utterance context ($Fin_{eL.C}$) although it appears inside the scope of the reported context ($Fin_{iL.C}$).

Condition A of the binding theory requires that a reflexive anaphor be c-commanded by and coindexed with a DP within its binding domain. To meet this requirement, PRO and the reflexive anaphor as in (134)a must at least be coindexed. However, a question arises as to whether PRO directly binds the reflexive (or the trace of PRO inside vP binds the reflexive). There are at least two other alternatives: PRO and the reflexive may be bound by distinct antecedents whose semantic values are at least equivalent in some way, or they may be bound by the same antecedent. These alternatives are considered in the discussion surrounding the nature of *unexpected binding theory effects* (Heim (1994), Sharvit (2011), and Landau (2018)).

The unexpected binding theory effects may be illustrated by a sentence like (135) from Landau (2018: 32), which is adapted from Sharvit (2011: 55).

(135) Palin wants PRO_i to vote for herself.²⁵

In this example, the reflexive *herself* may be read *de re* while PRO is obligatorily interpreted *de se*. For instance, the sentence is judged true under the scenario where Palin thinks “I want to vote for this politician” without being aware that *this politician* in fact designates Palin herself. The *de re* reading of the reflexive is unexpected if it is bound to PRO which must be read *de se*.

My intention here is not to develop an account for such effects, which is beyond the scope of this thesis. What I focus on is the fact that in the previous literature, it is suggested that the reflexive *herself* may be bound by the trace of *Palin* outside the complement clause; this is a violation of Condition A. However, it is argued that since PRO may ultimately be bound by *Palin*, the coindexation requirement of Condition A is satisfied. Very roughly, under Landau’s (2018) framework, PRO is a *de re* pronoun but bound by the controller in the matrix clause via a variable (pro_x) which ensures the obligatory *de se* construal of PRO; PRO and the reflexive in the complement are both *de re* pronouns bound by the same matrix argument, meeting Condition A. Sharvit (2011) proposes that PRO is bound by the *self* counterpart of the attitude holder (=Palin), and the reflexive is bound by the attitude holder (=Palin); this satisfies her notion of *covaluation*,

required for Condition A. Interestingly, both assume a long-distance binding of the *de re* reflexive from outside the complement clause mediated by a local operator. Heim (1994) also suggests that *de re* reflexives in the complement may be bound by the matrix argument when the complement subject is a *de se* pronoun.

If their suggestions are correct, the person feature of the reflexive may come from the matrix argument, or it may at least be evaluated against Fin_{eLC} outside the scope of Fin_{iLC} ; the person of the reflexive may be determined independently of the person of PRO (although they need to be coindexed). Then, the problematic cases including (128)a, (133)a, and (134)a may be accounted for. The reflexives are bound pronouns; this suggests that they have a structure like (56)b, a ϕP structure lacking the PARTICIPANT node. Note that a ϕP pronoun may be first, second, or third person, depending on the person of the binder (see (100)) at least in a language like English. Independently of the person, it lacks indexicality. In (128)a, for instance, PRO may bear third person as my proposal predicts, but the reflexive may appear in first person bound by the matrix argument *I* or plausibly Sp^0 on Fin_{eLC} . In (134)a, I could assume that the reflexive *yourself* is bound by *you* in the matrix clause or Ad^0 .

For Condition A, PRO and the reflexive must be coindexed. An obvious problem is that PRO is a *de se* pronoun while the reflexive is a *de re* pronoun; that is why the above long-distance binding approach is proposed in the first place. One could assume, following Sharvit (2011), that designating the same individual satisfies the coindexation requirement. Yet, PRO may not directly bind the reflexive when the latter is read *de re*, because if it did, the reflexive would be read *de se*.

Recall that the ϕP structure of (56)b bears Gender and Number; I could assume that their values come from the binder outside the scope of Fin_{iLC} . This suggests that Gender on the reflexive matches that of the utterance speaker's ($=\text{Sp}^0$) point of view; whether the attitude holder sees himself/herself as male or female does not seem to contribute to Gender on the reflexive, at least in *de re* cases. In (135), the reflexive *herself* reflects the fact that the utterance speaker sees Palin as a woman, but not how Palin sees herself. The often-cited transsexual example (Schlenker (2011: 1575)) may be explained in this way.

(136) John, a transsexual, hopes PRO to become a woman and to buy himself/*herself a car.

Although John is a woman in contexts compatible with John's hope, *himself*, not *herself*, occurs grammatically in the complement. This may be because the speaker of the entire utterance sees John as a man. It is predicted that Number also matches that of the matrix argument, suggesting that plural anaphors such as *themselves* and *each other* do not appear when the alleged controller is singular; this seems to capture the nature of PC in some dialects of English (Landau (2000)), although I explore a different line of thought in the next chapter.

However, admittedly, the above suggestion is inconclusive and requires a much more careful consideration. It has multiple obvious problems. Its biggest problem is that it only accounts for *de re* reflexive readings; the present thesis presupposes that the *de re/de se* contrast arises from structural contrasts so that an account for *de se* reflexives is in order. Also, a deeper exploration of the nature of the coindexation requirement of Condition A is necessary. Furthermore, it needs to be considered how this type of binding could be made compatible with minimalist assumptions such as the Phase Impenetrability Condition (Chomsky (2001)).

Some readers may wonder why I do not assume PRO to be bound by the controller argument as in Landau (2015, 2018) (see 5.10.2, Chapter 5); if it were bound, the agreement features of both PRO and the reflexive would be determined by the controller, and (128)a, (133)a, and (134)a would not pose a problem. The present thesis argues that there is no binding relation between the controller and PRO. I maintain this way of thinking, not only for deriving *de se* PRO and partial control, but also for explaining split control and implicit control. It is one of the most important findings of Landau (2015) that only PC but not EC exhibits these atypical patterns of control. The present thesis is attempting to account for these patterns in a principled manner. Split control seems particularly problematic to an approach that assumes variable binding of PRO by the matrix argument. How could PRO be bound by two distinct arguments? In contrast, the present proposal assumes that PRO is a free variable with specifications that restrict its reference options to a specific set of sets of individuals (see section 4.2); PRO in split control has specifications that restrict the reference of PRO to sets of individuals that include the speaker and

the addressee of the reported context, just like the English inclusive *we*. Implicit control is not an issue for my proposal because PRO does not require a DP that binds it for its interpretation.

Unfortunately, however, my proposal suffers from the agreement problem raised in this section. I will leave further discussion on the issue for another occasion.

Chapter 5. PRO as an Associative Plural

5.1. Issue and Overview

The goal of this chapter is to shed light on what underlies the tight connection between the obligatory *de se* reading and availability of partial control under PC predicates. I will argue that PC PRO has the same internal structure as associative plurals attested in the world's languages. In fact, all languages have associative plurals. Associative plural semantics constitutes a near universal as a property of the first and the second person plural pronouns according to various studies including Cysouw (2003), Wechsler (2010), and Harbour (2016). This chapter reveals that the indexical structure of the first and the second person pronouns is the source of associative semantics; this structure is shared with PRO.

5.2. Partial Control Facts

I first clarify three important properties of PC. Consider the following:

- (1) The chair_{*i*} preferred PRO_{*i*+} to gather at 6.

(1) is probably the most-known partial control example from Landau (2000). The matrix subject *the chair* constitutes only a subset of the reference of PRO. Although the alleged controller *the chair* is singular, PRO must be at least semantically plural because *meet* being a collective predicate requires a plural subject.

Next, observe (2), adapted from Pearson (2013: 301):

- (2) Mary asked John_{*i*} PRO_{*i*+} to move the piano.

Examples that exemplify partial control often contain a collective element such as *meet*, *gather*, *together* or *as a team*, but as shown in (2), such an element is not required to induce partial control. If the contextual information is properly set, as in (2), where the piano would be too heavy for John alone to move, a partial control construal naturally arises without a collective element. Note, however, that an exhaustive construal is also possible in (2) if the context has it that John has no trouble moving it by himself. Syntactically, PC PRO is always vague with respect to exhaustive and partial construals.

Lastly, consider (3):

- (3) The professor asked the students_i PRO_{i/i+} to move the piano.

A partial control reading does not necessarily involve a singular controller and a plural PRO.

This third property of partial control tends to escape linguists' attention. The controller vs. PRO contrast we need to capture in partial control is not a singular vs. plural contrast. In (3), the professor may have directly asked, say, three students to move the piano, but PRO may refer to ten students including those three. Here again, partial/exhaustive vagueness arises, as pointed out by Pearson (2013). Set theoretically, then, the relation that characterizes the reference set of the alleged controller and that of PRO is a subset relation as shown in (4). Crucially, it is not a proper subset relation so that an identity relation is not excluded.

- (4) Reference of the controller \subseteq Reference of PRO

A proper subset relation corresponds to the partial reading of PRO and an identity relation, to the exhaustive reading of PRO. This means that any syntactic relation that ensures this subset relation between the controller and PRO allows the semantic ambiguity between partial and exhaustive readings.

5.3. First and Second Person Facts

Such a subset relation, indeed, also holds between the speaker of the utterance context and the first person pronoun, and the addressee of the utterance context and the second person pronoun. As is well-known, the first and the second person pronouns have an associative plural semantics (Postal (1970b), Noyer (1992), Cysouw (2003), Bobaljik (2008), Wechsler (2010), Harbour (2016)). According to Cysouw (2003: 68-78), this knowledge at least dates back to Franz Boas (1911) and Jespersen (1924), and perhaps it had been known even before that, which at this point I am unable to confirm. Nonetheless, it is sometimes implicitly assumed that the notion of first person and that of speaker are equivalent; they are not. We have a subset relation between the speaker(s) of the utterance context and the first person reference set, and the addressee(s) of the utterance context and the second person reference set. For instance, the pronoun *we* may refer to the speaker(s) plus some others; *you*.Pl may refer to the addressee(s) plus others as long as it excludes the speaker. Associative plurals like the first and second person plural pronouns are

different from regular additive plurals: the latter such as *dogs* denote multiple dogs; the former do not necessarily denote multiple speakers or addressees. *We* only means that its reference set includes the speaker(s); likewise, the reference set of *you*.Pl is just inclusive of the addressee(s) but exclusive of the speaker(s). The subset relation observed for the first and the second person pronouns with respect to the speaker(s) and the addressee(s) of the context can be represented as follows:

- (5) Reference set of speaker(s) \subseteq First person reference set
- (6) Reference set of addressee(s) \subseteq Second person reference set
- \wedge Reference set of speaker(s) $\not\subseteq$ Second person reference set

Now, these subset relations are very similar to the relation that holds between the controller and PRO. Compare (5) and (6) with (4). What appears specific to partial control seems reducible to common properties of the person system.

The notion of first person in itself does not distinguish singular from plural. The first person reference set is necessarily identical to the notion of speaker only when its cardinality is one, singular. However, in the other cases, they do not need to be identical. The same holds for the second person reference set. Such associative plural nature of the first and second person pronouns has long been known. However, to my knowledge, the morphosyntactic structures that underlie associative plurals had not been seriously discussed until Vassilieva (2005, 2008); although there have been studies that focused on associative plurals in a particular language (Li (1999), Kurafuji (1999, 2004), Nakanishi and Tomioka (2004)).

The present study attempts to generalize the associative plural nature of the first and second person pronouns to PC PRO. My proposal crucially builds on Vassilieva's (2005, 2008) analysis on DP-internal structures of associative plurals, which will be introduced in section 5.5. Before I move on to associative plurals, one critical issue has to be considered: the issue concerning whether *we* as an additive plural of *I* is ever possible. The next section should be taken as an interlude focused on this controversial issue.

5.4. An Interlude: Multiauthor *We*

Consider (5) again. There I implicitly assumed that the person system allows the notion of multiple speakers (or multiple authors in thinking acts). I presupposed there that *multiauthor we* as depicted in Harbour (2016) is a linguistic option. This presupposition is, however, very controversial. I will in fact argue that multiauthor *we* is both semantically and grammatically impossible in *pure* root contexts. However, it is both semantically and grammatically feasible in embedded contexts.

Cysouw (2003), for example, suggests that multiauthor *we*, or *we* as multiple *selves* is conceptually impossible. He cites Franz Boas:

(7) *A true first person plural [1+1] is impossible because there can never be more than one self.* ((Boas (1911: 39), cited in Cysouw (2003: 73))

If we take the first person as referring to the self as Boas did, then the additive plural *we* seems semantically implausible, Cysouw argues. However, Cysouw holds that *the choric we*, multiple individuals speaking in unison, is at least a semantically feasible notion. The following are some examples of the choric *we* from Cysouw (2003): a soccer audience singing *We are the champions* celebrating the victory of their team; and a concert audience shouting *We want more!* Although such uses of *we* are marked, they exemplify semantic feasibility of the notion of multiple speakers. Nonetheless, Cysouw dismisses the multiple speaker *we* as a grammatical category, because there is no language in the world that morphologically distinguishes the choric *we* from the associative *we* (i.e. *we* representing a single speaker-plus-others). Thus, for Cysouw, the choric *we* is semantically feasible, but it does not constitute a grammatical category.

For Harley and Ritter (2002b: 31), the choric *we* is not even semantically feasible. The present study mostly sides with Harley and Ritter in this regard. In my past works (Matsuda (2015ab, 2017ab)), I assumed that the choric *we* is both semantically and grammatically possible albeit the lack of morphological distinctions. However, I have come to realize that even in apparent instances of the choric *we*, for each individual shouting *We want more!* and for each utterance one is making, there is only one speaker himself and some others shouting with him. Thus, even in these instances of *we*, in each distinct utterance one makes, it refers to a single

speaker and others, not to the multiple speakers. As such, instances of the choric *we* do not stand as evidence for semantic plausibility of the multiple speaker *we*.

Harbour (2016: 68-69) mentions *shared* or *joint intentionality* as evidence for semantic feasibility of the multiauthor *we*. For instance, (8) can be understood in two ways:

(8) We're making hollandaise.

Imagine that (8) is uttered to describe the situation in which Dierk and the speaker *I* are making hollandaise. In one reading, Dierk and the speaker work in cooperation, having a shared intention to make hollandaise. In the other reading, Dierk and the speaker work with their own independent intentions and for their own ends. For the former reading, *we* represents multiple *I*'s whereas for the latter reading, *we* designates *I* plus others, according to Harbour. As such, the former *we* can be taken as an instance of the true multiauthor *we*. Harbour (2016: 69) also considers the use of the first person plural pronoun in Jewish liturgy, in which the first person plural often thanks and pleads with the deity with shared intentions or *communal ends*. For Harbour, these uses of the first person plural pronoun are deeply rooted in human nature. Humans share intentions, work for communal ends, and establish group identity. Thus, for Harbour, the multiauthor *we* constitutes a semantically plausible notion. However, Harbour like Cysouw in the end disregards the grammatical significance of the multiauthor *we*, based on the same argument Cysouw presented, that no typological studies have found a language that morphologically distinguishes the multiauthor *we* from the associative *we*.

However, I argue for both the semantic and grammatical significance of the multiauthor *we* in certain contexts. Importantly, my semantic argument for the multiauthor *we* does not come from Harbour's account based on shared intentions and group identity. Shared intentions do not seem to constitute evidence for the notion of multiauthor *we*. They just constitute evidence for the associative plural *we*, where the single speaker and some others can be expressed as one group with shared intentions. The two readings available in (8), for me, only stand as evidence for the collective *we* and distributive *we*, in both of which *we* represents the atomic speaker and some other individual(s) (Dierk, in this case). Put another way, what makes the use of the first person plural pronoun *we* licit in (8) is the fact that one of the individuals referred to by *we* is the speaker. If the speaker is the only one who made the utterance (8), then

Dierk is not the speaker or the author of this utterance regardless of whether Dierk and the speaker were working in cooperation. Dierk may have uttered the exact same string of words at the same time as the speaker of (8) *in chorus*, but Dierk's utterance is a distinct utterance. In Dierk's utterance, *we* refers to the speaker Dierk and some other individual (the speaker of (8)). Both (8) and Dierk's utterance may express the collective intention of the two *selves*, but *we* in each utterance just cannot refer to the multiauthor *we*, since there cannot be multiple authors or speakers for one utterance. Harbour in fact seems to be aware of this problem (see Harbour (2016: 70)).

Consider (9) where the third person plural pronoun *they* occurs:

(9) They are making hollandaise.

They may refer to two individuals, say Sam and Peter, and (9) may express, at least in one reading, Sam and Peter making hollandaise in cooperation for a shared end. In this case, *they* represents two *selves* having a shared intention, but *they* does not represent multiauthors of the utterance. In fact, neither of Sam nor Peter is the author of the utterance, and for this reason, the third person plural pronoun *they* is picked by the speaker/author of (9). Thus, shared intentions as exemplified by (8) or other uses such as *we* used for communal ends do not support the view that the multiauthor *we* is semantically feasible. Instead, these important notions (e.g. shared intentions, group identity) probably contribute to our understanding of why language has associative first person plural pronouns.

As such, there seems to be no clear evidence that proves even semantically plausible instances of the multiauthor *we*. Nonetheless, against all the arguments I have made for the implausibility of the multiauthor *we*, I believe there are instances of the multiauthor *we* in limited contexts. Observe the following from Rullmann (2004: 161):

(10) We all think we're smart.

(10) has at least two readings: one is a strict reading and the other a sloppy reading. They could be represented as follows:

- (11) a. $\forall x [x \in WE. x \text{ thinks that } WE \text{ are smart}]$
 b. $\forall x [x \in WE. x \text{ thinks that } x \text{ is smart}]$

(11)a corresponds to a non-variable strict reading, and (11)b to a variable sloppy reading. I argue that the embedded *we* in (10) with a variable reading (11)b is an instance of the multiauthor *we*. In fact, we can force a variable reading in the sentence below (from Rullmann (2004: 161)):

(12) We all think we're the smartest person in the world.

In (12), a variable reading for the embedded *we* is forced because the embedded predicate requires a singular subject, and *we* taken deictically (i.e. as in a strict reading) does not meet this requirement. Crucially, the embedded clause with a bound variable *we* in (12) represents the thought of each individual included in the reference of the matrix subject *we*, who would have expressed his thought in direct speech (thought) as *I am the smartest person in the world*. The embedded clause expresses the *de se* attitude of each individual in the reference of the embedded *we*. Now, in this case, each individual in the embedded *we* counts as an author of the thought; each would have expressed his thought with the first person singular *I*. No one has thought *We are the smartest person in the world*, which is in the first place infelicitous. Thus, no one has thought *I and others are the smartest person in the world*. Instead, everyone in the reference of the embedded *we* has thought *I am the smartest person in the world*, and the *I* here represents the author of the thought. The embedded *we* in (12) thus exemplifies an instance of the multiauthor *we*. This is why I argue for semantic feasibility of the multiauthor *we*. It is implausible in roots but plausible in certain embedded contexts. Although the multiauthor *we* is morphologically non-distinct from the associative *we*, I will argue later that the distinction is syntactically visible and brings about various visible consequences. For these reasons, I posit multiple speakers (this is a cover term for both the speakers in the speech act and the authors in the thought act) in (5).

Lastly, some comments on the notion of the multiple addressees. Contrasted to the notions of the choric *we* and the multiauthor *we*, the notion of the multiple addressee *you* is semantically much more plausible. One could easily imagine a situation where a teacher would address his class using the plural *you* (e.g. *you will have an exam tomorrow*). As mentioned in Cysouw (2003: 74-75), *you* in this use most plausibly refers to the multiple addressees (i.e. multiple students) present in class. It could refer to the multiple addressees plus some others who may be absent, but in that case too, *you* includes the multiple addressees in its reference. Thus, the notion of the multiple addressees seems semantically available. Harbour (2016) also argues

for semantic feasibility of the multiple addressees by drawing on the basic human nature of establishing group identity. Constituting the notion of *you* as multiple addressees as opposed to the notion of *you* as some addressees and others establishes group identity.

Nonetheless, both Cysouw and Harbour dismiss the presence of the grammatical category that exclusively represents the notion of the multiple addressees. According to Cysouw, there is no clear evidence in the world's languages that the multiple addressee second person plural constitutes a grammatical category distinct from the second plural for addressee-plus-others. Harbour holds that the linguistic representation of the multiple addressees involves complication in the mental ontology, thus based on the principles of economy, language may represent only a single addressee.

However, I assume here, rather simple-mindedly, that the multiple addressee *you* is a linguistic option both in roots and embedded contexts. It has grammatical significance. Contrasted to the notion of the multiauthor *we*, which is semantically implausible in roots, the multiple addressee *you* is semantically very natural and found in everyday uses of *you*; it refers to multiple addressees. Reducing such uses of *you* to the notion of a single addressee plus others would involve complications. Moreover, lack of morphological significance does not entail grammatical insignificance. There is no definitive data supporting this view, but there is no clear evidence against it either. I just posit multiple addressees in the system I propose, and see what consequences this could lead us to. As we will see, syntax distinguishes nominal structures representing multiple addressees from those representing an addressee plus others at the semantic-syntactic interface in the relevant contexts. However, it will take another few sections to be clear on this point.

This ends the interlude. The next section returns to the discussion on partial control and associative plurals.

5.5. Nonpronominal Associative Plurals

In section 5.3, we saw that PC effects may be reducible to associative plural semantics inherent in the person system. The first and second person pronouns are typically involved with associative semantics, and so is PC PRO. In fact, certain instances of the third person pronouns

(i.e. the indexical third person pronouns) also bear the associative structure. This section discusses how associative plural readings may be structurally brought about.

As a matter of fact, associative plural semantics is not an exclusive property of personal pronouns. There are a significant number of languages in the world in which non-pronominal associative plurals are found. According to Daniel and Moravcsik (2005), 200 languages out of a sample of 237 languages have non-pronominal associative plurals.

We first introduce Vassilieva's (2005, 2008) structural proposal on non-pronominal associative plurals in the world's languages. Vassilieva builds on Moravcsik's (2003) descriptive work on associative plurals. Some examples are shown in (13).

- (13) a. Tanaka-tati (Japanese) (Adapted from Moravcsik (2003: 469))
Tanaka-Pl
'Tanaka and his associates' or 'multiple Tanakas'
- b. Peš-ov-i (Bulgarian) (Vassilieva (2005: 21))
Peter-poss/Adj-Pl
'Peter and family'
- c. pater ol (Tok Pisin) (Mühlhäusler (1981: 43), cited in Vassilieva (2005: 8))
priest Pl
'the priest and his flock'
- d. Pa hull (Afrikaans) (den Besten (1996: 16), cited in Vassilieva (2005: 1))
Dad them
'Dad and his folks,' 'Dad and Mom,' or 'parents'

Associative plurals are different from regular additive plurals in that the former refers to a group by overtly expressing only its most salient member. While *dogs*, a regular additive plural, refers to multiple dogs, *Peš-ov-i* 'Peter and family' in Bulgarian ((13)b) does not refer to multiple individuals all named Peter; instead, it refers to a group of people inclusive of Peter. The Japanese associative marker, *-tati*, takes the same form as the additive plural morpheme, so that ambiguity arises in expressions such as *Tanaka-tati* (either 'Tanaka and his associates' or 'multiple Tanakas') in (13)a, but to the extent that it allows an associative plural reading, *-tati* is taken to be an associative marker (see also Nakanishi and Tomioka (2004)). Importantly, *-tati*

mostly attaches to [+human] nominals. It sometimes attaches to non-human [+animate] nominals as in *doobutu-tati* ‘animal-Pl’ and *konchuu-tati* ‘insect-Pl.’ When *-tati* is attached, these [+animate] nouns seem to be interpreted as bearers of mental attitudes or volition comparable to human beings. *-Tati* allows associative plural readings on these non-human nominals too.¹ Associative plurals are also observed in Tok Pisin as in (13)c. Interestingly, although *pater ol* ‘the priest and his flock’ (or ‘the priest and his congregation’) in (13)c employs the morpheme *ol* which is also used for additive plurals, the position of the morpheme distinguishes the expression from the additive plural; *ol pater* means the priests. Another intriguing pattern of associative plurals is found in Afrikaans. As in (13)d, a non-bound morpheme corresponding to the third person plural pronoun *hulle* ‘them’ attaches to the nominal *pa* ‘dad’ to form an associative plural. The associative formation patterns introduced here are not exhaustive. Some associatives take the form of *the focal referent* + ‘*people*’ and others *the focal referent* + ‘*and / with*’ (see Vassilieva (2005: 10-12)).

An associative plural expression denotes a group that is inherently or contextually associated with the overtly expressed salient member (e.g. the referent of the proper name *Tanaka* in *Tanaka-tati*). Importantly, according to Daniel and Moravcsik (2005), associative plurals mostly refer to humans. There are some sporadic counterexamples such as in Nganasan, a Uralic language, where the plural form of ‘bow’ refers to ‘bow and arrows.’ However, non-human associative plurals are not productive and involve fixed expressions. Intriguingly, cross-linguistic research evinces that availability of associative plural interpretation is sensitive to the Animacy Hierarchy as follows (Corbett (2000), Moravcsik (2003), Vassilieva (2005)):

(14) The Animacy Hierarchy (Adapted from Moravcsik (2003: 490))

1st person pronoun > 2nd person pronoun > 3rd person pronoun > Proper name
> Definite kin noun > Definite title noun > Other definite human noun

The higher the position of a nominal in the hierarchy, the more likely the availability of associative plural readings. More concretely, if a language has a nominal that brings about an associative plural reading, in that language, any other nominals located higher in the Animacy Hierarchy also give rise to an associative reading (Moravcsik (2003: 490)). First and second

person plural pronouns are nearly universally associative. However, languages vary regarding down to which position of the hierarchy associative readings of the plural nominals are available.

In Vassilieva (2005, 2008), she proposes that an associative plural has two nominal elements within its structure. One is a nominal that refers to the most salient member, which she calls *the focal referent*, following Daniel (2000) and Moravcsik (2003). The focal referent is the most salient member of the group denoted by the nominal, corresponding to *Tanaka*, *Pešovi* ‘Peter,’ *pater* ‘priest,’ and *pa* ‘dad’ in (13)a-d respectively. The other is a nominal with non-descriptive group reference. (15) represents her analysis for an associative plural. She assumes multiple functional categories, NumP and DP, within nominal phrases. This view is in line with Ritter (1995), Déchaine and Wiltschko (2002, 2009), Harley and Ritter (2002), and many others. Importantly, it is in line with my proposal presented in the previous chapter.

$$(15) \quad [DP_1 [DP_2 \text{ focal referent}]_i D^0 [_{NumP} \text{ Num}^0 + Pl [_{XP} t_i [_{NP} N^0 + \text{human}]]]]$$

(Adapted from Vassilieva (2008: 239))

According to Vassilieva, associative plurals are headed by a null non-descriptive noun, specified as [+human]; the projected NP has [+human] group reference. She proposes that the focal referent behaves like English-type pronominal possessives and demonstratives, which is assumed to originate in a modifier projection (XP in (15)) and raises to Spec DP, to license a null determiner at D^0 . In a way, the focal referent plays the role of determiners. Vassilieva’s proposal on associative plurals parallels the determiner view of personal pronouns as in Postal (1970b) and Abney (1987). A nominal phrase may have a contentful determiner and a non-contentful NP complement.

She supports her analysis via various empirical data. For instance, within the nominal structure of the Bulgarian associative plurals, the focal referent licenses a covert determiner and precedes numerals. Such behavior is similar to the Bulgarian demonstratives, which are assumed to be in Spec DP. The Bulgarian definite marker usually appears attached to the left-most element of the noun phrase ((16)ab), but when this left-most element is a demonstrative, the definite marker does not surface ((16)c). However, the definite marker may occur on the numeral following the demonstrative ((16)d). Vassilieva assumes that the numeral adjoins to D^0 in Bulgarian.

- (16) a. **knigata**
 book-Def
 ‘the book’
- b. **krasivata** nova kniga
 beautiful-Def new book
 ‘the beautiful new book’
- c. ***tazita** kniga
 this-Def book
 ‘this book’
- d. **tezi devete** knigi
 these two-Def book.Pl
 ‘these two books’ (Adapted from Vassilieva (2008: 340))

The same pattern is observed for associative plurals. Associative plurals do not appear with a definite marker ((17)ab). (17)b with the definite marker does not give rise to an associative reading. However, the definite marker may occur with the numeral occurring next to the associative plural as in (17)c. Interestingly, personal pronouns reveal the same pattern as associative plurals (17)d.

- (17) a. **Peš-ov-i**
 Peter-Adj-Pl
 ‘Peter and family’ (associative)
- b. **Peš-ov-i-te**
 Peter-Adj-Pl-Def
 ‘Peter’s relatives’ (non-associative, possessive)
- c. **Peš-ov-i trimata**
 Peter-Adj-Pl three-Def
 ‘Peter and his family, all three’
- d. **nie trimata**
 we three-Def
 ‘us three’ (Adapted from Vassilieva (2008: 340))

As such, in Bulgarian, just like the demonstratives, the associative plurals are capable of licensing a null definite marker, although they allow the numerals following them to occur with the overt definite marker. The associative plurals, more precisely the overtly realized nominals expressing the focal referents, are located at a high position within the nominal structure like the demonstratives. The position is presumably Spec DP.

Thus, the Bulgarian demonstratives, pronouns, and associative plurals all precede numeral quantifiers. In other languages that have associative plurals, including Japanese as in (18), associative plurals and personal pronouns also precede numerals.

(18) Japanese (Hiroko Yamakido p.c., cited in Vassilieva (2005: 39))

- | | | | | |
|-------|---|------------|-----|-------------|
| a. | Hiroko-tati | san | nin | |
| | Hiroko-Pl | three | Cl | |
| | ‘Hiroko and her associates, three in all’ | | | |
| b. ?? | San | nin | no | Hiroko-tati |
| | three | Cl | Gen | Hiroko-Pl |
| | ‘Hiroko and her associates, three in all’ | | | |
| c. | watasi-tati | san | nin | |
| | 1-Pl | three | Cl | |
| | ‘us three’ | | | |
| d. ?? | San | nin | no | watasi-tati |
| | three | Cl | Gen | 1-Pl |
| | ‘us three’ | | | |

Furthermore, there are languages such as Tok Pisin, where the same plural marker is used for both additive plurals and associative plurals; additive plurals follow the plural marker but associative plurals precede it. Compare (13)c, repeated as (19)a and (19)b taken from Vassilieva (2008: 342). She assumes that (19)a has the structure (20)a, and (19)b, the structure (20)b.

- (19) a. pater ol
priest Pl
‘the priest and his congregation’²

Standardly, as observed above, the relation between the focal referent and the group referent seems to express a subset, part-whole relation. The group referent includes the individual referred to by the focal referent. However, as discussed in Vassilieva (2005), this relation could be interpreted somewhat differently depending on the context. First, even if we confine ourselves to the view that focal-group relations fall under subset relations, the interpretation may vary depending on the context. For instance, the Slovenian associative plural *Lankotovi* could be understood as ‘Lanko and his family,’ ‘Lanko and his fellow students,’ or as reference to any other group in which, from the previous discourse, Lanko is assumed to be the most salient representative individual (Lanko Marušič p.c., cited in Vassilieva (2005)). The focal-group relations are somewhat vague, similar to the relations expressed by the possessives, Vassilieva argues. *Mary’s cat*, for example, may designate ‘the cat Mary owns,’ ‘the cat Mary is drawing,’ ‘the cat Mary is supposed to feed,’ and so on. Demonstratives also represent various relations. The demonstrative *that* in *that book* may express spatial distance from the speaker, whereas *that* in *that day* expresses temporal distance. It could also infer some kind of emotional distance as in *there’s that awful man here again*. As such, the relations designated by the possessives and the demonstratives with respect to the modified nominals are not rigid, but vague and often context dependent. Although possessives canonically denote ownership and demonstratives typically express a locational relationship, they leave room for vagueness and context dependent construals. Likewise, associative plurals may typically express part-whole relations; but, this is not a strict requirement; contexts may override it.

Nakanishi and Tomioka’s (2004: 124) view on the relationship between the focal referent and the group is much more non-restrictive. They capture the relationship as that of representation. For example, the DP *Tanaka-tati* (Tanaka-Assoc.PI) denotes a group of individuals who are represented by Tanaka. Tanaka is just representative of the group and he just needs to be *somehow* associated with the group.

Such vagueness and context dependency of the relation between the focal referent and the group referent is crucial for the present study. It may play an important role in capturing the peculiar behaviors of PRO in control shift, if PRO is in fact an associative plural as I propose in this chapter.

5.6. Associative Plural Pronouns

Vassilieva posits a similar structure for the first person plural pronoun such as the English *we* (22). This is a very natural proposal since associatives and person plural pronouns are similar in semantics. Similar semantics may arise from similar structures. Under her analysis, *we* is syntactically represented as the speaker's group. Similarly, the second person plural pronoun can be represented as the addressee's group (the addressee at DP₂) as in (23).

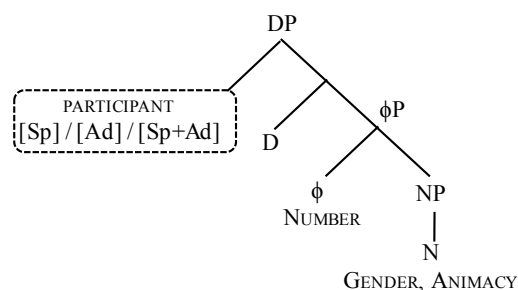
(22) *we*: [DP₁ [DP₂ the speaker] D⁰ [NumP Num⁰+Pl [NP N⁰+human]]]

(23) *you.PI*: [DP₁ [DP₂ the addressee] D⁰ [NumP Num⁰+Pl [NP N⁰+human]]]

Bearing structure (22), *we* denotes a group associated with the speaker just like an associative refers to a group associated with the focal referent. Likewise, *you.PI* designates a group associated with the addressee with structure (23).

Vassilieva's proposal for the internal structure of the first/second person pronouns bears striking resemblance to my proposal in the previous chapter. Observe the following from (56)a, Chapter 4:

(24)



I proposed (24) on the grounds that first/second person pronouns are canonically indexical and that when they are used as indexicals, they bear this structure. When they are used as non-indexicals, they have a reduced structure lacking the DP projection (see (56)b, Chapter 4). PARTICIPANT at Spec DP functions as an index that picks out the speaker and/or the addressee of the relevant context. To capture such indexicality, I proposed (24) based on Harley and Ritter (2002) and Déchaine and Wiltschko (2002, 2009). I assumed that PC PRO has the same internal structure.

The same structure also accounts for *de se/te* construals typically observed in first/second person. In Chapter 3, I proposed that a self-ascriptive property is created by λ -abstraction over the PARTICIPANT element of a DP. PARTICIPANT represented in the left periphery of the DP structure is necessary on these grounds, too. It now appears that the same structure is responsible for the associative nature of first/second person pronouns.

We might want to add one more structure that corresponds to the first person inclusive. This should look like (25):

- (25) *we* inclusive: $[_{DP1} [_{DP2} \text{the speaker and the addressee}] D^0 [_{NumP} \text{Num}^0 + \text{Pl} [_{NP} N^0 + \text{human}]]]$

5.7. Associative Plural PRO

I propose that PRO also involves an associative structure like (22), (23), and (25). This should emerge as a natural proposal. We saw in the previous chapter that PRO and first/second indexical pronouns share the same structure. There seems to be not much more to explain in this section. However, there are some differences. First, there is a technical issue that should be made clear. I argued in the previous chapter that PRO corresponds to the PARTICIPANT part of the embedded subject DP. PRO represents, under my proposal, the moved element at the clausal edge (see (123)b, Chapter 4). As such, strictly speaking, the entire subject DP is not PRO. DP2 in (22), (23), and (25) corresponds to PRO.

The second difference is that PRO will be valued as a shifted PARTICIPANT after Fin agreement. The examples below represent the structures of PRO after Fin agreement:

- (26) $[_{DP1} [_{DP2} \text{PRO: shifted speaker}] D^0 [_{NumP} \text{Num}^0 [_{NP} N^0 + \text{human}]]]$
 (27) $[_{DP1} [_{DP2} \text{PRO: shifted addressee}] D^0 [_{NumP} \text{Num}^0 [_{NP} N^0 + \text{human}]]]$
 (28) $[_{DP1} [_{DP2} \text{PRO: shifted speaker+addressee}] D^0 [_{NumP} \text{Num}^0 [_{NP} N^0 + \text{human}]]]$

Based on Vassilieva (2005, 2008), the above proposed structures amount to saying that the subject of the PC complements has two nominal elements within its structure. One is a nominal, designating the shifted speaker and/or the addressee of a shifted context. This nominal corresponds to PRO. The other is a nominal with non-descriptive group reference. PRO behaves

just like the focal referent in associative plurals. The entire subject DP refers to a group of people inclusive of and contextually associated with PRO.

In a PC construction, such as (29), PRO (DP2) refers to Harry. I have been arguing all through this thesis that the relationship between Harry and PRO is not syntactic. PRO just refers to whoever happens to be the speaker (or the author) of the shifted (i.e. reported) context. Thus, the coindexation in (29) is just for perspicuity. Note that in (29), PRO (DP2) has moved up to the clausal edge. PRO constitutes part of the subject DP1, designating the most salient and representative member of the group of individuals referred to by DP1. Based on pragmatic knowledge, we interpret DP1 to refer to Harry's group. This straightforwardly accounts for the subset relation between the alleged controller (=Harry, DP2) and the subject of the PC complement (DP1). The subject refers to a group inclusive of Harry.

(29) Harry_i preferred [DP2 (PRO_i) [DP1_{i+} to work together on the project]].

This captures the partial relation between the controller and PRO. Note also that the [+human] specification on the N head accounts for the fact that PC PRO is always [+human] or at least [+animate] capable of holding a mental attitude.

Lastly, there is a difference between Vassilieva's analysis for associative plurals and mine for the PC complement subject (DP1). The number specification on Num⁰ is [+PI] for associative plurals, but it is left unspecified for DP1, the PC complement subject in my proposal. The next section focuses on this difference.

5.8. Number Lacking PRO

Moravcsik (2003) and Vassilieva (2005) observe that associative plurals allow both distributive and collective readings. Consider the Hungarian associative plural shown in (30).

(30) Péter-ék (együtt / különböző időben) érkeztek.
 Peter-Assoc.Pl (together / different-at times) arrived
 'Peter and his associates arrived (together / at different times).'

They also show that associative plurals induce plural verbal agreement. However, in some dialects of English, PC PRO allows only collective readings (31).

- (31) % Harry_i preferred {PRO_{i+} to meet each other at six / to become members of the new club}.

Based on this observation, Landau (2000 *et seq.*) has been suggesting that PC PRO is only semantically plural but syntactically singular.

I propose that the above phenomenon of PC is due to non-specification of number on the complement subject (DP1). Observe (32) repeating (26). PRO is indexed to the shifted speaker.

- (32) [DP1 [DP2 PRO: shifted speaker] D⁰ [NumP Num⁰ [NP N⁰+human]]]

In line with my proposal in Chapter 4, I assume that the subject of a PC complement (the DP from which PRO moves out) originates with two minimal specifications. One is PARTICIPANT in Spec DP; the other is the [+human] specification on the N head. The [+human] specification may appear redundant with PARTICIPANT, but without it, the DP may be allowed to refer to a set of apples that the discourse participant owns. Thus, the [+human] on N⁰ seems necessary. However, the subject DP lacks the number feature. This implies that the subject DP quantifies over sets of individuals including singletons and non-singletons.

Typologically, there are languages in the world which have personal pronouns without number specifications (those referred to as *the Sierra-Popoluca* type in Cysouw (2003)); and kind referring singular definites in English (e.g. *the dog*, denoting the kind “dog”) are said to lack number morphology (Leffel (2014)). Contrastingly, nonpronominal associative plurals are morphologically plurals by virtue of appearing with some form of a plural morpheme (*-tati* in Japanese, *-i* in Bulgarian, *ɔl* in Tok Pisin), which is a realization of the number head with the [+PI] feature. Nevertheless, for PC embedded subjects, we could assume that the [+PI] specification is not a prerequisite.

In fact, the idea that PC embedded subjects are underspecified for number becomes crucial in accounting for their very nature. The standard observation is that PC PRO allows both exhaustive and partial readings. I am proposing (32) not only for instances of PC PRO with a partial reading, but for all instances of PC PRO regardless of its exhaustive and partial interpretations. This means that the subset relation we need to capture between the alleged controller and PC PRO (the subject=DP1 in my analysis) is not a proper subset relation; it is a

subset relation inclusive of an identity relation (controller \subseteq PC PRO). Only by leaving number unspecified, can (32) capture this subset relation. For example, in (29), the matrix subject and the embedded subject are said to be in a subset relation, where both an identity relation (an exhaustive reading) and a proper subset relation (a partial reading) are options. (32) accounts for this by saying the embedded subject refers to PRO's group (the shifted speaker's group, or Harry's group); and this group lacks number specification. When it is a singleton, an identity relation holds between PRO (DP2) and the embedded DP (DP1), and this leads to an identity relation between Harry and the embedded DP (DP1), deriving an exhaustive construal. When it is multi-membered, a partial reading obtains.

Recall that in Chapter 4 (section 4.6.3 around (123)), I suggested that T in PC complements agrees with the Spec DP of the subject, but not with the entire subject DP. This may be the reason why PRO lacks number specification. There may not be number agreement between T and the entire subject; T agrees in number only with the Spec DP element.

Note that when the alleged controller is plural, the group can be multi-membered and still give rise to an exhaustive reading as in (33)a, although a partial reading is also an option (33)b.

- (33) a. The students_{*i*} (three students) preferred PRO_{*i*} (three students) to meet at six.
 b. The students_{*i*} (three students) preferred PRO_{*i+*} (five students) to meet at six.

Importantly, in cases like (33)ab, where the controller is plural, distributive predicates may occur in the complement as in (34)ab. However, in cases such as (31) with a singular controller, repeated here as (34)c, distributive predicates are dispreferred by some speakers.

- (34) a. The students_{*i*} preferred PRO_{*i*} to meet each other at six.
 b. The students_{*i*} expect PRO_{*i*} to become members of the new club.
 c. % Harry_{*i*} preferred {PRO_{*i+*} to meet each other at six / to become members of the new club}.

An early observation of (34)c had it that it is mostly unacceptable to the speakers of American English; the speakers of British English tend to accept it (Landau (2000)). The contrast in judgments was linked to the fact that some British English speakers allow plural agreement for collective nouns such as *committee*. However, a recent study (Authier and Reed (2018)) mentions

that even those British English speakers who accept plural agreement with *committee* judge (34)c to be unacceptable. Either way, (34)c constitutes a puzzling phenomenon. Consider more data pertaining to this issue:

(35) Harry_i proposed to Betty_i PRO_{i+j} to help each other.

In a split control construction like (35), a distributive complement is acceptable.⁴ How can my proposal account for this?

My analysis seems to account for the fact that when the Spec DP of the complement subject is plural, a distributive complement is allowed. This is because the complement T agrees only with the Spec DP element in PC. However, the precise mechanism is unclear. This is just a hunch at the moment, but I conjecture that we need some element that functions as a distributor of a nominal phrase (as proposed in Heim, Lasnik, and May (1991)) or an event for licensing a distributive reading. I temporarily assume that D is the distributor for nominal phrases and T is the distributor for events. A nominal phrase may be construed distributively when D or Spec DP is indexed to multiple entities. Likewise, T may allow an event to be interpreted as involving multiple distributed events, depending on some property, for which I currently have no accounts. However, according to Authier and Reed (2018), embedded predicates allowing a partial reading in PC always describe a single atomic event. It may be plausible that T in PC complements somehow lacks the ability to interpret an event distributively. For instance, the predicate *meet* may be construed as one event when it expresses a collective action of multiple individuals. However, the predicate *meet each other* is construed as involving at least two events, in which each individual attempts to meet the other. If T in PC complements lacks a distributive property, as I assume here, then the only way for PC complements to give rise to a distributive reading would be to have a distributive D on the subject nominal. In fact, (34)ab and (35) seem to fall under this case. In (34)ab, under my analysis, the reported context (the students' preferring/expecting something) provides multiple speakers (the authors of preference/expectation). If we presuppose that attitude predicates like *prefer* and *expect* are construed distributively, the reported context already describes multiple events or attitudes held by distinct individuals. At least, a *de se* construal of PRO seems to require distributive individuals to be represented at Spec DP within the subject, which may in turn license distributive D. In (35), Spec DP PRO represents

two distinct individuals, the speaker and the addressee of the reported context. It may license distributive D, allowing distributive predicates to occur in the complement. (36)a is the suggested representation for (35), and (36)b for (34)ab:

- (36) a. [DP₁ [DP₂ PRO: shifted speaker+addressee] D⁰_{distributive} [NumP Num⁰ [NP N⁰+human]]]
 b. [DP₁ [DP₂ PRO: shifted speakers] D⁰_{distributive} [NumP Num⁰ [NP N⁰+human]]]

However, this account needs further consideration. I leave that for future study.

5.9. Consequences: Control Shift

The phenomenon of control shift, which is exclusively observed in PC, also becomes explainable under the present analysis. The basic idea is mainly due to what Vassilieva (2005, 2008) calls *irregular interpretation of the personal pronouns*. Observe (37)a and the syntactic representation of this specific instance of *we* in (37)b.

- (37) a. How are *we* feeling today? (uttered by a doctor to his patients)
 (from Vassilieva (2005: 59))
 b. *we*: [DP₁ [DP₂ the speaker (the doctor)] D⁰ [NumP Num⁰+Pl [NP group]]]

In (37)a, the doctor is not asking about his own wellbeing, but only about his patients'. In associative structures, the focal referent (=the speaker=the doctor in (37)a) may not actually participate in the associated group. The structure instead expresses "the emotional co-involvement" (p.58) of the speaker/focal referent with its associated group. Vassilieva (2005) introduces various examples of this kind such as (38)ab:

- (38) a. Oh, *we*'re in trouble! (as gleefully uttered by Mr. Filch (the caretaker) when he catches a student misbehaving in the movie 'Harry Potter and the Chamber of Secrets')
 b. We won last night! (spoken by a fan)
 (from Vassilieva (2005: 59))

Similar examples are also presented in Harley and Ritter (2002: 507):

- (39) (Individual speaking to a close friend/spouse who is clearly not in a good mood)

Oh-oh, we're in a good mood!

In Chapter 2 (example (88)), we also saw a similar case where a Japanese exhortative example is interpreted somewhat atypically:

- (40) [A school teacher, trying to make her students behave...]

Minna sizukani si-yoo/-masyo.

Everyone quiet do-Exh./-Exh.Polite

'Everyone, let's be quiet.'

The exhortative subject is canonically construed as first person inclusive like the English *we*, but in (40), the subject *minna* 'everyone' does not include the speaker (=the teacher). It refers to the group of students the teacher is addressing. Thus, the speaker does not have to be a member of the group referent in the associative structure (as in (37)b). The speaker may just be emotionally involved with the group.

This way of thinking naturally extends to control shift such as (41)a, taken from Sag and Pollard (1991: 82)), represented as (41)b:

- (41) a. Montana_i was promised (by the doctor_j) [PRO_j (DP2) [DP1_i to be healthy by game time on Saturday]].

b. [_{DP1} [_{DP2} PRO: shifted speaker(=the doctor)] D⁰ [_{NumP} Num⁰ [_{NP} group]]]

Under the standard assumption, *promise* is an agent control predicate. Thus, the embedded subject (DP1_i) in (41)a is predicted to refer to the doctor, but it actually refers to Montana. In the present assumption, PRO (DP2) at Spec DP1 refers to the speaker (=the promiser) of the reported context, which is the doctor (see (41)b). By (41)b, the entire subject (DP1) morphosyntactically refers to the shifted speaker's group, which is interpreted as the doctor's group. However, in this case, the doctor's group is interpreted to refer to Montana. The structure expresses that the doctor is emotionally involved with a certain group, which happens to be a singleton with Montana as its only member. In the last chapter of this thesis, I will provide some more examples of control shift cases (*be-allowed-to* control shift) accountable in a similar way.

Indeed, I am speculating that there is another way to account for sentences like (41)a. Postal (1970a: 475-476) mentions that there are two meanings of *promise*. Consider below:

- (42) a. Harry_i promised Bill_j that he_i would visit Greta.
b. Harry_i promised Bill_j that he_j would visit Greta.

According to Postal, *would* in (42)a expresses the intention of the subject *he* (Harry), while *would* in (42)b indicates prediction about Bill. In Postal's words, *would* in (42)b is construed as "it will come to pass." It may be plausible to conceive of (41)a as an infinitival counterpart of (43), involving the "come to pass" type of *would*.

- (43) Montana_i was promised (by the doctor_j) that he_i would be healthy by game time on Saturday.

Intuitively, when the predicate *promise* is passivized, it seems to denote prediction. Then (41)a may just be an effect of different lexical semantics of the passivized *promise*; but I cannot be conclusive on this issue. I will leave both options open to further study.

5.10. Alternative Accounts

This section provides some discussions on the previous accounts on PC. First, I briefly introduce Boeckx, Hornstein, and Nunes (2010), Rodrigues (2008), and Landau (2016a). Then, I will move on to compare Landau (2015) with the present proposal at length.

5.10.1. Boeckx, Hornstein, and Nunes (2010), Rodrigues (2008), Landau (2016a)

The present proposal contrasts with previous accounts in that it provides an analysis of PC that explains the availability of both exhaustive and partial readings. It does not require any additional mechanisms to allow partial readings. Once you posit an associative structure for PC PRO, both readings fall out naturally. Disambiguating between two readings is left open to intra-sentential and/or extra-sentential contexts. Contrastingly, previous literature has assumed that an exhaustive reading is a default interpretation for PC, and has attempted to provide a special mechanism that makes a partial reading possible, despite the fact that PC is empirically distinguished from EC for having both exhaustive and partial interpretative options. The problem shared by these accounts is that the special partial control mechanism they propose is applied to PC in an *ad hoc* manner.

For example, the null comitative approach proposed in Boeckx, Hornstein, and Nunes (2010) holds that the embedded null subject (=trace under the movement theory) in PC remains both syntactically and semantically singular. A partial control interpretation is brought about by a null comitative (similar to an overt *with* phrase) attached to the complement verb phrase as in (44):

(44) Harry_i preferred [_{TP} *t_i* to meet *pro*_{comitative} at six].

However, it does not explain why the null comitative cannot attach to the same predicate in simple clauses (e.g. **Harry met at six*), and why some predicates not taking a comitative phrase in simple clauses (e.g. *disperse*) allow a partial reading (see Landau (2016b)).

In Rodrigues (2008), a null associative plural morpheme (its overt counterpart being *-tati* in Japanese) adjoins to the subject DP at Spec VP of the complement clause, giving rise to a plural reading. Only the smaller DP then raises to the embedded Spec TP, to the matrix Spec VP, and to its final destination, the matrix Spec TP. The null associative morpheme is stranded within the embedded Spec VP as shown in (45):

(45) [_{CP} C [_{TP} Harry_i T [_{VP} *t_i* preferred [_{TP} *t_i* to [_{VP} [_{DP} associative *t_i*] meet...]

This approach bears some resemblance to the present analysis in employing the notion of associatives, but it does not systematically explain when and why a null associative plural morpheme becomes available. Neither does it explain why distributive readings are not available in PC. Also, partial control is not about a singular controller and a plural PRO; it can happen between a plural controller and a plural PRO as long as a subset relation holds between them.

A null associative morpheme also plays a crucial role in Landau (2016a). Landau assumes that a null associative morpheme is a null affix on little *v* of the PC complement. The affix is null in controlled complements because they lack inflections (they occur as *to*-infinitives). This affixation takes place in LF, not affecting agreement operations, which Landau argues occur in PF. However, again, this proposal does not explain when and why partial control readings are permitted in PC.

In this respect, Landau's (2000) seminal work on PC, the Agree Theory of Control, is much more convincing to me. Landau (2000) argues that partial control is a consequence of agreement mediated by the C head, and agreement for PC is, it is argued, always mediated by C;

this mediation by C makes the semantic plurality of PC PRO invisible to agreement. Thus, under Landau's (2000) framework, partial control, as well as exhaustive control, is always an option in PC, which I take to be the significance of his study. However, it does not specifically account for the part-whole relation between the controller and PRO; it also requires an additional account that explains why the C head makes semantic plurality invisible to agreement.

My proposal in this chapter (and all through this thesis) may appear as though it is putting too much burden on the pragmatics. However, since syntax is normally a very rigid and stringent system, it is more of a challenge, I believe, for syntax to actually leave sufficiently open room for pragmatic interpretative variations. PC in fact requires a system that allows such room. My proposal is an attempt to meet such a requirement. In my system, PC PRO is syntactically very vague: it can refer to a multi-membered group or a singleton; it is also vague as to which specific group of individual(s) it refers to; it suffices if it includes a certain member or a certain set of members within that group. Sometimes, in control shift, even the emotional involvement of a certain individual(s) can count as membership. Overgeneration might be an issue here; I will illustrate in the next chapter (section 6.2) how my system avoids it. Here, simply think of other personal pronouns like *you*. Without context, we do not know whether it refers to a single or multiple individual(s), nor do we know which specific set of individual(s) it refers to. Even the reference of *you.Sg* is indeterminable out of context. *We* may refer to multiple individuals, but it is vague as to whether it refers to *I* and *you*, or *I, you*, and some others, and which set of others are included. So why does PC PRO have to be so *unvague*? This chapter argued for a system in which PC PRO is allowed to be interpreted in a vague manner, but not too vague. It is just as vague as the first and the second person pronouns.

5.10.2. Landau (2015)

I will provide an overview of Landau's (2015) account for PC and compare it with the proposal in this thesis. At first look, his account bears great similarities to the present proposal. The notions of the speaker and the addressee play key roles in both accounts. It goes without saying that some key conclusions arrived at in the present thesis have greatly benefited from Landau (2015). However, the two theories are different in important respects. This section will not be just

an introduction of his theory; through comparing his arguments to mine, I will clarify crucial points of my discussion. My intention here is not to convince readers that my proposal is better than his. It is to show how these two theories are different and that both deserve serious consideration in future study.

5.10.2.1. Is PC OC or No Control?

Landau (2015) focuses on complement control. He first distinguishes between OC complements and no-control (NC) complements. Importantly, his notion of NC should not be confounded with that of NOC (non-obligatory control); the former does not involve control, and hence does not involve PRO, whereas the latter is canonically observed in subject and adjunct clauses having PRO as their subject and giving rise to control effects. NC has a lexical DP or a *pro* subject, which is *not* controlled since it is independently referential (see (46)). Landau (2015) pays attention to complements, which can be either OC or NC excluding raising/ECM complements and small clauses.

- (46) a. Non Control (NC): a lexical DP or a *pro* subject \longrightarrow *no control*
 b. Obligatory Control (OC): a PRO subject, typically in complements
 c. Non-obligatory Control (NOC): a PRO subject, typically in subject and adjunct clauses
- } *control*

Landau (2015) mostly shares with his previous works (Landau (2000, 2003, 2004, 2006, 2008)) in adopting two criteria, [$\pm T$] and [$\pm Agr$], to predict the distribution of PRO, and hence to distinguish OC from NC. Now, consider (47), which is his original (before (2015)) generalization for the OC/NC contrast: OC is defined as the elsewhere case of NC.

(47) *The OC-NC generalization* (Landau (2015: 7))

In a fully specified complement clause (i.e., a clause in which the I head carries slots for both [T] and [Agr]):

- a. If the I head carries both semantic tense and agreement ([+T, +Agr]), NC obtains.
- b. Elsewhere, OC obtains.

Of four possible combinations of [T] and [Agr] values, NC obtains when both are valued +; the other combinations fall under OC, as shown in (48). Note that in this picture, (46)a above corresponds to (48)a, and (46)b to (48)b-d.

- (48) a. [+T, +Agr]: NC
 b. [+T, -Agr]: OC
 c. [-T, +Agr]: OC
 d. [-T, -Agr]: OC

For Landau, a clause is *tensed* or [+T] “if its temporal coordinate need not coincide with that of the matrix clause” (Landau (2015: 5)). His notion of tensedness cuts across the finite/nonfinite divide and the gerund/infinitive split. He tests *tensedness* by temporal modifiers: the embedded complement is [+T] when conflicting modifiers may appear in the matrix and complement clauses ((49)a); the complement is [-T] when that is impossible ((49)b). Both are taken from Landau (2015: 6).

- (49) a. Yesterday, John agreed to join us tomorrow. [+T]
 b * Yesterday, John condescended to join us tomorrow. [-T]

The value for [Agr] is determined by the presence/lack of visible inflection; morphological inflections as in indicative and subjunctive clauses and inflected infinitives are valued [+Agr], whereas no inflection as in English type infinitives and gerunds corresponds to [-Agr]. Under his assumptions, English indicative complements such as (50)a are [+T, +Agr], falling under NC; and the complement in (50)b under [+T, -Agr] OC. English lacks the [-T, +Agr] OC pattern, but some Greek subjunctives such as (50)c and inflected infinitives correspond to this type. Lastly, certain English infinitival complements such as (50)d are subsumed under [-T, -Agr] OC. (50)b-d are from Landau (2015: 8-9).

- (50) a. John hopes [Bill will win the election]. ([+T, +Agr]) NC
 b. Mary_i planned [PRO_i to lock the door]. ([+T, -Agr]) OC
 c. O Yanis kseri na kolimbai (*o Giorgos).
 the John.NOM knows prt swim.3SG (*the George.NOM)
 ‘John knows how (*George) to swim.’ ([-T, +Agr]) OC
 d. Mary_i remembered [PRO_i to lock the door]. ([-T, -Agr]) OC

Landau (2015), just like in his previous studies, splits OC complements ((50)b to d) into two subtypes: those with [+T] are Partial Control (PC) complements; the others with [-T] are Exhaustive Control (EC) complements; so (50)b falls under PC, whereas (50)c,d under EC. The novelty of his new study (2015) is his proposal that the contrast in the T values arises from a deeper distinction: whether or not the complements are in an attitude context. EC complements which force exhaustive control are [-T] since they are nonattitude complements; PC complements which allow both exhaustive and partial control show [+T] effects (as in (49)) because they are attitude complements. He argues that [+T] in PC complements is a byproduct of them being attitude contexts in which the time coordinate is anchored to alternative or nonactual contexts. The facts remain intact regarding the EC/PC split in tensedness, but Landau's new proposal sees the split from a revised perspective; the present thesis significantly benefits from this revision.

The contrast is shown in (51).

(51)	Before Landau (2015)	Landau (2015)
	a. [+T, -Agr]: PC OC	d. attitude complements: PC OC
	b. [-T, +Agr]:	e. nonattitude complements: EC OC
	c. [-T, -Agr]:	
	} EC OC	

He distinguishes attitude complements from nonattitude complements via a *de re/de dicto* ambiguity test of definite descriptions and existence entailments of indefinite DPs appearing inside their domain (see Landau (2015: 18-20)). For instance, an indefinite DP such as *a unicorn* gives rise to infelicity when it appears in nonattitude complements ((52)a), but not when it occurs in attitude complements ((52)b), where they are semantically opaque and do not entail the existence of the indefinite DP (*a unicorn*) in the actual world (Landau (2015: 19)).

- (52) a. # John dared/remembered to ride a unicorn. (nonattitude, EC)
 b. John wanted/agreed to ride a unicorn. (attitude, PC)

The PC/EC distinction is now made on firmer semantic grounds than his former [\pm T] distinction. This new perspective contributes to his new theory of control, *the two-tiered theory of control*, where PC predicates are assumed to introduce the attitude operator with logophoric coordinates representing not only tense but also the speech event participants. In contrast, such operator is not introduced by EC predicates. In Landau (2015), he renames PC as *logophoric*

control, and EC as *predicative control*. He also restates the OC-NC generalization as (53) (compare it to (47)). Nevertheless, his lists of predicates that give rise to EC (predicative control) and PC (logophoric control) remain intact (his lists of EC and PC predicates consist of those in Chapter 1, section 1.10, (60) and (61) excluding those with the star ‘*’).

(53) The OC-NC generalization (restated) (taken from Landau (2015: 20))

[+Agr] blocks control in attitude complements but not in nonattitude complements.

Or:

[+Agr] blocks logophoric control but not predicative control.

Here, I compare Landau’s view on PC to mine. In Landau’s theory, PC PRO lacks [+Agr]. In my system, it bears [+Agr], although my definition of [+Agr] is different from Landau’s as we will see below. Under my proposal, PC PRO is referential for this [+Agr] value, and does not need to depend on an antecedent/controller for its reference; PC PRO is not controlled by a matrix argument; hence PC is reducible to NC. Our very basic assumptions are already different from the outset. The contrast is shown in (54).

(54)	Landau (2015)	Present Thesis
	NC → NC	NC } NC
	PC } OC	PC } NC
	EC } OC	EC → OC

I see a contradiction in terminology in saying that P(artial) C(ontrol) is No Control, but my intention should be clear.

Under Landau’s framework, the values for [Agr] is determined by the presence/absence of overtly realized agreement: when present, [+Agr]; when absent, [-Agr]. As such, the English PC complements appearing consistently in *to*-infinitival forms are valued [-Agr], and never fall under NC. What I have focused on in this thesis is the presence of agreement that is not overtly expressed in some languages including English, but overt in some other languages like Japanese and Korean. Importantly, I do not assume it to be some peculiar agreement processes involving certain languages. The proposed agreement process is intended for all languages, both in PC and NC (see section 4.6, Chapter 4). It plays a crucial role in deriving person

(first/second/third) and the morphological forms (e.g. *I, we, you, he/she, they* in English) of the personal pronouns; and the same agreement process derives PC PRO or the zero-morphology when the subject ends up with certain feature values. These agreement features (e.g. Time^1 , $+\text{Sp}^1$, and $-\text{Ad}^1$) are present in syntax, contributing to the interpretation of PRO. There may be more features involved that I have not considered in this thesis. The important point is that the present thesis does not take lack of overt agreement morphology to be lack of agreement.

In my system, indexical DPs including typical instances of the overt first/second person pronouns, PRO, and even certain realizations of the third person pronouns (*he**) bear the primitive agreement feature values of $+\text{Sp}$ or $+\text{Ad}$ or both. In Japanese (and Korean), they are overtly realized in the force morphology in the same way in both unshifted and shifted contexts. Contrastingly, in English, shifting in time is expressed overtly. For instance, the imperative in unshifted root contexts is realized as *leave* but in shifted contexts *to leave*.⁵

5.10.2.2. Is PRO a Minimal Pronoun?

In Landau (2015), he attempts to generalize predicative control (EC) and logophoric control (PC) as much as possible. Although he calls EC *predicative control*, and PC *logophoric control* under his new proposal, let us continue with the previous names EC and PC for the present purposes. In his framework, both EC and PC fall under OC, and they contrast to NC. He assumes the same lexical entry PRO for both EC and PC. In both types of OC, PRO is a *minimal pronoun* in the sense of Kratzer (2009), devoid of ϕ -features. More precisely, in his definition, a minimal pronoun has unvalued ϕ -features (55).

(55) *A minimal pronoun* (Landau (2015: 23)).

X is a minimal pronoun if and only if $X=[D, u\phi]$.

He mentions that a minimal pronoun X is employed in various derivations including a reflexive, a bound lexical pronoun, *pro*, and a relative pronoun. Their ϕ -values are in a way inherited from their binder (or local agreement in the case of *pro*). Landau argues that minimal pronoun PRO is not a construction-specific entity, but a much more generalizable element at work in a wide variety of linguistic phenomena.

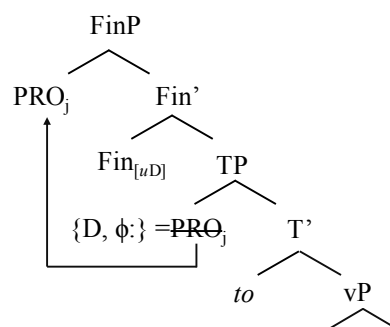
The present thesis shares with Landau the view that PRO should not be a construction-specific element. My previous work (Matsuda (2017b)) also assumed that PRO is a minimal pronoun, which receives the features like +Sp and/or +Ad via agreement. However, the present thesis holds a quite different view. I now assume that PRO originates with the primitive agreement features Sp and Ad; and yet, this assumption does not make PRO a construction-specific element. These are the features shared with the overt first/second person pronouns, and also with the *de se* interpreted *he**. Indeed, under my proposal, PRO, first/second person pronouns, and *he** are indistinguishable when they originate. They receive more specific feature values (e.g. +Sp⁰ or +Sp¹) through agreement with T and Fin, which then contribute to their morphological realizations.

Unfortunately, I am in no position to propose anything about EC PRO. It may be a minimal pronoun just like Landau proposes; but that does not complicate my proposal. In Landau (2015), EC PRO and PC PRO are minimal pronouns while the first/second person overt pronouns are something else. In my proposal, PC PRO and these overt pronouns form one group, and EC PRO plausibly constitutes something else.

5.10.2.3. Property vs. Proposition

Landau (2015) posits that both EC and PC involve predication. He proposes the same structural derivations for both types up to a certain point, FinP. He holds that infinitival complements in OC are clausal, but a clause is turned into a predicate by an operator, which serves as a λ -abstractor; PRO itself serves the role of this predicate forming operator in OC. This is achieved by PRO moving from Spec T to Spec FinP as below.

(56)



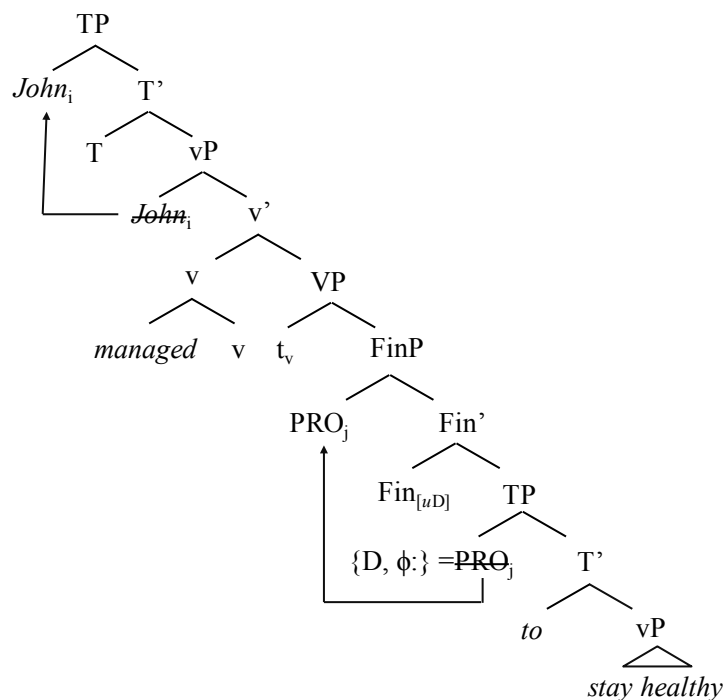
In his system (56), Fin serves the role of a predicative head, or the C head of a relative clause, attracting an operator to its Spec. He posits [*u*D] (uninterpretable D) on Fin; PRO movement to Spec FinP deletes it. PRO bears D for its being a nominal category. A predicate FinP is formed from a clausal TP in both EC and PC this way. Under his system, the subjecthood of PRO is accounted for by the Minimal Link Condition; the closest nominal category, the subject, must be attracted to Fin to check its [*u*D] feature. Up to this point, Landau's proposal and mine are very similar.

First, I need to introduce how Landau derives EC because he derives PC from the EC structure. In EC, the matrix V directly merges FinP as in (57)b, which shows the derivation of EC subject control.

(57) Derivation of EC (Predicative) Subject Control (Landau (2015: 26))

a. John managed to stay healthy.

b.

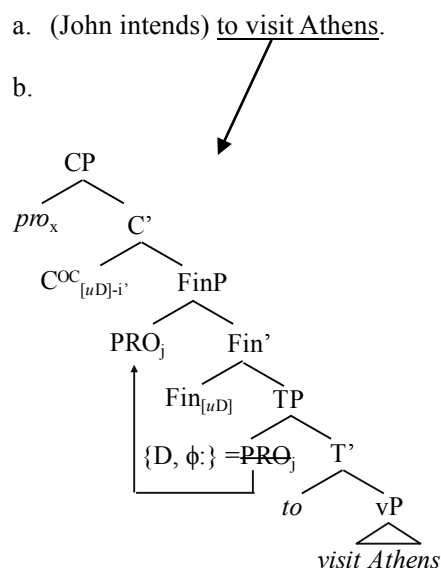


After V moves to v, the subject *John* and FinP come to form a mutual m-command relation, a syntactic relation assumed for predicative relations. The predicate FinP is unsaturated ($\lambda x.x$ stay healthy), but is saturated by the referent of the matrix subject *John*.

Now, I introduce Landau's (2015) analysis for PC. He posits a CP layer, a second tier above FinP, the first tier, presupposed for EC. A special C head, C^{OC} , is merged with FinP, playing the most crucial role in PC; it gives rise to obligatory *de se/te* construal. A close-up picture of the proposed CP complement structure is shown in (58).

(58) A Simplified Structure of PC (Logophoric Control) Complement in Landau

(2015: 44)



C^{OC} carries $[uD]$ just like Fin, requiring a D category for deletion. While Fin attracts PRO to its Spec position for this purpose, C^{OC} projects pro_x to its Spec. Very roughly put, pro_x is a projection of the author coordinate of the shifted embedded context. $C^{OC}_{[uD]-i'}$ hosts the shifted context i' , which consists of a tuple of coordinates $\langle \text{AUTHOR}(i'), \text{ADDRESSEE}(i'), \text{TIME}(i'), \text{WORLD}(i') \rangle$. The context i' is introduced by the matrix attitude predicate via selection of C^{OC} . This proposal is made on semantic grounds that attitude predicates quantify over sets of contexts. Another key property of C^{OC} is that it projects one of its individual coordinates to its Spec position. The author projection is represented as pro_x ; the addressee projection as pro_y . However, C^{OC} does not specify which individual coordinate is to be projected. Such specification falls under another procedure “control module,” which is “not part of the LF of logophoric control structure” (Landau (2015: 45)). Most importantly, pro_x and pro_y are the source of obligatory *de se/te* construal in PC, which is not a property of EC.

It is a virtue of his analysis that *pro_x* in (58) at Spec CP stands in a predicative relation to FinP, just like the matrix subject controller *John* forms the same structural relation to FinP in EC (57). FinP in EC is predicated of the matrix controller argument; parallelly, FinP in PC is predicated of *pro_x*, the author of the embedded context. An important difference between the two types of OC is that the complement is unsaturated and remains as a predicate in EC, but it is saturated by *pro_x* in PC.

Here is a point of divergence between our views. PC complements denote a proposition in Landau (2015), but a property in the present thesis. In my proposal, the Fin head represents the context both in roots and in embedded environments, and both in finite and non-finite clauses whenever they denote an attitude. Crucially, the context tuple must be represented in all roots since they express the attitude of the speaker. As such, I would want to avoid presupposing a special head like C^{OC} to be responsible for the syntactic representation of the context. I agree with Landau in capturing the PC/EC contrast by the presence/absence of a context representing head. However, I am not sure if we really need a C head, specific to OC such as C^{OC} , for PC. We could perhaps make different properties of Fin responsible for the EC/PC distinction; then this opens the way to generalize the syntax of attitudes to all attitude clauses beyond PC complements.

This directly leads to the question of whether PC complements denote propositions or properties. It is for this additional head C^{OC} that PC complements are made into propositions in Landau's proposal. If my understanding of his proposal is correct, then in his system, a proposition at the TP level is turned into a property at the FinP level for EC, but it is turned into a proposition again at the $C^{OC}P$ level for PC. One of the context coordinates on C^{OC} , say AUTHOR or *pro_x*, is projected to its Spec position, and saturates the predicative FinP. According to Landau, this creates a 'perspectival CP' (Landau (2015: 43)). In his framework, non-attitude EC complements denote a property, while attitude PC complements involving *de se/te* construals denote a proposition. This seems to contradict the line of research on *de se* attitudes (e.g. Chierchia (1990), Percus and Sauerland (2003ab), Pearson (2013)) that the present thesis builds on. However, the issue requires much deeper and philosophical considerations, so I cannot be

conclusive about it at this stage. It should be clear though that Landau (2015) and the present study hold opposing views in this regard.

5.10.2.4. Source of *De Se*

Landau (2015) and the present proposal also diverge in what is assumed to be the source of obligatory *de se* construal in PC. Recall that PC requires a *de se* construal but EC does not.

Landau, based on Anand (2006), very clearly describes three paths to *de se* for PRO discussed in the current literature:

- (59) a. PRO is a shifted indexical.
 b. PRO is locally bound by an operator (on a par with logophoric pronouns).
 c. PRO triggers a special *de se* interpretation, which amounts to *de se*.

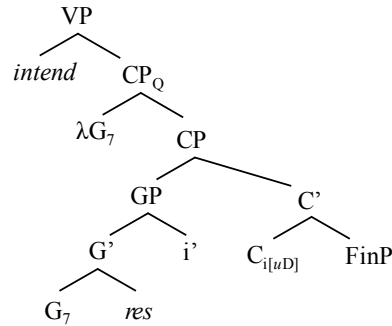
Landau adopts the third path (59)c in which the C^{OC} head imposes the ‘special *de re*’ presupposition of an identity acquaintance relation (Landau (2015: 40)). Contrastingly, the present proposal incorporates the first two paths, (59)a and b.

First, I introduce Landau’s account. He employs a revised version of the acquaintance-based concept generator G, posited in Percus and Sauerland (2003a). For Landau, G is a function from individual-context pairs to concepts. His definition of G is shown in (60).

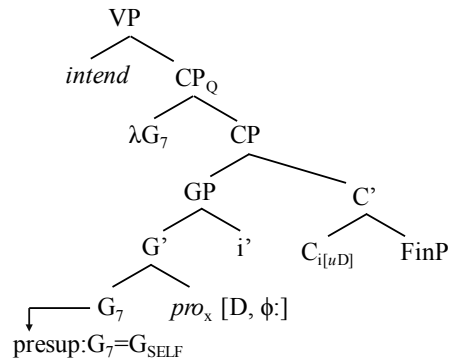
- (60) $[[G]]^{g,c} = \lambda res_e. \lambda i'. \lambda r_e. i(r_e)$: r is picked out by the description G of the *res* for the AH (= the AH’s concept of the *res*) in context i’. (Landau (2015: 41))

G yields the concept, or the description, of an individual for the attitude holder (=the author(i’)) in context i’ under conditions that the attitude holder is acquainted with the individual and that the attitude holder bears some acquaintance relation uniquely to the individual. Under his assumptions, G plays a role both in *de re* cases (e.g. *for*-complements such as *Ralph intended for Betty to join the club*), and *de se/te* cases of PC (as in *John intends to visit Athens*). Only when G is special in that a special presupposition is attached to G as G_{SELF} or G_{THOU}, do *de se/te* construals arise; G_{SELF} or G_{THOU} applies in PC. Compare (61) and (62):

(61) *De Re*: The General Case (Landau (2015: 41))



(62) *De Se*: Special *De Re* (a partial picture of Landau (2015: 44))



In the general *de re* case (61), the attitude complement is a function from concept generators to propositions; in the proposition, the embedded property (FinP) is predicated of the counterpart of the *res* (the individual that the attitude holder bears a unique acquaintance relation to). The counterpart of the *res* in context *i'* is projected as a nominal argument of C (=GP in (61)). Intuitively, the sentence *Ralph intended for Betty to join the club* expresses that there is some unique acquaintance relation between Ralph and Betty under some concept, and the individual picked out by the concept (the counterpart of Betty) joins the club in the context of Ralph's intention.

Landau extends the notion of G to *de se* construals. The simplest way would be to posit a reflexive *de re* belief in which the *res* turns out to be the attitude holder himself; this is possible when G represents a concept the attitude holder holds of himself. However, it obviously does not give rise to an obligatory *de se* reading. It does not exclude the misidentification cases such as when an attitude holder, say John, sees a person on TV, who is in fact John himself, but does not identify the person as himself. Thus, Landau does not take this step. Instead, he

proposes a special G_{SELF} and G_{THOU} which pick out the AUTHOR(i') and ADDRESSEE(i') respectively. Every attitude holder knows himself as the author of his thought; G_{SELF} is presupposed to always generate this concept. G_{THOU} is presupposed to generate the concept that the attitude holder knows of someone as his addressee. As such, G_{SELF} and G_{THOU} are the source of *de se* and *de te* in Landau's proposal. The following are the definitions of G_{SELF} and G_{THOU} by Landau (2015: 42).

- (63) a. $G_{\text{SELF}} =_{\text{def}} G: \forall y \in \text{Dom}(G), G(y) = \text{AUTHOR}$
 $\llbracket G_{\text{SELF}} \rrbracket^{\text{g},c}(z) = \lambda c'. \text{AUTHOR}(c')$
- b. $G_{\text{THOU}} =_{\text{def}} G: \forall y \in \text{Dom}(G), G(y) = \text{ADDRESSEE}$
 $\llbracket G_{\text{THOU}} \rrbracket^{\text{g},c}(z) = \lambda c'. \text{ADDRESSEE}(c')$

A question arises as to what forces the choice of these special Gs, G_{SELF} and G_{THOU} . He holds that it comes from C^{OC} indicated as $C_i[{}_{i'}D]$ in (62). For Landau, GP in (62) is just a *de re* variable bound by the controller; but due to G_{SELF} or G_{THOU} , which is 'triggered by C^{OC} ' (Landau (2015: 43)), a *de se* construal arises. In other words, he assumes C^{OC} that comes with G_{SELF} or G_{THOU} to be the source of *de se* (or *de te*). It does not derive from the matrix attitude predicate, the main reason being that the same predicate does not always give rise to *de se* ascriptions.

This thesis agrees with Landau (2015) in assuming that *de se/te* construals do *not* derive from the matrix predicate. Under my proposal, however, the source of *de se/te* is not C^{OC} , but the speaker/addressee representations within PRO. In a way, G_{SELF} and/or G_{THOU} come attached to PRO. This sounds stipulative, but typical instances of the first and second person pronouns structurally represent the same elements; so they are not special properties of PRO. In my system, Fin, just like Landau's C^{OC} , hosts the logophoric center representing the context. Roughly put, PRO (PC PRO) corresponds to cases where the speaker/addressee PARTICIPANT node inside the subject DP agrees with the shifted Fin (or iLC=internal Logophoric Center); the overt first/second person pronouns correspond to cases where the same node agrees with the unshifted Fin (or eLC=external Logophoric Center). See (56)a of Chapter 4 or (24) of this chapter for my analysis of the internal structure of indexical pronouns including PC PRO and the first/second person pronouns. The Fin-subject agreement determines whether the speaker/addressee

representation inside the subject designates the speaker/addressee of the utterance context or the reported context. For *de se/te* interpretations, the PARTICIPANT node of the subject DP moves to Spec FinP for abstraction to create a property. Note that the iLC Fin is not a special property of PC. It is represented in attitude clauses including finite *de se* attitude clauses containing *he**. In Landau (2015), C^{OC} is a special complementizer for PC complements, and G_{SELF} and G_{THOU} are devices triggered by C^{OC} . The difference in our views should be clear. In my proposal, the source of *de se/te* is generalizable to other *de se/te* inducing pronouns, but in Landau's theory, it is described as something specific to PC PRO.

In Landau (2015), the shifted indexical approach (59)a and the operator binding approach (59)b to *de se* are denied for various reasons. My proposal is a mixture of these two, but only in essence; so most of Landau's (2015) objections do not apply. First, Landau rejects the indexical shift approach for it requires two lexical entries of PRO, one corresponding to the first person pronoun like *I* and the other the second person pronoun like *you*; but in my proposal, there are no lexical entries for PRO. For instance, all indexical pronouns with the speaker feature enter the derivation with the same internal structure and features. They just turn out to be first person or PRO, or even in some cases third person (as in *he**) as discussed in the previous chapter (section 4.6, Chapter 4).

Second, he mentions that indexical shifting is cross-linguistically rare. However, it seems to be a wider-spread phenomenon than originally thought. Deal (2017) shows that it has been observed in quite a number of languages. However, the crucial point for my proposal is not how wide the phenomenon is. In the previous studies on indexical shifting (Anand and Nevins (2004), Anand (2006), Schlenker (1999, 2003ab)), the focus is placed on how those pronouns with the first person *morphology* shift their interpretation under the reported speech/attitude context via overwriting of a context parameter or manipulation of a context variable. However, under my proposal, the context is assumed to shift for reported attitude complements even when the first/second person shift does not take place. I assume context-shifting even in English finite attitude complements; the shift is not overtly observable, but it certainly plays an important role in interpretation. What shifts in my system is not the first/second person pronouns, but the primitive notions of the speaker and the addressee. For instance, consider (64):

(64) a. Speaker(c*), c* the utterance context

b. Speaker(c¹), c¹ a reported context

Both (64)ab designate the speaker of the relevant context; but in English, (64)a is pronounced as *I* but (64)b is pronounced as *he* when the Time coordinate is anchored to the actual utterance context but the speaker/addressee coordinates are shifted (or involves the null subject PRO when the Time coordinate is also shifted). Contrastingly, in Zazaki for example, both (64)ab get the realization *mi*. In the proposed framework, the speaker shifts both in English and Zazaki in attitude complements regardless of the morphology. As such, context-shifting is not a special phenomenon involving a small number of languages.

Third, Landau denies the shifted indexical view concerning its selectivity and optionality. He mentions that in Slave, the first person pronouns always shift under the predicate ‘say’ but the shift is optional under ‘want’; the second person pronouns never shift under the same verbs; however, under the predicate ‘tell,’ both the first and second person pronouns may optionally shift (Landau (2015: 36-37)). These examples of selectivity and optionality are at least compatible with my proposal. It amounts to what types of clauses each predicate selects (see (33) and (89) of Chapter 2). I speculate that the Slave ‘say’ might mean something closer to the English *intend*; then it would only take an intensitive clause where only the speaker shifts. The fact that Slave ‘want’ gives rise to optional shifting is understandable, if we think about the English *expect*. It takes various types of complements. Recall (72) in Chapter 1 repeated here as (65):

(65) a. John expected Mary_{obj} [PRO to leave].

b. John expected [_{for} [Mary_{Subj} to leave]].

c. John expected Mary [t_{Subj} to leave].

Perhaps, Slave ‘want’ corresponding to (65)b does not require context shifting. Also, the fact that the Slave ‘tell’ allows the second person optional shift is very supportive of my view. The predicate may semantically correspond to the English *say* (or *tell* as in storytelling) in some contexts but to *order* in others; and the latter cases may involve imperative embedding with the addressee shift. All these are just speculations and require confirmation, but the facts concerning selectivity and optionality at least do not constitute obvious counterevidence to the present proposal.

The fourth reason Landau denies the indexical approach comes from the already discussed problem concerning a sentence like *John planned PRO to promote himself/*myself*, where PRO does not seem to bear the first person feature. However, again, context-shifting is not about first person shifting, but about speaker shifting. As such, PRO may be third person and still bear the shifted speaker feature. The sentence above is not problematic for the present thesis (see 4.6.2, Chapter 4). However, admittedly, PRO appearing with the first person reflexive as in the sentence *You told me to behave myself* is not readily accountable under the present framework (see section 4.6.5, Chapter 4 for some discussions).

Landau's (2015) reasons for rejecting the shifted indexical approach mostly do not apply to this thesis. More problematic for taking this approach indeed involves whether shiftiness and some logophors that I subsume under shifted indexicals necessarily bring about *de se* construals. Recent studies including Pearson (2013) and Deal (2017) show they do not. In some contexts, they give rise to a *de re* construal. I assume that just being a shifted indexical is not sufficient for obligatory *de se* readings. The situation is comparable to the first person pronoun *I* not necessarily giving rise to direct *de se* readings (see 3.8, Chapter 3). The speaker/addressee node of the shifted indexical needs to move to the clausal edge for abstraction to be read *de se/te*. In this sense, my proposal incorporates the view of the operator approach (59)b of Chierchia (1990). Landau (2015) also partially adopts this approach, perhaps not for deriving *de se* construals, but for creating a predicative FinP from a propositional TP. He only denies (59)b for equating PRO to logophors in various languages. I agree with him that PRO is not the exact counterpart of logophors; we are not sure about the precise nature of the so-called logophors. I only propose that both PC PRO and some instances of logophors involve indexical shift and the abstraction of the shifted indexical. Landau's (2015) objections to the operator approach do not seem to apply to my proposal (but see Landau (2015: 37-39)).

5.10.2.5. Is PRO Bound to the Matrix Argument?

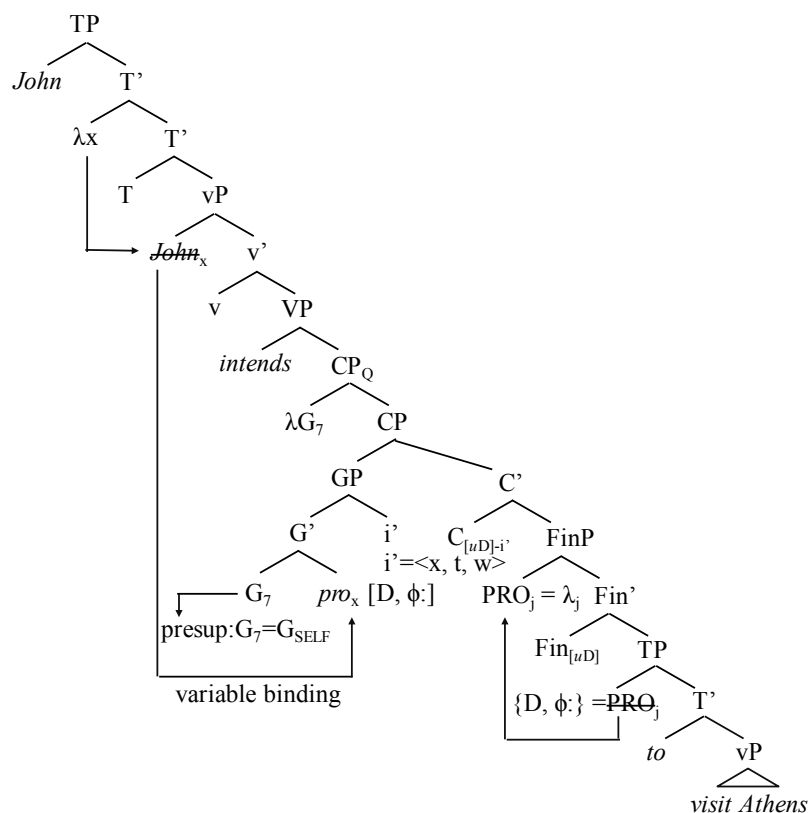
Lastly, the most notable contrast between Landau (2015) and the present study is seen in assuming whether PRO (*pro_x* or *pro_y*) is syntactically bound to the matrix argument. Landau

(2015) says yes; the present study no. For completeness, I present Landau's entire derivation for PC.

(66) Derivation of PC (Logophoric Control) (Landau (2015: 44))

a. John intends to visit Athens.

b.



For Landau, although pro_x and pro_y designate the author coordinate and the addressee coordinate respectively of the attitude context, they are still minimal pronouns. It is important for Landau that they are syntactically bound to the matrix argument for many reasons, but mainly because PRO seems to agree with the controller argument in ϕ -features as in the sentence *John planned PRO to promote himself*myself*. Under (66), controller-PRO agreement is ensured by the movement from SpecTP to FinP; by predication between FinP and pro_x ; and by a variable binding relation between pro_x and the matrix controller argument. He argues that the agreement via binding (pro_x -controller) takes place at PF, in line with the proposal set forth in Heim (2008) and Kratzer (2009) for variable binding. He intends to capture the fact that although agreement in variable binding is sometimes semantically vacuous, morphological agreement is necessary to

ensure the binding relation. For instance, he compares his argument to the sentences (67)ab, similar to those in Partee (1989) and Kratzer (2009). In these sentences, it is at least assumed that the person feature of *my* is not interpreted in LF, but morphological agreement must hold between *I* and *my* to at least allow a variable or sloppy reading. In (67)c, the variable reading is allowed with *his* but not with *your*; allegedly, this is because the relative pronoun *who* bears both first person and third person (or no person). The third person possessive *his* may be bound to *who* but not the second person possessive *your*.

- (67) a. Only I did my homework.
b. I am the only one who takes care of my children.
c. I am the only one who takes care of his/your children.

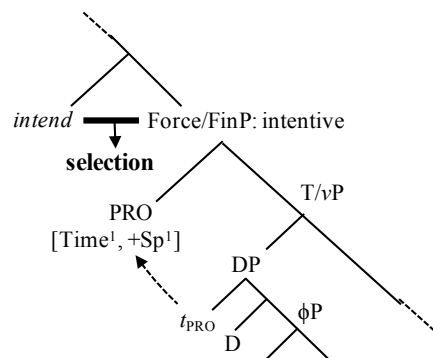
Landau assumes that ϕ -features of PRO are not necessarily interpreted in LF, but its PF agreement is crucial for its bound variable reading.

I cannot agree more with him that agreement takes place in PF; but not for variable reading purposes. In my system, all morphological realizations of agreement are inserted late in PF. However, the present thesis holds that a syntactic relation between PRO and the controller is dispensable.

As a matter of fact, the shifted indexical approach and the local operator approach have often been viewed as problematic for not necessitating any syntactic relations between PRO and the controller; if there is no syntactic relation between them, how can the agreement facts be accounted for? This is an important issue that deserves serious consideration, and Landau (2015) directly tackles this problem; his proposal has an advantage in this regard. My framework needs further development for this issue (see section 4.6.5, Chapter 4 for relevant discussions). However, what I have been arguing all through this thesis is that no direct syntactic relation is a good thing for other properties of PC. In Landau's system, strict OC cases can be accounted for, but all these PC effects of implicit control, split control and partial control are not readily explainable if we presuppose binding of pro_x/pro_y by the matrix argument. My system only assumes that a selectional relation holds between the matrix predicate and the clausal complement as in (68). The features on PRO derive from the complement subject and its agreement with T and Fin (see (109) and (123) in Chapter 4 for details). PRO with these features

defines the complement force as intensive in this case; a selectional relation holds between the matrix predicate (e.g. *intend*) and the complement force.

(68)



In Chapter 3, in the present thesis, it was shown that there are two kinds of sloppy readings: one is *de re* and the other is *de se*. The two involve distinct LFs, which I take to imply two syntactic structures. PC PRO corresponds to those that give rise to a *de se* sloppy reading, the mechanism of which I developed in Chapter 4. The syntactic mechanism that derives PC PRO is almost the same as that of deriving the indexical *de se* first and second person pronouns in languages like English. In effect, for instance, the first person exclusive pronouns restrict their reference to the set of sets of individuals inclusive of the speaker but exclusive of the addressee in the utterance context. This is precisely what happens for PC PRO in the shifted context. In sentence (66)a for instance, PRO restricts its reference to the set of sets of individuals inclusive of the speaker/author but exclusive of the addressee in the context of someone's intention. The syntax does not have to see that the speaker/author is John. It only sees it as *whoever the speaker happens to be* in the relevant context, the context of the event described by the matrix predicate. PRO in split control has the structure and the PARTICIPANT specification comparable to the first person inclusive. Implicit control is not problematic because PC PRO does not need an antecedent. I will provide more discussions on this in the next chapter. The basic logic behind my proposal is this: if the first person pronoun *we* does not require an antecedent, why should PC PRO?

Imagine a sentence like (69) written on a piece of paper, or perhaps in someone's journal. You do not know whose journal it is and have no idea as to who wrote it, when, and where.

(69) We left early in the morning.

Lacking any information of the journal author, you could still interpret the sentence properly: a set of individuals inclusive of the author left on some morning before the time of the utterance (writing) context. (69) involves the eLC representation like (70) (abstracting away from the location coordinate).⁶

(70) Fin eLC $\langle \text{Sp}^0, \text{Time}^0 \rangle$ [TP We $\langle \text{+Sp}^0, \text{Time}^0 \rangle$ left early in the morning].

You may not know the name of the author, what he/she looks like, how old he/she is, or whether he/she is a male or female for this particular example. You do not have to be acquainted with the author of (69) to interpret its meaning: *we* includes whoever the author is. Also, the past tense of the verb *left* is interpreted relative to the time of writing; a time point before the time of writing whenever that is.

We in (69) does not have an antecedent that binds it, but that does not prevent us from interpreting the sentence properly. *We* is an unbound free variable, and so is PC PRO (see section 4.2, Chapter 4); its interpretation arises from inside, not from any other arguments serving as its antecedent.

Having said all this, I have a point to emphasize before I leave this chapter. Landau's proposal and mine are essentially similar in assuming that the shifted context and the shifted speaker/addressee play an important role in PC. My system builds not only on Landau (2015) but on all his contributions made in the past two decades. The present thesis is an attempt to account for PC effects which have drawn linguists' attention due to Landau. It is devoted to explaining these effects in a generalizable way, based on the view of Landau that PC is structurally distinct from EC in allowing them.

Chapter 6. Conclusion: Summary and Consequences

6.1. Summary

The main goal of the present thesis was to account for the connection between obligatorily *de se* construals and availability of partial readings in PC. EC lacks these properties. I proposed that they both arise from the person system available in human language. The key is to see the primitives of the person system: the notions of speaker and addressee playing active roles not only inside nominal phrases but also in clausal syntactic derivations.

Previous literature has proposed that some notions of discourse participants are represented in the clausal left periphery (Speas and Tenny (2003), Sigurðsson (2004ab, 2010)). There have also been suggestions that the participant notions are represented within pronominal structures; the works of Harley and Ritter (2002) and Déchaine and Wiltschko (2002, 2009), which I drew on in the discussion, have contributed greatly to this area of study. The present thesis focused on the interactions of the participant representations in the clausal structure and those in the nominal structure. Various puzzling phenomena observed in PC such as partial control, implicit control, split control, and control shift seem to fall into place if we pay closer attention to such interactions.

Chapter 2

A strong piece of evidence that has led me to this idea comes from Japanese. Certain force morphologies which restrict the reference of the subject also appear in the complement clause of predicates semantically comparable to the English PC predicates, including *hope*, *decide*, *order*, *promise*, and *propose*. This was the main topic of Chapter 2. When they occur in roots, they impose restrictions on the subject to include the speaker and/or the addressee of the speech context. For instance, the imperative suffix *-e/ro* on the verb restricts the subject reference to the addressee or a group of individuals inclusive of the addressee. Intriguingly, the same suffix appears in the complement embedded under the predicate *meireisuru* ‘order.’ However, when it occurs in an embedded context, it does not restrict the subject reference to be inclusive of the

addressee of the speech context; the embedded subject typically refers to the addressee of the reported speech expressed in the matrix clause. A canonical example is (1), repeating (9) of Chapter 2.

- (1) Tokiko_r-wa Takuya_j-ni [PRO_j daigaku-e ik-e-to] meireisi-ta.
 Tokiko-Top Takuya-Dat [university-to go-Imp-C₁₀] order-Past
 ‘Tokiko ordered Takuya to go to university.’

Also, very suggestive in the Japanese data was the correlation between the distribution of these force suffixes and controller choice. When the complement predicate occurs with the optative suffix *-tai*, subject control is observed. Likewise, the promissive and intensitive suffixes appear in subject control complements, the imperative suffix in object control complements, and the exhortative suffix in split control complements. These morphological realizations apparently play an important role in controller determination.

Such an observation led me to the idea that it is not the matrix predicate that determines controller choice, as has been traditionally assumed (Farkas (1988), Jackendoff and Culicover (2003)). It appears that the choice has already been made in the complement clause when the matrix predicate merges. In roots, the relevant Japanese morphologies determine the subject reference without the help of a higher predicate; the same should apply to embedded contexts. Even though these force realizations do not determine the precise reference of the subject, they do determine that *whoever the speaker/addressee is* in the relevant context is included in the reference. This exactly patterns with the English first and second person pronouns; in this sense, I argued that PRO is no more or less referential than the first/second person pronouns. Based on this assumption, I proposed that the reference of PRO is not dependent on the matrix argument; the alleged controller in fact does not *control* PRO. They often happen to corefer because the controller argument often designates the speaker or the addressee of the reported context, but the coreference is not a consequence of a syntactic relation; it arises from a pragmatic relation. If PRO were so referentially dependent on a higher argument, why does PC allow implicit control?

- (2) Mary_i was on alert. John had signaled PRO_i to position herself_i behind the door.

(Adapted from Sag and Pollard (1991: 93))

I see that the coreference between Mary and PRO is a pragmatic one. Yet, we interpret PRO as referring to Mary since it is syntactically specified to refer to the addressee of the reported speech act (i.e. signaling).

In the present framework, controller determination amounts to semantic selection between the matrix predicate and the force of the complement. In such selectional relations, selection applies both ways; as much as matrix predicates select complement force, complement force selects cooccurring predicates. Think of the compatibility of *drink* and *water*, for instance; *drink* may select liquid objects, but *water* may also select a range of predicates semantically compatible with it, excluding such predicates as *eat*.

Chapter 3

One problem arose in implementing this line of thought to a syntactic theory. Semantic analyses of imperatives, promissives, and exhortatives such as Portner (2004, 2007) view that they denote a property, not a proposition. (3) is Portner's (2007) denotation for the imperative *Sit down!* It quantifies over world-individual pairs.

$$(3) \quad \llbracket \text{Sit down!} \rrbracket = [\lambda w. \lambda x : x = \text{addressee}_C. x \text{ sits down in } w]$$

(Portner (2007: 358))

Yet, most syntactic approaches I was familiar with conceived of PC complements as denoting a proposition. Assuming a null subject PRO in the complement meant it had a clausal structure; and I assumed, then, that a clausal structure directly implicated a propositional denotation.

However, I came to realize, mostly due to Chierchia (1990) and Percus and Sauerland (2003ab), that even a clause with an overtly realized subject could denote a property. Being clausal does not entail a propositional interpretation. In Chapter 3, I developed my argument based on this line of thought. It turns out that being a property is the source of *de se* construals. The problem in viewing PC complements as bearing imperative-like forces became strong support for the obligatory *de se* or *de te* nature of PC PRO at this point. Because PC complements are imperatives, they denote a property *and* require a *de se/te* interpretation. The same reasoning extends to promissives, exhortatives, intentives, and optatives.

How does a full clause with a subject and a predicate manage to denote a property? This is a question also dealt with in Chapter 3. The focus is now on Castañeda's *he**. The contrast between PRO in control complements and *he* in finite embedded clauses has often been emphasized in the literature. Recall two examples, from Morgan (1970: 380), I introduced in Chapter 1:

- (4) Ernie Banks_i hopes that he_i will move to New York.
 (5) Ernie Banks_i hopes PRO_i to move to New York.

Although (4) is ambiguous in bringing about both *de se* and *de re* readings, (5) is unambiguous, and obligatorily gives rise to a *de se* reading. This is, without question, one of the most important discoveries in the research of control. However, because the contrast drew too much attention, the common property shared between the above two constructions, or between PRO and *he*, has often been placed outside the focus. Crucially, both PRO and *he* give rise to a *de se* reading. Simply put, we seem to have two *hes*: one gives rise to *de se*; the other *de re*. The distinction had already been clearly presented in the classical works of Castañeda (1966, 1967ab, 1968). *De se* inducing *he** bears strong similarity to *de se* inducing PRO.

Distinct readings associated with *de se he** and *de re he* are attributed to structural difference in Chierchia (1990) and Percus and Sauerland (2003ab). Chierchia posits an operator, a λ -abstractor over the subject, in the left periphery of the embedded clause, which binds *de se he**; no such operator is present for *de re he*:

- (6) a. John_i hopes [Op_i that he_i will win the election]. (*de se he**)
 b. John_i hopes [that he_i will win the election]. (*de re he*)

The operator plays a key role in property formation. It creates a property out of a proposition, allowing the clause to quantify over world-individual pairs. Chierchia proposes that PRO patterns with *de se he** in being bound to this operator. *De se* readings of *he** and PRO arise from a similar structure.

- (7) John_i hopes [Op_i PRO_i to win the election].

Building on Chierchia, Percus and Sauerland (2003ab) assimilate the behavior of *de se he** to a relative pronoun; it moves to the clausal edge at least in LF. Contrastingly, *de re he* remains in-situ and directly bound to a matrix argument. They suggest that PRO is also relative

pronoun-like; PRO moves to create a property. The present thesis employs this idea. PRO is a covert version of the relative pronoun *who*.

An issue remained regarding the distinction between *de se* and *de te*. If there is only one matrix argument as in the case of *hope* in (7), the created property could simply be ascribed to the reference of that argument. However, if the matrix predicate is a ditransitive and projects multiple arguments as in *promise* and *order*, how do we know which argument the property should be ascribed to? In the system of Chierchia (1990) and Percus and Sauerland (2003ab), the operator or the moved relative pronoun (including PRO) is said to be bound to the matrix argument. In my framework, a binding relation between the matrix argument and PRO has been denied in Chapter 2. Instead, PRO somehow refers to the speaker and/or the addressee of the reported speech context. The issue reduces to how distinctions between these speech participants are represented morphosyntactically.

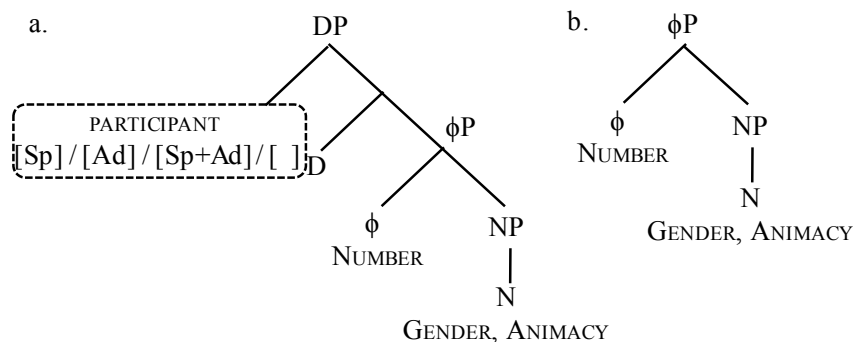
Chapter 4

The English first and second person pronouns are canonical indexicals in that their reference includes either or both of the speech participants, and their semantic values are determined by the context of speech. PRO also bears such indexicality. I sought for the common denominator responsible for the indexicality of the first/second person pronouns and that of PRO.

The first half of Chapter 4 explored the structure inside personal pronouns. Harley and Ritter (2002) propose that only the first/second person pronouns involve the highest PARTICIPANT projection, which is responsible for their deictic nature. Déchaine and Wiltschko (2002) suggest that pronouns that resist binding bear a larger structure (DP) than those that allow it (ϕ P). They first argued that the English first/second person pronouns are non-bindable DPs, and the third person pronouns are bindable ϕ Ps; but their later work (Déchaine and Wiltschko (2009)) revises this idea and proposes that, even in English, the first/second person pronouns may be bound and the third person pronouns may be used indexically. Neither are inherently indexicals nor bound variables. From these observations, I proposed the following framework for personal pronouns. They have a structure like (8)a when they behave as indexicals, and (8)b,

when they are bound variables. Crucially, DPs with [Sp] may be first or third person. The specification on the PARTICIPANT alone does not determine person.

(8)



A conclusion, at this point, is that PRO shares the structure (8)a with overt indexical pronouns. That is the source of its indexicality.

The second half of Chapter 4, considered indexicality from a different angle. The focus was placed on indexical shifting, observed in various languages, including Amharic from Schlenker (1999, 2003ab).

(9) John Jägna nāNN yt-lall.
 John hero I-am says-3 sg.m

- a. ‘John_i says that he_i is a hero.’
- b. ‘John says that I am a hero.’ (*I* referring to the speaker of the entire utterance.)

Lit. ‘John says I am a hero.’ (Adapted from Schlenker (1999: 21))

In Amharic, the first person pronoun can be used to designate either the speaker of the actual speech context or the speaker of the reported speech context; (9) gives rise to ambiguity, (9)ab. In contrast, the English first person pronoun only refers to the speaker of the actual speech context. English is often considered to be a non-indexical shifting language.

However, I see the picture quite differently. Inasmuch as the English *he* semantically corresponds to Amharic *I*, in reading (9)a, there is a speaker element in *he*, and that element has shifted in the complement of the predicate *say*. In the structure in (8)a, this element is represented at Spec DP. I proposed that indexical shifting also takes place in English. The difference between

Amharic and English reduces to how this shifting is expressed in PF. In English, shifting is expressed overtly; in Amharic, it is covert. Instead, in Amharic, (non)indexicality is phonologically distinguished; in English, it is indistinguishable.

(10)

	unshifted/actual speaker indexical	shifted speaker indexical	non- indexical
English (pronoun)	<i>I</i>	<i>he</i>	<i>he</i>
Amharic ('be' agreement)	<i>näNN</i>	<i>näNN</i>	<i>nāw</i>

PRO has been assimilated to shifty indexicals in the previous literature. This view was criticized for the fact that PRO does not bear first person (Landau (2015)). Consider (11)a which reports John's plan expressed as (11)b.

- (11) a. John_i planned [PRO_i to promote himself_i/*myself].
 b. John planned: "I will promote myself."

(Landau (2015: 37))

However, in my framework, the speaker indexical may be expressed in third person in English. PRO parallels the shifted speaker indexical *he*.

The last question in Chapter 4 considered how person is determined in syntax. I assumed that nominal elements originate with the primitives of person, the speaker and addressee features. Person is determined by complementizer agreement. Building on the notions of *Logophoric Center* (Bianchi (2001, 2003)) and *A-matching* (Sigurðsson (2004ab, 2010)), I proposed that the Fin head represents a tuple of coordinates which defines the context of speech (or thought). The tuple at least consists of person coordinates (speaker and addressee) and a time coordinate; I presupposed two types of Logophoric Centers, external Logophoric Center (eLC) and internal Logophoric Center (iLC) following Bianchi (2001, 2003). Essentially, eLC corresponds to unshifted contexts, and iLC to shifted contexts.

- (12) [Fin eLC $\langle \text{Sp}^0, \text{Ad}^0, \text{Time}^0 \rangle$ [TP ... [Fin iLC $\langle \text{Sp}^1, \text{Ad}^1, \text{Time}^1 \rangle$ [TP ...]]]].

DPs in the unshifted context agree with Fin_{eLC} (via T agreement). As a result, they get their Sp/Ad features valued. DPs with an Sp feature are valued as [+Sp⁰]; they also bear a Time feature

by T-agreement, which is marked Time^0 via Fin agreement. The result is as in (13); the first pronoun *I* or *we* is inserted to these value combinations.

(13) $[\text{Time}^0, +\text{Sp}^0, -\text{Ad}^0]$ -> 1st person: *I, we*

Similar agreement operations take place in reported contexts with Fin_{iLC} bringing about the following feature values.

(14) $[\text{Time}^1, +\text{Sp}^1, -\text{Ad}^1]$ -> 3rd person: PRO

As for the overt speaker indexical *he*, partial shift takes place in Fin_{iLC} . Only person coordinates shift (Sp^1, Ad^1); the Time coordinate does not (Time^0). Speaker indexicals within the scope of such partially shifted Fin result in (15).

(15) $[\text{Time}^0, +\text{Sp}^1, -\text{Ad}^1]$ -> 3rd person: *he/she* or *they*

PRO (14) and *he* (15) are minimally distinct in $\text{Time}^{0/1}$ values, resulting in covert vs. overt contrast. *He* (15) and *I* (13) are minimally distinct in $\text{Sp}/\text{Ad}^{0/1}$ values, bringing about different person realizations in English. In Amharic, (15) and (13) are realized with the same morphology. In the proposed framework, PRO could be a shifted speaker indexical and bear third person; (11) is not problematic.

One last step is to create a self-ascriptive property out of a full clausal structure. The PARTICIPANT node at Spec DP of indexical pronouns (as in (8)a) moves up to the clausal edge for this purpose. This movement in effect defines the clausal force. An s-selectional relationship holds between the matrix predicate and the force defining PRO at the clausal edge.

Chapter 5

Chapter 5 saw that PRO being an indexical and sharing the same internal structure with the first/second person pronouns accounts for the availability of partial readings in PC. This view provides a solution to the main question posed for this thesis.

(16) What accounts for the tight connection between obligatory *de se* construals and availability of partial readings in PC?

Partial readings in PC are comparable to associative semantics typically observed in the first/second person pronouns. For instance, as for first person, a subset relation holds between the speaker and their reference; a subset relation also holds between the alleged controller and PRO.

(17) Reference set of speaker(s) \subseteq First person reference set

(18) Reference of the controller \subseteq Reference of PRO

Vassilieva's (2005, 2008) works help clarify the nature of associative plurality. She draws on non-pronominal associative plurals in the world's languages and proposes that there are two nominals represented in them: one nominal has a non-descriptive [+human] group reference; the other is a *focal referent* that represents the most salient member of the group.

(19) $[_{DP1} [_{DP2} \text{focal referent}]_i D^0 [_{NumP} \text{Num}^0 + \text{Pl} [_{XP} t_i [_{NP} N^0 + \text{human}]]]]]$

(Adapted from Vassilieva (2008: 239))

Based on this proposal, she contends that the first/second person pronouns are structurally similar to non-pronominal associative plurals. For instance, the English first person plural pronoun *we* has the following structure.

(20) *we*: $[_{DP1} [_{DP2} \text{the speaker}] D^0 [_{NumP} \text{Num}^0 + \text{Pl} [_{NP} N^0 + \text{human}]]]$

This looks similar to the structure of indexicals suggested in Chapter 4. In the present framework, PRO is conceived of as a Spec DP element of a shifted indexical. Adopting the structure (20), PRO falls into the position of the speaker.

(21) $[_{DP1} [_{DP2} \text{PRO: shifted speaker}] D^0 [_{NumP} \text{Num}^0 [_{NP} N^0 + \text{human}]]]$

PRO constitutes the focal referent part of the larger DP (DP1); PRO (DP2) is the most salient or representative member of the non-descriptive human group. This accounts for the availability of a partial reading in PC as in (22).

(22) a. John_i wanted $[\text{PRO}_{i+}$ to work on the problem together].

b. John_i wanted $[\text{DP2}_i [\text{DP1}_{i+}$ to work on the problem together]].

A PC example is standardly represented as (22)a, but we could now see it as (22)b; DP1 and DP2 correspond to those in (21). DP2 (i.e. PRO=the shifted speaker) moves up to the clausal edge, creating a self-ascriptive property of the shifted speaker, which is understood to designate John. DP1 represents a human group inclusive of John, allowing a collective reading of the null subject.

6.2. Consequences

In short, the main proposal of this thesis says: the indexical structure of PRO is the source of its obligatory *de se* construal and partial readings. When PRO moves, the clause denotes a *de se/te* property. A simplified picture of PC complements looks like (23) in the proposed framework:

(23) [_{CP} PRO_{±Sp, ±Ad} [_{TP} [_{DP} *t* D [_{φP} NP_{+human}]] to leave]].

This section considers how (23) works to account for various PC effects.

6.2.1. Subject Control and Object Control

Canonical subject control can be accounted for by (23) in the following way. Consider (24):

- (24) a. Mary wanted [PRO_{+Sp1} [to promote herself]].
b. * Mary ordered [PRO_{+Sp1} [to promote herself]].
c. * Mary wanted [PRO_{-Sp1} [to promote herself]].
d. * John wanted [PRO_{+Sp1} [to promote herself]].

In (24)a, PRO with [+Sp¹] and the predicate *want* are in a right selectional relationship.

Contrastingly, as in (24)b, the same PRO is incompatible with the predicate *order* in terms of selection. Or, if PRO had [-Sp¹], it would be incompatible with *want* (24)c. As such, we are forced to interpret PRO as referring to the speaker of the reported context, which would be Mary. I have been emphasizing all through this thesis that the coreference between PRO and Mary is non-syntactic. Syntactically, all PRO does is to refer to the speaker of the reported context. The matrix predicate describes the context against which the indexicals of the infinitival complement are evaluated; since the speaker or the author of the content of wanting is represented as the subject of the matrix predicate as *Mary*, we understand that the referent of *Mary* qualifies for the reported speaker.

PRO originates with an Sp feature at Spec DP of an indexical DP. This DP has the same structural and featural properties as first person. PRO and first person look the same at this point.

(25) [[_{DP} [Sp] D [_{φP} NP_{+human}]]]

After agreement operations, however, PRO bears [+Sp¹], which is third person, contrasted to first person [+Sp⁰]. This is why *herself* appears in (24)a. Nullness of PRO is determined by Time¹,

which is omitted from (24) for simplicity. I assume first/second person bears gender although lacking a morphological realization; likewise, PRO bears a gender feature, appearing on the reflexive morphology. This implies that the range of possible semantic values for PRO is more restricted. PRO bearing [+Sp¹] and [+feminine] restricts its possible reference to sets of individuals inclusive of the reported speaker who is female. Nevertheless, distinguishing a male from a female is a pragmatic issue. If *John* appears as the matrix subject as in (24)d, we would think that John, the referent of *John*, is the reported speaker, and that PRO designates John. There is nothing ungrammatical about this assumption, as long as John refers to an individual who is a female. However, our pragmatic knowledge tells us that the name *John* normally refers to a male. We judge (24)d deviant for this reason; it is not ruled out by syntax, but pragmatically infelicitous. Observe the following.

(26) Aoi wanted [PRO_{+Sp1} [to promote herself]].

How do you judge this sentence? *Aoi* is a popular Japanese name, used across gender: we have male *Aois* and female *Aois*. If this sentence is uttered by a person who normally makes sense, you just assume that the individual named Aoi is a female. If it turns out that Aoi is a male, you will find degradation with this sentence, but does this degradation involve syntactic ungrammaticality? I do not think so. This is in line with presuppositional views on ϕ -features including Heim (2008).

When PRO raises to the clausal edge, an optative property is created. I have only focused on the person/time features in the present thesis. However, PRO goes through agreement with various heads representing, for instance, aspect and mood. PRO bears all these aspectual/mood features in addition to person/time features, defining the force of the complement. Importantly, my proposal does not assume syntactic marking/typing of a specific force. No heads in the structure represent “Imperative” or “Promissive.” The structural position of PRO and its features give rise to various force interpretations. We interpret the complement of (24)a as an optative, through features on PRO. Although English does not make overt phonological distinctions for different features on PRO, we see the distinctions in Japanese. I assume that the head just below PRO overtly realizes its feature values in Japanese.

(27) Tokiko-wa [_{ForceP} [_{FinP} [_{PRO+Sp1}] [_{TP} daigaku-e iki]-tai_{Fin+Sp1}]-to_{Force}] nozom-da.

(28) Tokiko-wa [_{Force/FinP} [_{PRO+Sp1}] [_{TP} daigaku-e iki]-tai-to_{Fin+Sp1/Force}] nozom-da.

Tokiko-Top university-to go -Opt-C_{to} hope-Past

‘Tokiko hoped to go to university.’

As in (27), the optative suffix *-tai* morphologically realizes Fin-PRO agreement; Fin adjoins to Force with the complementizer *-to* and PRO moves to Spec Force/Fin; the result is shown in (28).

We assume that *promise*-type subject control involves a structure like (29)a; and *order*-type object control, a structure like (29)c.

(29) a. John promised Mary [_{PRO+Sp1, -Ad1} [to take out the garbage]].

b. * John ordered Mary [_{PRO+Sp1, -Ad1} [to take out the garbage]].

c. John ordered Mary [_{PRO-Sp1, +Ad1} [to take out the garbage]].

d. * John promised Mary [_{PRO-Sp1, +Ad1} [to take out the garbage]]

In (29)a, PRO bears [_{+Sp¹, -Ad¹}] which is compatible with predicates such as *promise*, *vow to*, and *pledge to* with respect to selection. However, it is incompatible with some other predicates such as *order*, *ask*, and *request* as in (29)b. Contrastingly, PRO with [_{-Sp¹, +Ad¹}] may co-occur with *order*-type predicates without s-selectional degradation ((29)c); but it may not appear with *promise*-type predicates ((29)d). Traditional lexical assumptions have held that controlling predicates determine controller choice. The essence of such views remains in the proposed system in the s-selectional relationship between the predicate and PRO features. A crucial difference between the traditional views and the present proposal is that in the former, predicates determine controller choice, but in the latter the reference of PRO is determined by PRO itself.

Again, the distinct feature combinations result in distinct morphological realizations in Japanese; *-(r)u* corresponds to [_{+Sp^{0/1}, -Ad^{0/1}}], and *-e/ro* to [_{-Sp^{0/1}, +Ad^{0/1}}] on Fin.

6.2.2. Split Control and Control Shift

Split control may naturally be accounted for by assuming a structure like (30)a.

(30) a. John proposed to Mary [_{PRO+Sp1, +Ad1} [to do the dishes first]].

b. * John ordered Mary [_{PRO+Sp1, +Ad1} [to do the dishes first]].

- c. John proposed to Mary [PRO_{+Sp1, -Ad1} [to do the dishes first]].
- d. John proposed to Mary [PRO_{-Sp1, +Ad1} [to do the dishes first]]

PRO represents [+Sp¹, +Ad¹], which designates both the speaker and the addressee of the reported context. John and Mary qualify for the reported speaker and the reported addressee respectively. Predicates such as *propose* and *offer* may be selected by this type of PRO. Typical communication verbs such as *say*, *signal*, and *shout* are also compatible with [+Sp¹, +Ad¹]. However, predicates like *order* and *recommend* seem incompatible with this type of PRO as represented in (30)b. Below are some additional data.

- (31) * Mary_i recommended to/ordered John_j [PRO_{i+j} to cooperate with each other].

(Landau (2000: 55))

The feature combination [+Sp¹, +Ad¹] in effect gives rise to an exhortative construal. (30)a expresses the situation described in (32).

- (32) John proposed to Mary: “Let’s do the dishes first.”

In Japanese, the exhortative suffix *-(y)oo* appears in this context. Predicates like *propose* are also compatible with [+Sp¹, -Ad¹] (promissive) as in (30)c, and with [-Sp¹, +Ad¹] (imperative) as in (30)d. The sentence is thus three-way ambiguous: PRO may refer to John, Mary, or both.

Tolerance of predicates to occur with various features of PRO leads to one type of control shift. The predicate *signal* is well-known for this property. (33)ab are from Sag and Pollard (1991: 97).

- (33) a. Col. Jones signaled (to) the pilot_i [PRO_i to land].
 b. Col. Jones_i signaled (to) the control tower [PRO_i to land].
 c. Col. Jones_i signaled (to) the copilot_j [PRO_{i+j} to land].¹

I assume that (33)a has a structure like (30)d, whereas (33)b has a structure like (30)c. We could even add an example in (33)c, which corresponds to (30)a.

Predicates such as *promise* and *persuade* also seem to allow split readings. (34)ab are adapted from Landau (2000: 31).

- (34) a. John_i promised his son_j [PRO_{i+j} to go to the movies together].
 b. John_i persuaded Mary_j [PRO_{i+j} to kiss in the library].

If (34)ab truly do involve split construals, then, we could say *promise* and *persuade* are compatible with structure (30)a; this implies that *promise* is at least compatible with structures (30)a and c, and *persuade* is compatible with (30)a and d. This means that these predicates also allow control shift depending on the context.

6.2.3. *Be-Allowed-To* Type Control Shift

Be-allowed-to type control shift arises from different reasons than *propose*-type shift just discussed in the above subsection. Observe the following summarized in Landau (2000: 184).

(35) [Agent->Goal]

- a. Mary_i was never promised [PRO_i to be allowed to leave].
- b. ? John never promised Mary_i [PRO_i to be allowed to leave].
- c. Grandpa promised the children_i [PRO_i to be able to stay up for the late show].
- d. Montana_i was promised (by the doctor) [PRO_i to be healthy by game time on Saturday].

(36) [Goal/Theme->Agent]

- a. Jim_i asked Mary [PRO_i to be allowed to get himself a new dog].
- b. Susie_i persuaded the teacher [PRO_i to be allowed to leave early].
- c. The council_i petitioned the mayor [PRO_i to be allowed to lower property taxes].
- d. John_i begged Mary [PRO_i to be allowed to consult a doctor].

Those in (35) exemplify agent to goal control shift; those in (36) are representative examples of goal to agent control shift. For *propose*-type control shift, I assumed that the feature values on PRO are distinct in each reading: in traditional terms, PRO with [+Sp¹, -Ad¹] gives rise to “subject control,” PRO with [-Sp¹, +Ad¹] to “object control,” and PRO with [+Sp¹, +Ad¹] to “split control.” However, this is not the case for control shift in (35) and (36). I presuppose the same values of PRO for all cases in (35) to be [+Sp¹, -Ad¹] (promissive). Observe (37)ab, illustrating the structure for (35)a. (37)a represents the clausal structure; (37)b is a zoom-up of the DP-internal structure before PRO movement.

(37) a. Mary was never promised [_{CP} PRO_{+Sp1, -Ad1} [_{TP} [_{DP1} *t* [_{φP} NP_{+human}]] to be allowed to leave]].

b. [_{DP1} [_{DP2} PRO_{+Sp1, -Ad1}] D⁰ [_{φP} NP_{+human}]]

DP1=Mary, DP2=PRO=the promisor

In this structure, PRO refers to the speaker of the reported context, the promisor; DP2 in (37)b represents the promisor. However, DP1 refers to Mary, the promisee. We saw that the relation between DP2 and DP1 canonically represents a part-whole relation; but DP2 (=the promisor), which corresponds to the focal referent of associative plurals, could be associated with the group referent (DP1=Mary) in a more abstract way. I take full advantage of this view in line with Vassilieva (2005, 2008), and assume that the focal referent (DP2=the promisor) may just be emotionally committed to actions taken by the group referent (DP1=Mary). Note that the group referent may be a singleton. This analysis brings out an interpretation in which the promisor is emotionally committed to, or feels obligated to, the future actions of Mary, in which she will be allowed to leave. This seems to be the right construal for (35)a. We saw a similar pattern for the imperative subjects in (120) of Chapter 2 (p.88); non-addressee subjects may occur in the imperative if they designate a group of individuals the addressee is somehow committed to.

Recall one of the most influential semantic approaches to control, Farkas (1988). She employs the notion of RESP-relation to account for control relations. The RESP-relation is a two-place relation formalized as RESP (*i, s*): *s* is the result state of an action performed by *i* “with the intention of bringing *s* about” (Farkas (1988: 36)). Very roughly, *i* corresponds to the matrix controller argument, and *s* to the situation described by the complement. Normally, if *s* describes an intentional action such as *leave* or *write a letter*, the individual taking part in *s* will be *i*. However, if *s* describes a non-intentional situation such as *be allowed to leave* or *receive a letter*, the individual participating in *s* will be different from *i*; yet, *i* is responsible for and bears the intention of bringing about *s* in which another individual, say *j*, is being allowed to leave or receives a letter. With this in mind, consider (35)a, again. The subject of the complement clause is construed as referring to Mary, but there is more to this interpretation. The implicit promisor must play a role in intentionally bringing about the situation described in the complement. PRO

as DP2 represents the promisor, and DP1 represents the complement subject, Mary. Both are syntactically represented in (37)ab. My proposal structurally captures Farkas' RESP-relation.

PC complements generally describe intentional actions.² However, when they describe non-intentional situations, they trigger a *coercion* in interpretation (Jackendoff and Culicover (2003)), giving rise to control shift. This line of thought seems to be on the right track. However, my proposal does not explain how syntax sees intentionality associated with the complement. Exploration on this issue is left to future study; but whatever the mechanism for intentionality is, it seems to be also associated with the imperative. Farkas (1988) and Jackendoff and Culicover (2003) test intentionality by making the imperative out of the complement predicate.

- (38) a. Run the race!
- b. Be examined by the doctor!
- c. * Grow taller!
- d. * Strike Sammy as smart!

(Jackendoff and Culicover (2003: 525))

The rest of the sentences in (35), and those in (36) may be accounted for in a similar way. For (36)a-d, I assume that PRO (=DP2) always bears [-Sp¹, +Ad¹]; but DP1 refers to Jim, Susie, the council, and John in (36)a, b, c, and d, respectively.

6.2.4. Implicit Control

Availability of implicit control can be straightforwardly explained under the proposed system. PRO is not referentially dependent on matrix arguments. Syntactic representation of the “controller” argument is not required. Observe (39).

- (39) It was decided/preferred [PRO_{+sp1} [to raise taxes again]].

PRO bears [+Sp¹] after agreement; it designates the speaker or the attitude holder of the reported context, which would be an individual who made the decision or preferred something.

Consider (40), an instance of implicit object control; sentences like this can also be accounted for by the following structural representation.

- (40) Mary thought John said (to her) [PRO_{-sp1, +Ad1} [to wash herself]].

PRO designates whoever the addressee is in the reported context, which would presumably be Mary. This is only because Mary appears to be the most pragmatically plausible addressee of John's utterance. However, consider the following.

- (41) Mary saw John yelling at his son, Bill. ?She thought John said [PRO_{-Sp1, +Ad1} [to wash himself]]. But the kid never did.

My informant at least marginally accepts the reading in which PRO and *himself* refer to Bill. Determination of specific reference of PRO is dependent on pragmatic plausibility within the syntactically defined referential options, just like the references of *I*, *you*, and *we* are determined.

6.2.5. Culicover and Jackendoff's (2001) Paradigm

Consider two sets of data in (42) and (43) taken from Culicover and Jackendoff (2001: 506-507).

- (42) a. the promise to Susan from John to take care of himself/*herself
 b. John gave Susan some sort of promise to take care of himself/*herself.
 c. Susan got from John some sort of promise to take care of himself/*herself.
 d. A: John made Susan a promise.
 B: What was it?
 A: I think it was to take care of himself/*herself.
- (43) a. the order to Susan from John to take care of herself/*himself.
 b. John gave Susan some kind of order to take care of herself/*himself.
 c. Susan got from John some kind of order to take care of herself/*himself.
 d. A: Susan got an order from John. / John gave Susan an order.
 B: What was it?
 A: I think it was to take care of herself/*himself.

I suggest that all examples in (42) involve the structure (44), and all those in (43), the structure (45).

- (44) ...[PRO_{+Sp1, -Ad1} [to take care of himself]]
 (45) ...[PRO_{-Sp1, +Ad1} [to take care of herself]]

No matter where in the larger structure it occurs, and no matter which name appears in the subject or the object position of the higher clause, PRO would always designate the speaker or

the addressee of the shifted context. It seems that selectional relationships hold not only between verbal predicates and PRO; they also hold between nominal predicates and PRO.

Note that in (42)d and (43)d, there are no intra-sentential arguments that refer to John or Susan. Nor is there a nominal or verbal predicate which may determine controller choice for PRO. These examples constitute crucial evidence for my proposal. Context shifting does not necessarily involve shifting to the context of a reported event introduced in the immediately higher clause. It may shift to a context introduced in the previous discourse. PRO is capable of referring to some individual, without the help of a higher predicate or argument.

6.3. Loose Ends

This thesis has left so many issues unaccounted for. I cannot list everything here. Instead, I will mention some major issues.

The greatest issue of all concerns EC. I have almost given no consideration regarding EC, except that it involves a distinct mechanism from PC. I will just make a few comments. EC seems to be different from PC in at least two ways. One pertains to the internal structure of EC PRO; the other concerns the clausal structure of EC complements. A crucial difference between EC and PC is that EC PRO does not necessitate a *de se* reading and prohibits partial readings. If my proposal is on the right track, both *de se* and partial readings arise from the indexicality of PC PRO. Thus, lack of these properties can be linked to lack of indexicality of EC PRO. This suggests that EC PRO lacks the DP-internal left peripheral projection. Also, lack of *de se* requirement implicates that EC complements do not denote a self-ascriptive property; EC PRO does not move to the clausal edge; at least, not for *de se* property forming purposes. It does not involve indexical shifting either. This implies that EC complements lack Fin projection, representing shifted context coordinates. Although EC complements might not completely lack clausal left peripheral projections, they seem to involve a somewhat more reduced clausal structure than PC complements. Wurmbrand (2003) proposes they are *v*P_s; Grano (2012) argues they are IP_s; Landau (2015) maintains they are CP_s but smaller than PC complements. I am in no position to add anything to their proposals. These details will be left to future study.

Another important issue I will leave without accounts is control into interrogative complements such as (46).

(46) John wasn't sure when to introduce oneself.

Wh-control has traditionally been classified under Non-Obligatory Control (Bresnan (1982), Chomsky (1981)), mostly because it brings about an arbitrary interpretation, and often allows the generic reflexive *oneself*. However, Landau (2000 *et seq.*) subsumes it under PC, a type of OC. It does not seem to be an either-or situation. According to Barrie (2008), some *wh*-control constructions such as (47)a may fall under OC, but some others like (47)b may involve NOC. In fact, a non-generic reflexive often appears in control *wh*-complements ((47)c).

(47) a. John knows when to wash the dishes.

b. Mary learned how to fly a 747. (Barrie (2008: 263))

c. John wondered who to introduce *himself* to. (Landau (2000: 39))

Kawasaki (1993: 46) also presents an intriguing set of data:

(48) a. John asked Mary how PRO_{arb} to bake a pie.

b. John_i asked Mary how PRO_i to bake the pie.

In the preferred reading for (48)a, PRO has an arbitrary reference, but in (48)b, PRO is preferably understood to refer to John. It seems that the genericity-specificity contrast of the controlled complement plays an important role in determining the interpretation of PRO. We could presuppose a kind of T, T_{gen}, that indexes an event to a generic context. Recall that PRO shares the tense feature with T; thus, PRO may also bear T_{gen}, deriving the generic reading. Indeed, one of the plausible shifted contexts is the generic context. Unfortunately, however, I cannot relate these observations to my proposal in a systematic way at this stage.

Furthermore, in my system, the distinction between PRO and *pro* becomes less clear because PRO is referential. This is a very important point suggested by Satomi Ito (p.c.).

Intuitively, *pro* as in Italian appears to occur with finite agreement inflections. This means that *pro* indicates anchoring to the entire utterance context. On the other hand, PRO both in Italian and English could be conceived of as nonfinite *agreement*, although the agreement is covert; nonfinite agreement designates anchoring to a shifted or reported context. Put differently, *pro* quantifies over actual utterance contexts, while PRO over shifted contexts. Nevertheless, it is

possible that some instances of null subjects that have been taken to be *pro* may overlap with instances of PRO. For instance, in embedded contexts, *pro* may sometimes correspond to the English *he**, which I assume to be a controlled subject; *pro* may be analyzed as PRO in such contexts. What I presented here is just speculation; a deeper consideration is certainly in order.

One more major issue: capturing the contrast between gerundive complements and *to*-infinitival complements. The present study mostly dealt with *to*-infinitivals; the research project started out with associating PC to imperative embedding. The focus, from the beginning, has been on intentional control complements which bear strong connection to imperatives. However, gerundive complements constitute an important part of PC.

(49) Kim_i regretted PRO_{i+} solving the problem together.

(Adapted from White and Grano (2014: 470))

My proposal is compatible with gerundives; the proposed system does not require embedded complements to be typed as “imperative” or “exhortative.” My system works as long as PRO at the clausal edge defines the nature of the clause with various features including person, aspect, mood, and tense. However, I paid too little attention to gerundives. There might be some important properties hidden in gerundives, which may contribute to much deeper understanding of PC.

There are so many other loose ends to tie up. However, the above four are the top priorities for future research.

6.4. Conclusion: First Person, Second Person, and PRO

The connection between PRO and first/second person was already suggested in a seminal work on control.

(50) a. Harry ordered Mary to leave.

b. Harry promised Betty to leave.

(51) a. (You) leave, Harry ordered Betty.

b. I will leave, Harry said to/promised Betty.

Postal (1970a) saw parallelism between (50)a and (51)a, and (50)b and (51)b. He proposed that if the subject is second person in the direct discourse paraphrase of a control structure, we should

observe *object* control; if the subject is first person in the paraphrase, *subject* control should obtain.³

So, the idea has long been there, but the fact that PRO bears third person in most cases has made it difficult to express this idea in a principled manner. However, looking inside PRO and first/second person pronouns paved the way to presenting their common properties in morphosyntactic terms. Although disguised in third person, PC PRO shares its core properties with first and second person pronouns; PC is reducible to the person system.

An implication is that at least part of what has been subsumed under *control* does not depend on the construction specific control module (Chomsky (1981)). My argument was not so strong a claim as to say that we can entirely dispense with the module; but such an argument does not seem completely untenable.

Control subsumes a dauntingly huge variety of phenomena. PRO appears in adjuncts and subject clauses, both extraposed and non-extraposed, as well as in infinitival complements. Some occur in *wh*-complements and some others in non-*wh*-complements. We observe control effects exerted by nominals and also into nominal phrases. A question arises as to whether all these phenomena form a natural class. Is there such a system of *control* that is at play behind all this?

I speculate that what has been called control can be broken apart into distinct mechanisms. This sounds like a mess, and goes against the spirit of minimalism. However, if each small broken piece can be subsumed under some other system of natural language, available independent of control, we could end up with no theory of control. Requiring no additional theory is more minimal than requiring one. This is the long-term goal I am aiming at.

The present thesis only attempted to show that for at least one small piece we could do away with a construction specific system. There is a very long way ahead of me. I hope this piece of work will count as a small but a meaningful step in this direction.

Endnotes

Chapter 1

¹ I could not pin down precisely who mentioned this first, but it was already suggested in Partee (1975), and the idea was lurking in McCawley (1970).

² The earliest suggestion that control involves a type of pronominalization, to my knowledge, goes back to Postal (1970a).

³ Classification of control into two subtypes, obligatory control (OC) and non-obligatory control (NOC), dates back to Williams (1980). However, Williams' (1980) original proposal for OC criteria is in fact different from (3), crucially in that it included the criterion below.

- (i) Lexical NP cannot appear in the position of PRO.

Under Williams' proposal, predicates such as *want* and *prefer*, which optionally take a *for*-complement, are *not* subsumed under OC predicates. Bresnan (1982) presents a similar view in her classification of control into *functional* and *anaphoric control*.

⁴ In the current view, after Landau (2000), (4) and (5) do not exclude partial readings.

⁵ Note however that the status of control into interrogative complements is controversial. It is often grouped under NOC, but Landau (2000 *et seq.*) classifies it as OC; Chomsky and Lasnik (1977) present a view similar to Landau.

⁶ Again, importantly, interrogative control such as (7)b is subsumed under OC in Landau (2000 *et seq.*).

⁷ Rosenbaum (1967) already mentioned control shift; Jackendoff (1972) split control; and Wilkinson (1971) partial control.

⁸ Note, however, that Williams (1980) subsumes this sentence under NOC.

⁹ This is a very crude definition of *de re*, expressing my understanding of the term based on Lewis (1979). See Percus and Sauerland (2003a) and Pearson (2013) for more precise formulations of *de re* attitudes.

¹⁰ Unfortunately, I do not have access to Safir's (2010) manuscript. I have not confirmed how the example originally appeared in Safir (2010).

¹¹ (21) and (22) are based on Landau (2000: 38, 2015: 6-7).

¹² But see endnotes 3 and 5 of this chapter.

¹³ The view connecting some type of person to PRO is also presented in Martin (1996). Martin compares PRO to SE-anaphors in Romance languages, including *se* in Spanish and Portuguese and *si* in Italian, which express the speaker's point of view. I thank Idan Landau (p.c.) for mentioning this piece of literature as a precursor to my proposal. Madigan (2008) is also an important precursor to the line of thought presented in this thesis. In his analysis of split control, Madigan presupposes a functional projection representing the speaker and the addressee. I thank Tohru Noguchi (p.c.) for introducing me to this work.

¹⁴ The subjecthood of the null element may not be a strict requirement for control. Landau (2013: 111-115) discusses the case of Tagalog, a Philippine language, in which a nonsubject actor may be controlled.

¹⁵ Again, due to my lack of access to Safir's (2010) original manuscript, I am citing the example indirectly from Landau (2015).

¹⁶ Landau (2015) renames EC as predicative control and PC logophoric control; but the present paper will continue to call them EC and PC to avoid confusion. His list of predicates falling under each type remains the same.

¹⁷ Pearson (2013, 2016) mentions that this observation on *try* is due to Sharvit (2003).

¹⁸ Here, I am talking about structural ambiguities between control and raising; before, I was paying attention to vagueness among various readings of PC PRO. These two should not be confounded.

Chapter 2

¹ The major part of the arguments in this chapter have been presented in my past works (Matsuda (2015ab, 2017ab)), but some crucial theoretical assumptions have been revised and hopefully clarified. Some additional empirical data will also be provided. The proposal only applies to PC, but not to EC. Some of my earlier works (Matsuda (2015ab)) were not clear on this point.

² I have come to realize that this would, in fact, ultimately converge with the view posited by the

movement theory of control.

³ For example, in Zanuttini et al. (2012), they carefully consider how their proposal captures the behaviors of the imperative in English, Italian, and Bhojpuri, just to name a few, as well as Korean. Their analyses range over both so-called null subject languages and non-null subject languages.

⁴ I thank Tohru Noguchi for pointing out this issue.

⁵ Some native speakers of Japanese find slight degradation in the occurrence of *-tai* under the predicate *negau* ‘wish/hope.’ In fact, to my ears too, there is some contrast between the predicates *negau* and *nozomu* (both correspond to the English predicates ‘hope’ or ‘wish’) taking a *-tai* complement. *-Tai* appearing with *negau* sounds slightly worse than that with *nozomu* (see example (7)). However, there are quite a few examples of co-occurrences of *negau* and *-tai* complements, say, in BCCWJ, The Balanced Corpus of Contemporary Written Japanese (version 1.1, data searched on January 4, 2018; see Maekawa et al. (2014) on BCCWJ) including:

- (i) ...tekikakuna handanryoku-o minituke-tai-to negat-ta.
right judgment-Acc learn-Opt-C_{to} hope-Past
‘(He) hoped to learn to make good judgment.’

(Sample ID LBe9_00061: Yoshimura (1990))

- (ii) Kono yoi hitotati-to shoogai kurasi-te-iki-tai-to negat-ta ga...
these good people-with for life live-Ger-keep-Opt-C_{to} hope-Past although...
‘Although (he) hoped to live with these good people for life.’

(Sample ID OT02_00020: Miyaji (2005))

- (iii) ...dareka-to kare-ni tuite hanasi-o si-tai-to nega-ta.
someone-with he-Dat about talk-Acc do-Opt-C_{to} hope-Past
‘...(She) hoped to talk about him with someone.’

(Sample ID LBh9_00130: Fujimoto (1993))

The predicate *negau* with a *-tai* complement seems at least acceptable although there may be some degradation. The reason for such judgment is left open to future study.

⁶ I first judged (21) to be fully grammatical, but Nobuko Hasegawa and Kyoko Yamakoshi (p.c.)

pointed out to me that it involves some degradation to their ears. However, (23) sounds fully grammatical to them. Their judgment is very suggestive. It implies that *yakusokusuru* ‘promise’ is not compatible with the intentive *-(y)oo*; if it were, (21) should sound perfect with PRO referring only to the reference of the matrix subject *Tokiko*. However, because the predicate is only compatible with an exhortative complement (and a promissive complement) but not with an intentive complement, the contrast in grammaticality arises between (21) and (23). In both marginal (21) and perfect (23), PRO seems to be understood to refer to *Tokiko* and someone she made the promise with. The grammaticality difference boils down to whether the *to* ‘with’ comitative argument for *yakusokusuru* ‘promise’ can be left morphologically unsaturated or not when it takes an exhortative complement.

⁷ The object control-like effects involving *-yooni* complements was also pointed out by Kimiko Nakanishi during the reviewing process of this thesis.

⁸ I thank Kimiko Nakanishi for suggesting this issue to me.

⁹ In fact, this sentence and the rest of the example sentences in this subsection sound most natural with a null subject. Overt subjects are inserted for expository purposes to consider compatibility with the *-tai* suffix.

¹⁰ Observe (i) adapted from Kuno (1973: 82).

- (i) Boku-wa eiga ga/o mi-tai.
 I-Top movie see-want
 ‘I am anxious to see movies.’

¹¹ *Mari* in (68) could appear felicitously if the speaker is referring to herself by her name *Mari*.

¹² Tohru Noguchi suggested to me that *kaer-u* ‘go home’ sounds felicitous even as a monologue when it occurs with the expression *yosi*, which has a meaning close to ‘all right’ or ‘OK.’ So (i) sounds felicitous as a monologue.

- (i) Yosi, kaer-u.
 all right go-home-Prm/Nonpast(?)
 ‘All right, I’ll go home.’

However, I am not certain if *-(r)u* in (i) bears the promissive force or it is just an indication of the

Nonpast tense. Also, he pointed out to me that *kaer-u* with the particle *-zo* sounds natural as a monologue (ii). The particle *-zo* expresses a strong resolution or commitment of the speaker to something.

(ii) *Kaer-u-zo*.

go home-Prm/Nonpast(?)-Prt

‘Yes! I’ll go home.’

These phenomena are intriguing. Intuitively, the *-(r)u* suffix is a realization of Nonpast in (i) and (ii), but *yosi* and *-zo* in a way give those utterances the intensitive force, which is compatible with a monologue; but detailed accounts have to be left to further study.

¹³ See Chapter 4, section 4.6 on how the imperative subject and PC PRO get to be null, contrasted to overt first/second pronouns.

¹⁴ Nakanishi retrieved the data from the Internet: (110) a is from <<http://www.itsshipetime.com>>; and (110)b is from

<https://www.lonelyplanet.com/thorntree/forums/europe-eastern-europe-the-caucasus/russia/russian-lover#post_16195665>. (These data are retrievable as of November 15, 2018.)

¹⁵ The idea along this line was first presented in Matsuda (2015a).

¹⁶ There are issues involving whether having multiple speakers in one context is possible. This is discussed in Chapter 5, section 5.4.

Chapter 3

¹ The examples from (13) to (18) are all adapted from Castañeda (1966: 133-134). Castañeda in fact treats sentence (18) as involving a variable of quantification with the following construal:

There is just one editor of *Language* such that if he remembers it, he will notify you about it.

² The S-use here designates the use of *he* as a pointer to the object of one’s self-consciousness.

³ An obvious exception is PRO, which can also refer to this object. I am not sure if Castañeda was aware of the parallel behavior of this null element. As far as I know, he does not mention a null element comparable to what we now call PRO.

⁴ The sentence in Castañeda (1967b) appears as follows. *Jones knows that he (himself) is in the*

hospital.

⁵ I am extending Heim's (2008) presuppositional view on ϕ -features here.

⁶ Percus and Sauerland (2003a) later develop their proposal employing an acquaintance-based concept-generator G, but since their basic view can be more intuitively captured via acquaintance relations R, I stick with their R version of *de re* denotations here.

⁷ This movement might appear as a violation of the left branch condition (Ross (1967), Corver (1990)). However, previous literature has revealed that various languages allow well-formed left branch extractions including Latin (Ross (1986)), Japanese (Ura (1996)), Hungarian, and Modern Greek (Gavruseva (2000)) just to name a few. Although a deeper consideration is required to say my proposal meets the conditions that allow such extractions, this has to be left for future research.

⁸ According to Nunes (2008), Brazilian Portuguese allows null expletives and null arbitrary third person subjects. Topic bound null subjects are also available in this language.

Chapter 4

¹ In my previous papers (Matsuda (2017ab)), I presented a similar view that PC PRO may be treated as a shifted indexical. Although the present proposal shares the same insight as the previous ones, the implementations of the idea are largely revised. I also would like to mention that Idan Landau (p.c.) generously gave me comments to an earlier version of Matsuda (2017b); the discussions presented in this chapter (also in other chapters, but particularly in this chapter) benefited greatly from his comments.

² It is important to note that Landau (2015) explicitly argues against the view that PC PRO is a shifted indexical. I will provide a review on his analysis on PC in Chapter 5 section 5.10.

³ The first and the second person pronouns may be bound in some cases such as (i). See Partee (1989) and Kratzer (2009) for various other examples.

- (i) Only I did *my* homework.

⁴ Sometimes, PRO occurs with the first/second person reflexives as in (i).

- (i) I/you promised my/your mother PRO to behave myself/yourself.

I will deal with this issue in section 4.6.5. The point I mean to stress here is that PRO may designate the speaker/addressee of a shifted context and appear as third person.

⁵ The empty set is intended to capture expressions like *no one*.

⁶ This assumption only holds provided that duals and paucals fall under the number system, outside the person system.

⁷ The idea of combining these studies was inspired by Van Koppen (2012).

⁸ Anand and Nevins (2004) properly illustrate that these examples involving the indexicals *ez* and *ti* are not instances of direct discourse.

⁹ The index on *ti* originally appears as $t_{i/j/k}$ in Anand and Nevins (2004), which is apparently unintended. The intended index should be $t_{i/k}$ as shown in (60).

¹⁰ The proposed distinctions among indexicals directly build on Schlenker (2003b). He holds that indexicals bear one of the following feature sets: a. [+contextual, +actual], b. [+contextual, ±actual], or c. [+contextual, -actual]. My first type corresponds to a, second type to b, and third to c.

¹¹ Hasegawa (2009) proposes that the imperative morphology is a type of CP-level agreement.

¹² In Chapter 2, we observed that a sentence like (65) may involve true embedding although it could also be construed as a direct quotation. The focus here is precisely on the true embedding case.

¹³ There is another interesting piece of data pertaining to this example. Observe (i).

- (i) * M be yè le cleva
1SG say LOG COP clever
Intended: 'I say that I am clever.'

According to Pearson (2013), when the attitude holder expressed in the matrix clause is in the first/second person, the attitude complement with *yè* is degraded.

¹⁴ Bianchi (2001, 2003) mentions the sequence of tense phenomenon which falls outside her definition of finiteness. It is not always the case that finite verb forms are anchored to the S point. Some embedded finite tenses are evaluated with respect to the matrix event time. She leaves this issue open to further research.

¹⁵ Bianchi's assumptions and mine are slightly different: Bianchi holds that the coordinates (speaker, addressee, time, and space) shift in one fell swoop from eLC to iLC; but I will propose in 4.6.4 and 4.6.5 that partial shifting of the coordinates is possible. In partial shifting, some coordinates shift while others remain unshifted. For instance, the speaker coordinate may shift from the utterance context speaker to the shifted speaker/author of the reported attitude whereas the time coordinate remains anchored to the utterance time. See Deal (2017) for the plausibility of partial shifting.

I speculate that EC may involve shifting of the time coordinate, but not of the speaker/addressee coordinates. For example, in (i), the event of leaving is interpreted to occur simultaneously with the event of managing, which had happened before the time of the entire utterance (expressed by the past tense on the predicate *manage*).

(i) John managed to leave.

Thus, it is plausible that partial shifting of the time coordinate takes place in EC; however, such a view on EC will not be further developed in the present thesis. I will return to this issue in future studies.

¹⁶ This argument does not extend to languages like Amharic where the shifted speaker also counts as first person (see section 4.4, Chapter 4).

¹⁷ Idan Landau (p.c.) and one of the reviewers of my previous paper (Matsuda (2017b)) suggested that it requires explanation.

¹⁸ I appreciate Idan Landau (p.c.) for suggesting this problem to me.

¹⁹ In embedded contexts, in some languages including English, sequence of tense effects make the time anchoring system less straightforward, particularly in the embedded past tense (Ogihara (1996), Abush (1997)). I have to leave this issue open to future work.

²⁰ For the optative *-tai* suffix, however, things are not so simple. As discussed in Chapter 2, it does make tense distinctions and it is compatible with *noda* cleft constructions; these behaviors are contrasted with other force realizations in (119). Nevertheless, when it occurs in the nonpast tense and does not appear in a larger construction such as *noda* clefts, it exerts person restrictions on the subject. I speculate that the optative morphology is due to a certain head below T,

responsible for the optative mood. However, PRO and Fin must end up with +Sp in the embedded optatives (which I assume to be PC complements), or else they will be incompatible with the person restrictions this mood imposes. Details of this issue will be left to further study.

²¹ A similar suggestion is provided for subject *wh*-movement in Pesetsky and Torrego (2001); my assumption here is greatly inspired by their idea.

²² The issue involving the precise positions of the imperative verb and subject is highly complex.

Consider the following taken from Potsdam (2007: 253):

- (i) a. Don't you forget!
- b. Do someone help him quickly!
- c. You don't be late.
- d. Someone do answer the phone!

We could assume *do* and *don't* in the imperatives are located at Fin, or C, as often proposed. Then, (i)a and b receive a natural account. The subjects *you* and *someone* are at Spec TP and the verbs are at T. However, (i)c and d appear puzzling; the subject in these examples may be at Spec TP and *do* and *don't* are at T. Alternatively, if the subject is at Spec CP, then *do/don't* is at C. There seems to be both inter- and intra-linguistic variations in the positions of the imperative verb and subject. This implies that the proposed v-T-Fin complex may split in *do/don't* imperatives and in imperatives with the subject. Accounting for these phenomena goes too far afield. Furthermore, root imperatives contrast with embedded imperatives (i.e. PC complements) in that the former allows overt subjects. As long as the subject refers to a group of people inclusive of the addressee, it could take various forms:

- (ii) a. *You* be quiet! (pronoun)
- b. *Everybody* hurry up! (quantifier)
- c. *Whoever saw the incident* come forward please! (indefinite)
- d. *A few of you* stay behind to help clean up! (partitive)
- e. *The boy in the corner* stand up! (definite)
- f. *People with questions* stay behind afterwards! (bare plurals)
- g. *Rob* take the box and *Dave* bring the suitcase! (names in coordination)

h. **Mary* stand by the door! (a name not in coordination)

(Postdam (1996: 203-205))

The present thesis will not provide accounts for these various forms of the subject allowed in root imperatives. This issue is hugely perplexing. Particularly peculiar is the ungrammaticality of (ii)h contrasted to g.

²³ I am limiting my discussion to the use of *to* in PC complements. *To* appears in various constructions in English; my argument for this morphological item does not extend to all its instances.

²⁴ I appreciate Idan Landau (p.c.) for raising this issue.

²⁵ In Landau's (2018) example, PRO_i follows *to*, perhaps indicating the original position of PRO , but I am not sure if this was Landau's intention.

Chapter 5

¹ I thank Kyoko Yamakoshi for pointing out to me that *-tati* not only attaches to [+human] nominals but also to [+animate] nominals; [-human][+animate] nominals also seem to give rise to associative plural readings. Consider (i). (i) is due to Kyoko Yamakoshi (p.c.).

- (i) Bosu-zaru-tati-ga kotti-e mukatte ki-ta.
boss-monkey-Pl-Nom here-to towards come-Past
'The boss monkey with some others have come towards us.'
- (ii) Konchuu-tati-ga kotti-e mukatte ki-ta.
insects-Pl-Nom here-to towards come-Past
'The insects (and some non-insects) have come towards us.'

-Tati sometimes even attaches to non-animates such as *hosi* 'star,' as suggested again by Kyoko Yamakoshi; but *-tati* seems to attach to non-animates, only when we interpret them as bearers of mind or volition, or as agents of the described event. For instance, (iii) sounds much more felicitous to my ears than (iv).

- (iii) Hosi-tati-ga sora-de kimi-o mimamot-te kure-te i-ru.
 star-Pl-Nom sky-at you-Acc watch-Ger give-Ger be-Pres
 ‘The stars are watching you in the sky.’
- (iv) # Sora-ni kireina hosi-tati-ga mie-ta.
 sky-at beautiful star-Pl-Nom appear-Past
 ‘Beautiful stars appeared in the sky.’

Non-animates with *-tati* also allow associative readings. Consider the sentence in the following context.

[Context: Taro saw the moon, Venus, and Sirius, and thought...]

- (v) Tuki-tati-ga boku-o mimamot-te kure-te i-ru.
 moon-Pl-Nom me-Acc watch-Ger give-Ger be-Pres
 ‘The moon (and some other stars) are watching me in the sky.’

² In Vassilieva (2005: 8) *pater ol* is glossed as ‘the priest and his flock’ and in Vassilieva (2008: 342) the same phrase is glossed as ‘the priest and his congregation.’ Perhaps, the latter is a more contemporary translation.

³ Yanagida (2011) presents a similar analysis based on Vassilieva (2008) on the Japanese associative plurals with the plural suffix *-ra*.

⁴ See Landau (2000: 48-55) for his discussions on the semantic vs. syntactic plurality of PRO and on split control. A summary of Landau’s findings is provided in Chapter 2, around (26)–(28) (p.49) of the present thesis.

⁵ This fact seems to be related to how Japanese allows relative tense (Ogihara (1996)).

⁶ (70) lacks the addressee representation under the assumption that the author would not normally address his/her journal to a specific person. However, if the journal is addressed to someone, then we just simply add the addressee to Fin_{eLC} .

Chapter 6

¹ Sag and Pollard (1991) mention the following example, which is comparable to my example (33)c.

(i) Col. Jones_i signaled to Capt. Rogers_j [PRO_{i+j} to synchronize watches].

² This generalization does not hold for complements of optative predicates such as *want*, *hope*, and *wish*. Non-intentional complements such as *grow taller* sound just fine under *want*:

(i) Mary wants to grow taller.

What accounts for the contrast between compatibility of optative predicates and incompatibility of other PC predicates will be explored in future research.

³ Also important to note is Kuno's (1972: 162-164) analysis of a sentence like (i), which can be interpreted as (ii).

(i) John_i expects that he_i will be elected.

(ii) John expects, "I will be elected."

Although we now know that (ii) corresponds to only one reading of (i), the suggestion that the *de se he* (or *he**) bears some meaning close to the first person *I* was presented clearly in this early literature. Kuno also suggested that (i) may have the deep structure (iii), and that the noun phrase with the person features such as +1st person and +2nd person may need to undergo pronominalization.

(iii) John_i expects that John_i [+1st person] will be elected.

(Kuno (1972: 164, fnt 2))

If we change [+1st person] to [+speaker], and assume that [+speaker] under the shifted context is spelled out as *he* in English as I did in this thesis, Kuno's earlier suggestion begins to really converge with the view presented in this thesis. I appreciate Tohru Noguchi for mentioning this literature to me.

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