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Control from inside

Evidence from Japanese

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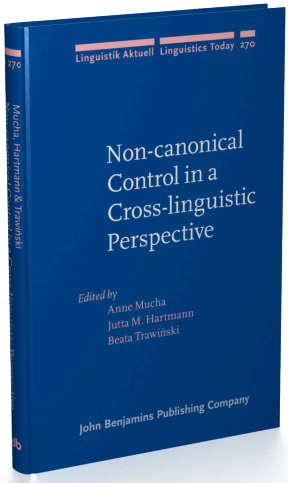

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Traditional assumptions hold that the reference of complement control PRO is dependent on the reference of a higher argument and that the lexical properties of the embedding predicate are mostly responsible for controller determination. Against such views, this study argues for the possibility that the reference of certain instances of PRO (PC PRO) derives from its own internal structure. The insight comes from Japanese data where certain force suffixes appear in the complements of attitude predicates. These forces are proposed to arise from C-PRO indexical (speaker/addressee) agreement. Similar views have been presented in my previous works (Matsuda 2015a; b, 2017a; b, 2019), with some revisions along the way. This paper provides new supporting data and presents my revised framework.

1. Introduction

Complement control has often been subsumed under Obligatory Control (OC), which canonically involves identical reference between the null subject (PRO) of an embedded infinitival complement and a unique argument of the embedding predicate. However, attention to various noncanonical interpretative options has surged in the past two decades, largely due to Landau (2000, 2004, 2008, 2015, 2018). Some instances of complement control allow partial control, where the reference of the alleged controller constitutes a subset of that of PRO as in (1), adopted from Landau (2000: 5), or split control, in which the reference of PRO overlaps with those of the two arguments of the embedding clause as in (2) from Rooryck (2000: 75). Indeed, (2) is also an instance of control shift or variable control, allowing at least three types of interpretation, subject control, object control and split control.

(1) The chair$_i$ preferred PRO$_{i+}$ to gather at 6.

(2) Kim$_i$ proposed to Sandy$_j$ PRO$_{i/j/i+j}$ to do the dishes.

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These noncanonical interpretations violate the traditional OC criteria (e.g. Hornstein 1999; Williams 1980) which require a strict referential identity between PRO and a unique controller. Nevertheless, they do not fall under Non-Obligatory Control (NOC) either. NOC permits an arbitrary or generic controller and non-*de se* construals, neither of which is allowed in partial/split control. There is at least some referential overlap between PRO and a higher argument, and a *de se* (or *de te*) reading is obligatory in partial/split control (Landau 2015). The challenge we are faced with is to capture such phenomena in a principled manner.

(3) What kind of structure allows nonidentical but nondisjoint referential relations that necessitate *de se* interpretations?

The goal of this paper is to provide a morphosyntactic solution to this question.

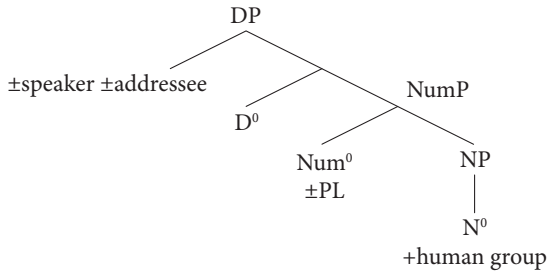
There seems to be a tight connection between nonidentical nondisjoint reference and *de se*. Landau (2015) reveals that in complement control where nonidentical nondisjoint reference (e.g. partial control) is allowed, *de se* is obligatory. But where nonidentical nondisjoint reference is impossible, *de se* is non-obligatory or, in fact, irrelevant.

According to Landau (2000 et seq.), complement control is divided into two systems: Partial Control (PC) and Exhaustive Control (EC). PC involves attitude predicates (e.g. *prefer, promise, tell*) and allows both exhaustive control and partial control; in PC, PRO is obligatorily read *de se* and +human. EC is associated with nonattitude predicates (e.g. *begin, manage, force*) and always brings about an exhaustive reading; occurring under nonattitude predicates, EC PRO does *not* involve *de se* and may be ±human. Landau (2015) also shows that split control, implicit control and control shift are possible only in PC. Various authors now presuppose these distinct types of complement control (Bianchi 2003; Grano 2012; Pearson 2013) although exactly where to draw the line between them remains controversial.

The present paper focuses on PC, in which noncanonical control phenomena are observed. PRO in this study is intended to refer to PC PRO, unless otherwise mentioned.

I propose that the key factor lies in the structure of PRO itself. More concretely, PRO is born with the same structure as that of the first and second-person pronouns as in (4). I presuppose Late Insertion (Halle & Marantz 1993) and assume that the morphological forms of pronouns are determined after syntactic derivations. (4) builds on Vassilieva (2005, 2008), who focuses on the associative plurals in various languages.

(4)



The first/second-person pronouns in the world's languages are known for their associative semantics. The English first-person plural *we*, for instance, does not necessarily represent a plurality of the speakers of the speech context; it designates the speaker plus some other individuals. Thus, a subset relation holds between the speaker and *we*, just like the subset relation observed between the controller and PRO. Likewise, a subset relation holds between the addressee(s) and the second-person plural *you*.PL. There are languages that morphologically distinguish between the inclusive first person (the speaker and addressee plus optional others) and the exclusive first person (the speaker plus optional others, excluding the addressee), but there is virtually no language that prohibits the first person or second person from including other individuals, according to previous studies including Cysouw (2003); Harbour (2016) and Wechsler (2010). Thus, the associative semantics of the first/second person seems to be a universal of languages. Split control PRO may have the structure of the inclusive first person, which represents both the speaker and addressee, and optionally some others (Fujii 2006; Madigan 2008).

In addition, the first/second-person pronouns are most naturally construed *de se* or *de te*. Informally, the notion of *de se/te* is explained as reference to an individual who one would conceive of as *I* or *you* in a direct speech context (Chierchia 1990; Lewis 1979; Pearson 2013; Percus & Sauerland 2003a; b). Also, the first/second-person pronouns are +human. Thus, PRO (PC PRO) and the first/second-person pronouns have striking resemblance with respect to associative plural semantics and obligatorily *de se* and +human nature.

This study contends that the availability of partial control and split control and obligatory *de se/te* +human construals for PRO derive from the internal structure of PRO that looks like the first/second-person pronouns.

Evidence is shown from Japanese, in which certain force suffixes overtly appear on the verb both in roots and PC complements. Japanese is often considered to be a nonagreement language where the subject-verb ϕ-feature agreement (person and number) is at least not visible on the indicative verb (Fukui 1986; Kuroda

1988). However, as advocated by Hasegawa (2009), the language displays a variety of CP-level agreement, such as the imperative and exhortative suffixes on the verb.

I do not take this CP-level indexical agreement, or speech-act participant agreement, to be a language-specific process. In my view, both the CP-level and the TP-level agreement operations take place syntactically in languages including English and Japanese inside or outside of control phenomena. Similar syntactic processes give rise to similar interpretative effects across languages, but morphological realizations may vary by language. Thus, although the proposal is made based on observation of the Japanese data, it is intended to capture similar phenomena, PC, in English and beyond.

2. Data

Since Matsuda (2015a), I have been focusing on the Japanese data where special verbal suffixes appear in the complements of attitude predicates. This section provides a review of the most basic paradigm of my analyses and presents new data to show that the target structures display the hallmark properties of PC.

The observation benefited greatly from the studies of the modality and force in the traditional literature on Japanese (Adachi 2002; Moriyama 2000; Nitta 1991; among others). It also builds on prior authors in the generative framework, namely Fujii (2006); Hasegawa (2009) and Madigan (2008), who have drawn our attention to the role of the complement force in control.

2.1 Control as force embedding

Consider the following set of Japanese data. The matrix verb in each of these examples corresponds roughly to an English verb that is often analyzed as a PC predicate. I place focus on the suffix on the embedded verb; in the following examples, a distinct suffix appears on the embedded verb under a distinct embedding verb. See (10) for what each suffix stands for.

(5) Tokiko$_i$-wa [PRO$_i$ Hawai-ni iki-*tai*-to] nozom-da.
Tokiko-TOP Hawaii-to go-OPT-COMP hope-PST
'Tokiko$_i$ hoped PRO$_i$ to go to Hawaii.'

(6) Asako$_i$-wa [PRO$_i$ Hakone-ni ik-*oo*-to] kime-ta.
Asako-TOP Hakone-to go-INT-COMP decide-PST
'Asako$_i$ decided PRO$_i$ to go to Hakone.'

(7) Sensei$_i$-wa Tokiko$_j$-ni [PRO$_j$ shukudai-o das-*e*-to]
Sensei-TOP Tokiko-DAT homework-ACC submit-IMP-COMP
meireisi-ta.
order-PST
'The teacher$_i$ ordered Tokiko$_j$ PRO$_j$ to submit her homework.'

(8) Tokiko$_i$-wa sensei$_j$-ni [PRO$_i$ shukudai-o das-*u*-to]
Tokiko-TOP sensei-DAT homework-ACC submit-PRM-comp
yakusokusi-ta.
promise-PST
'Tokiko$_i$ promised the teacher$_j$ PRO$_i$ to submit her homework.'

(9) Tokiko$_i$-wa Yuya$_j$-ni [PRO$_{i+j}$ shukudai-o yar-*oo*-to] teiansi-ta.
Tokiko-TOP Yuya-DAT homework-ACC do-EXH-COMP propose-PST
'Tokiko$_i$ proposed to Yuya$_j$ PRO$_{i+j}$ to do their homework (together).'

The suffix *-tai* in (5) expresses the optative force; *-(y)oo* in (6), the intentive force; *-e/ro* in (7), the imperative force; *-(r)u* in (8), the promissive force; and *-(y)oo* in (9), the exhortative force. The suffix-force correspondence is summarized in (10).

(10) a. *-tai* – OPT (optative)
b. *-(y)oo* – INT (intentive)
c. *-e/ro* – IMP (imperative)
d. *-(r)u* – PRM (promissive)
e. *-(y)oo* – EXH (exhortative)[1]

Note that the intentive suffix (10b) and the exhortative suffix (10e) take the exact same form, but the present paper analyzes them to be realizations of distinct types of force. I will come back to details below.

Examples (5) to (9) reveal that each sentence as a whole is declarative, but the embedded complement clause has an independent force. For instance, the verb *nozomu* 'hope' embeds an optative clause in (5), and the verb *meireisuru* 'order' takes an imperative complement in (7). The skeletal pictures of (5) to (9) are shown in (11) to (15) below.[2]

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1. The imperative suffix takes the form *-e* after a consonant-ending verb stem, and *-ro* after a vowel-ending verb stem. The intentive/exhortative suffix is realized as *-oo* when it follows a consonant-ending stem and as *-yoo* after a vowel-ending stem. A similar rule applies to the *u/ru* contrast for the promissive suffix. Some predicates display irregular morphology.

2. Note that these predicates do not always embed a speech-act force. Some also embed *-yooni* and/or *-koto* complements (see Section 2.4). Also, the selectional relations between the embedding predicate and the embedded force are *not biunique* (see Section 2.4).

(11) [$_{\text{matrix}}$ DECL *hope* [$_{\text{complement}}$ OPT]] subject control

(12) [$_{\text{matrix}}$ DECL *decide* [$_{\text{complement}}$ INT]] subject control

(13) [$_{\text{matrix}}$ DECL *order* [$_{\text{complement}}$ IMP]] object control

(14) [$_{\text{matrix}}$ DECL *promise* [$_{\text{complement}}$ PRM]] subject control

(15) [$_{\text{matrix}}$ DECL *propose* [$_{\text{complement}}$ EXH]] split control

Some may wonder if the above data involve true embedding. In fact, the Japanese complementizer *-to* attached to the complements in (5) to (9) allows both direct and indirect speech interpretations. Some of the examples give rise to a direct-quotation reading. However, the grammatical transparency tests suggested in the previous literature (e.g. Crnič & Trinh 2009; Kuno 1988; Oshima 2006) reveal that the above data also involve true embedding, i.e., the complement clauses are also interpreted as indirect reported speech.

For instance, (16) which corresponds to (7), illustrates that a *wh*-phrase with a matrix scope is possible in the embedded environment. This serves as evidence for the imperative suffix *-e/ro* occurring in a truly embedded reported speech context.

(16) Sensei-wa Tokiko-ni [*nani*-o das-e-to] meireisi-ta no?
teacher-TOP Tokiko-DAT [what-ACC submit-IMP-COMP order-PST Q
'What did the teacher order Tokiko to submit?'

The teacher has probably never uttered the sentence *nani-o dase*; the embedded clause cannot be a quotation. Similar tests have proven that sentences like (5) to (9) allow nonquotation interpretations.[3]

Some may also be curious as to how central the embedding of force markers is to Japanese grammar. Importantly, the above structures are used commonly in everyday language, and they are not marginal. Less attention has been paid to the paradigm as in (5) to (9) as corresponding to control structures or PC, perhaps because, at first glance, they appear to only involve a quotation.[4] There has also been a widely held view that force embedding is prohibited in any language. However, recent studies have revealed that force embedding, imperative embedding in particular, is possible in many languages (see Crnič & Trinh 2009 and works cited there), and Japanese is one of the languages that allow overtly realized force embedding. This overtly expressed force morphology in Japanese seems to make what is invisible in English visible to us.

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3. See Matsuda (2017b, 2019) for additional data revealing the availability of nonquotation readings of sentences like (5) to (9).

4. But Fujii (2006) presents a similar paradigm.

2.2 Partial control

Now, if the above force-embedding structures are to fall under PC, they should allow both exhaustive and partial control. This is borne out by the following set of data.

First, consider (17). The collective predicate *atumaru* 'gather' requires a plural subject; when it occurs with a singular subject in a simple indicative past, it gives rise to severe degradation.

(17) ??Tokiko-wa yo-ji-ni atumat-ta.
Tokiko-TOP four-o'clock-at gather-PST
'Tokiko gathered at four.'

In contrast, PRO in (18) to (22) allows a partial reading without degradation.

(18) Tokiko$_i$-wa [PRO$_{i+}$ yo-ji-ni atumari-*tai*-to] nozom-da.
Tokiko-TOP four-o'clock-at gather-OPT-COMP hope-PST
'Tokiko$_i$ hoped PRO$_{i+}$ to gather at four.'

(19) Tokiko$_i$-wa [PRO$_{i+}$ yo-ji-ni atumar-*oo*-to] kime-ta.
Tokiko-TOP four-o'clock-at gather-INT-COMP decide-PST
'Tokiko$_i$ decided PRO$_{i+}$ to gather at four.'

(20) Sensei$_i$-wa hanchoo$_j$-ni [PRO$_{j+}$ ni-ji-ni kootei-ni
teacher-TOP group leader-DAT two-o'clock-at schoolyard-at
atumar-*e*-to] meireisi-ta.
gather-IMP-COMP order-PST
'The teacher$_i$ ordered the group leader$_j$ PRO$_{j+}$ to gather at the schoolyard at two o'clock.'

(21) Hanchoo$_i$-wa sensei$_j$-ni [PRO$_{i+}$ ni-ji-ni atumar-*u*-to]
group leader-TOP teacher-DAT two-o'clock-at gather-PRM-COMP
yakusokusi-ta.
promise-PST
'The group leader$_i$ promised the teacher$_j$ PRO$_{i+}$ to gather at two.'

(22) Tokiko$_i$-wa Yuya$_j$-ni [PRO$_{i+j/i+j+}$ yo-ji-ni atumar-*oo*-to]
Tokiko-TOP Yuya-DAT four-o'clock-at gather-EXH-COMP
teiansi-ta.
propose-PST
'Tokiko$_i$ proposed to Yuya$_j$ PRO$_{i+j/i+j+}$ to gather at six.'

PRO in (20), for instance, refers to *hanchoo* 'the group leader' and some others, perhaps his group members, but the teacher is excluded from its reference. Note that in (22), at least two readings are available: one is an exhaustive split reading where

PRO refers exhaustively to the referents of the subject and object of the matrix clause, Tokiko and Yuya; the other is a partial split reading where PRO designates Tokiko, Yuya and some others.

2.3 De se

The embedded force structures display another important PC property, the obligatory *de se* reading.

Consider scenario (23), exemplifying a non-*de se* attitude Hana holds towards herself. The optative embedded structure, (24), is judged false against the scenario, proving that it is obligatorily read *de se*.

(23) *Scenario*: Hana goes to a noncompetitive high school. She thinks that none of her classmates will make it to university. However, after taking an exam one day, she starts to think that at least some of her classmates deserve to go to university because they have been studying very hard. She thinks, "the student who gets the highest score on today's exam should go to university." Unbeknownst to Hana, she herself is the one who gets the highest score.

(24) Hana$_i$-wa [PRO$_i$ daigaku-e iki-*tai*-to] nozom-dei-ru.
Hana-TOP university-to go-OPT-COMP hope-PROG-NONPST
'Hana hopes to go to university.' *False*

All relevant data for all types of force embedding cannot be presented here; but let us consider the most intriguing case, the exhortative embedding, which should require both *de se* and *de te*. Scenario (25) describes a non-*de se*, non-*de te* situation: Hana is not aware that she is talking about herself nor her addressee, Yuya. The embedded exhortative in (26) is judged false against this scenario.

(25) *Scenario*: Hana is the president of the student council. One of the graduating students makes a speech at the graduation ceremony every year at her school. However, no students have volunteered to take this honorable opportunity this year. The students are all very shy and seem to be scared of giving the speech alone. Hana, in charge of deciding who to give the speech, consults with the vice president of the council, Yuya. She says to Yuya, "what about two students who get the two highest GPAs giving the speech together?" Unbeknownst to them, their GPA scores have just been calculated, and they are the two highest GPA holders.

(26) Hana$_i$-wa Yuya$_j$-ni [PRO$_{i+j}$ supiichi-o futari$_{i+j}$-de si-yoo-to]
Hana-TOP Yuya-DAT speech-ACC two.people-by do-EXH-COMP
teiansi-ta.
propose-PST
'Hana proposed to Yuya to give the speech (two of them together).' *false*

2.4 Nonbiunique selectional relations

The facts we have seen so far, the paradigm in (11) to (15) in particular, point towards an assumption that the matrix predicate selects a complement force type, and then the force in turn determines the interpretation of PRO. However, the situation is not that simple. We observe a nonbiunique, non-one-to-one relationship between the matrix predicate and the embedded force. Consider (27).

(27) Hana$_i$-wa [PRO$_{i/i+}$ supiichi-o si-*tai/yoo*-to] omot-ta.
Hana-TOP speech-ACC do-OPT/INT-COMP think-PST
'Hana thought she/they wanted to/would give a speech.'

The predicate *omou* 'think' is compatible with at least two force types, optative and intentive. Predicates like *yakusokusuru* 'promise' allow promissive and exhortative complements as in (28).

(28) Hana$_i$-wa [PRO$_{i/i+/i+j/i+j+}$ supiichi-o su-*ru*-/si-*yoo*-to] yakusokusi-ta.
Hana-TOP speech-ACC do-PRM/do-EXH-COMP promise-PST
'Hana promised someone that she/they would give a speech.'[5]

In (28), although the matrix predicate is kept constant, the interpretation of PRO varies by complement force. In the promissive complement, PRO may refer to Hana or Hana plus some others, not inclusive of the person to whom Hana addressed the promise. In the exhortative case, PRO must include Hana *and* the person to whom she addressed the exhortative attitude; it may optionally include some others. The force of the embedded complement contributes to capturing fine-grained contrasts in the referential options of PRO.

The verb *iu* 'say' allows co-occurrence with all five forces discussed in this study as illustrated in (29). I leave out the indices on PRO; they vary by force.

(29) Hana-wa (Yuya-ni) [PRO supiichi-o si/su-*tai/yoo/ro/ru/yoo*-to]
Hana-TOP Yuya-DAT speech-ACC do-OPT/INT/IMP/PRM/EXH-COMP
it-ta.
say-PST

(27) to (29) reveal that the same embedding context brings about distinct control effects, depending on the force of the embedded complement. This suggests a more independent status of the control complement and the interpretation of PRO from the embedding predicate than what has previously been assumed.

5. Some native speakers of Japanese say that (28) with the exhortative sounds better with an overtly expressed comitative phrase such as *Yuya-to* 'Yuya-with' in the matrix clause.

Importantly, however, I do not intend to argue that the lexical semantics of the matrix predicate has no effects on the embedded force. It restricts the range of complement forces by semantic selection so that some predicates (e.g. *meireisuru* 'order' and *sijisuru* 'instruct') may only co-occur fully felicitously with imperatives among the five forces discussed. Some (e.g. *negau* 'hope' and *nozomu* 'hope') are fully compatible only with optative complements, but some others such as *omou* 'think' and *iu* 'say' typically allow various complement forces. Thus, the embedding predicate does exert nontrivial influence on the embedded force, but it does not *assign* force to the complement in the way the finite tense in English assigns nominative case to the subject.

Such a nonbiunique relationship is characteristic of s-selection in general. As discussed in Grimshaw (1979), the predicate *find out* may select three semantic types, propositions, exclamatives and questions, while the predicate *be surprised at* selects propositions and exclamatives. It appears that the embedding predicates cannot fully determine the complement force. Some predicates such as *wonder* may only select interrogatives, but such a one-to-one relationship seems to be not obligatory in selection.

This is perhaps the right place to mention that many of these attitude predicates also take *-koto* and *-yooni* complements. These complementizers do not occur with the above force suffixes, contrasted to the *-to* complementizer appearing in the above examples. Relevant for the present discussion is that, under certain predicates, a subject or object control-like reading is strongly preferred for *-koto* and *-yooni* complements. However, both *-koto* and *-yooni* complements allow an overt subject which does not necessarily overlap in reference with a higher argument (Matsuda 2019; Uchibori 2000). This seems to indicate that they are structurally control-neutral, patterning with English finite complements, contrasted to the speech-act complements with *-to*, which I take to be control-inducing structures in the sense of Stiebels (2007).[6] In addition, *-koto* and *-yooni* complements seem to allow non-*de se/te* readings even when there is a control-like effect, suggesting that they at least do not fall under PC.[7]

Another issue that deserves mention here is that *-to* complements are not homogeneously control-inducing. They give rise to a specific control reading only when the force suffixes appear on the predicates. It is the constituent projected under *-to* that induces control. *-To* complements allow an overt subject which does not referentially overlap with a higher argument, but in such cases the force suffixes

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6. I thank one of the reviewers for reminding me of this paper.

7. See Uchibori (2000) for an extensive investigation on *-koto* and *-yooni* complements. She analyzes them to be comparable to subjunctives in Romance languages.

do not appear. A well-known observation on *-to* complements is that they only allow nonfactive readings (Kuno 1973). I speculate that the *-to* complementizer is a marker of attitude reports in general, where the reports may be about *de se/te* or non-*de se/te* attitudes.[8] The above force-suffixed complements correspond to *de se/te* attitudes, falling under PC; but *-to* may embed non-*de se/te* attitudes which do not involve control. Also, as we will see, *-to* does not normally occur in roots.

2.5 Forces in roots

The above force suffixes not only appear in PC complements but also occur in root environments, and their interpretative behaviors are quite revealing of how the interpretation of PRO in PC might be derived.

I benefitted greatly from Portner's (2004) notion of the To-Do List in associating the force with the subject reference. He defines the To-Do List as a set of properties one is committed to bringing about. For Portner, the discourse function of an imperative is to add a property denoted by the predicate to the To-Do List of the addressee, that of a promissive is to add a property to the speaker's To-Do List, and that of an exhortative is to add a property to the speaker's and addressee's To-Do Lists. Zanuttini et al. (2012) successfully illustrate a correlation between force and subject reference based on Korean data. An imperative subject, null or overt, includes the addressee of the utterance context in its reference, a promissive subject includes the speaker, and an exhortative subject includes both the speaker and addressee. Japanese imperatives, promissives and exhortatives pattern with their observation of Korean counterparts.

Observe the contrast in the data below.

(30) {*Watasi/*Watasitati/Omae/Omaetati/*Kare/*Karera}-wa hayaku
{I/We/You/You.PL/He/They}-TOP soon
ronbun kak-e!
paper write-IMP
'I/We/You/You/He/They write that paper soon!'

(31) {Watasi/Watasitati/??Anata/??Anatatati/??Kare/??Karera}-wa
{I/We/You/You.PL/He/They}-TOP
hatiji-ni kaer-u.
eight-at go.home-PRM
'I'll/We'll/You'll/You'll/He'll/They'll go home at eight.'[9]

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8. *-To* is also a marker of quotations.

9. We focus on the promissive use of *-(r)u* here as discussed shortly.

(32) {Watasitati/??Anatatati/*Karera}-wa shukudai si-yoo.
{We/You.PL/They}-TOP homework do-EXH
'Why don't we/you/they do our/your/their homework.'

(30) illustrates that the imperative subject must include the addressee but exclude the speaker. In imperatives, the vulgar form second-person pronouns, *omae* and *omaetati*, sound more natural than the politer second-person pronouns, *anata* and *anatatati*. Note that imperatives as well as optatives, intentives, promissives and exhortatives are most natural with null subjects, but overt subjects are possible with a contrastive or emphatic interpretation. I present data with overt subjects in this section for expository purposes albeit their nonneutral readings.

In contrast to the imperative, the promissive in (31) is fully felicitous only with a subject inclusive of the speaker but exclusive of the addressee. The -(*r*)*u* morpheme is mostly known as a nonpast tense marker. However, it is also acknowledged as a marker used to notify others of the speaker's decisions and commitments (Adachi 2002; Moriyama 2000; Nitta 1991). I focus on this promissive usage of -(*r*)*u*. For instance, a girl might quite naturally utter (31) with the first-person subject *watasi* 'I' addressed to her boyfriend after dinner at a restaurant; but nonspeaker subjects bring about degradation ((31) is adapted from Adachi 2002: 38). Importantly, in (31), the acceptable *watasitati* 'we' is interpreted as exclusive first person (*I* plus others) but not as inclusive first person (*I* and *you* plus optional others).

The exhortative in (32) behaves just like *let's* in English. It is fully acceptable when the subject includes both the speaker and addressee of the speech context. The acceptable *watasitati* 'we' here is interpreted as inclusive first person.

I extend this line of analysis to intentives and optatives. The intentive -(*y*)*oo* is minimally distinct from the exhortative -(*y*)*oo* in that it is used essentially in monologues or self-thinking, where the addressee is not existent in the context (Adachi 2002; Fujii 2006).[10] In contrast, the exhortative must be used in a context where the addressee is present. This contrast bears syntactic significance as discussed in a later section. Now consider (33).

(33) {Watasi/Watasitati/??Anata/??Anatatati/*Kare/*Karera}-wa hayaku
{I/We/You/You.PL/He/They}-TOP soon
ronbun kak-oo.
paper write-INT
'I'll/We'll/You'll/You'll/He'll/They'll write that paper soon.'

10. Note that someone may overhear a speaker's monologue, but the overhearer does not count as an addressee because the speaker does not intend to communicate his utterance to the overhearer.

The intentive is fully felicitous only when the subject includes the speaker but excludes the addressee. The acceptable *watasitati* 'we' here is interpreted as the exclusive first person.

Lastly, in sentences like (34), adapted from Nitta (1991: 30), the *-tai* optative suffix only occurs fully felicitously with a subject referring to the speaker of the utterance (Kuno 1973; Kuroda 1973; Nitta 1991). To my ears, *watasitati* 'we,' intended to be exclusive first person is not perfect but still acceptable contrasted to more degraded second/third-person subjects.

(34) {Watasi/?Watasitati/??Anata/??Anatatati/??Kare/??Karera}-wa
{I/We/You/You.PL/He/They}-TOP
sake-ga drink-tai
sake-NOM nomi-OPT.
'I/We/You/You/He/They want(s) to drink sake.'

The basic picture we have seen in this subsection is summarized in (35): +speaker indicates that the reference of the subject includes the speaker of the utterance context, −speaker the exclusion of the speaker, and likewise for the ±addressee notations.

(35)

Optative:	+speaker (−addressee)	
Intentive:	+speaker	= *monologue*
Imperative:	−speaker +addressee	
Promissive:	+speaker −addressee	
Exhortative:	+speaker +addressee	

Intentives are distinguished from promissives and exhortatives for their addressee value being underspecified. The addressee specification is superfluous in monologues or self-thoughts. The optative may be uttered in either a monologue or conversation, but when it is uttered in a conversation, it must exclude the addressee from its subject reference. The '−addressee' specification is indicated in parentheses for this reason.

We sometimes observe exceptions to the above patterns, and the judgments are not crystal clear in some instances, which I cannot address here due to space limitations (but see Matsuda 2019). Nevertheless, (35) will be the key paradigm for this study.

In response to the questions asked by the reviewers, I will address some other issues here. The *-tai* optative morpheme is not exclusively a force marker, but in my view, it comes to function as a force marker by derivation. *-Tai* is a bound adjective, suffixed to a verbal stem, lexically expressing one's wish and desire to do something

or to be in some state.[11] It allows tense alteration (nonpast *-ta-i* vs. past *-ta-katta*), suggesting that it enters the derivation on a head below T, presumably on an aspectual head. I assume, building on Inoue (2007) and Ueda (2008), that this optative head in certain conditions raises to a head in the CP domain to exert its discourse function. Intriguingly, only when it is in the nonpast form in affirmative sentences without any epistemological modal expressions (e.g. *daroo*, predictive 'will'), do the speaker-inclusive subject restrictions apply (Kuno 1973; Kuroda 1973). Roughly, the optative *-ta* head adjoins to a nonpast T(*-i*) and then to a modal head M(Ø) and to C(Ø) when T is nonpast and involves an affirmative epistemological modality as shown in (36). I assume that the zero morphology on M indicates a modality of the affirmation, following Inoue (2007) and Ueda (2008). Note that Japanese is a head-final agglutinative language.

(36) $[_{CP}\ [_{MP}\ [_{TP}\ [_{AspP}\ t_{Asp(ta)}]\ t_{Asp\text{-}T(ta\text{-}i)}]\ t_{Asp\text{-}T\text{-}M(ta\text{-}i\text{-}Ø)}]$ Asp-T-M-$C_{(ta\text{-}i\text{-}Ø\text{-}Ø)}]$

As a result, an Asp-T-M-C complex is formed, and this complex behaves on a par with other force markers such as *-(y)oo* and *-e/ro* which, I assume, merges on C. Japanese has a variety of modal expressions, and how they interact with one another and with tense, aspect and speech act is a very complicated and intricate issue. (36) exemplifies a simplified skeletal picture but is sufficient to express my core contention.

I mentioned that the suffix *-(r)u* displaying a promissive force is widely used as a nonpast marker; it has a past tense variant, *-ta*. I assume that *-(r)u* enters the derivation on T and raises to M and to C in the same conditions (nonpast and affirmation) as the optative *-tai*. The speaker-inclusive restrictions and promissive readings only arise under such conditions.

As such, the morphological contrasts we are observing involve a complex head (Asp-T-M-C, at least) derived from head-raising and adjunction, which could be summarized as Table 1. It is organized in a new order to emphasize the featural contrasts.

At C level, –speaker seems to be realized as *-e/ro* and +speaker as either *-(y)oo* or Ø, depending on the addressee feature: +addressee or no specification is realized as *-(y)oo*, and –addressee takes the ø morphology. The contrast between *-(r)u* and *-tai* arises from TP-internal elements, but they exert their discourse function when they adjoin to C via M. One may notice that the subject restrictions for optatives in monologues are nondistinct from intentives, and also that those for optatives in communication are nondistinct from promissives. However, the lexical content of

11. The optative suffix takes the form *-itai* after a consonant-ending verb stem and *-tai* after a vowel-ending verb stem. *-Tai* is in fact a nonpast form of the root *-ta* with *-i*, an adjectival nonpast suffix. We have another related form *-ta-garu*, 'show a sign of desire,' used to express non-first-person wishes and desires (see Kuno 1973).

Table 1. Morphology, person restrictions, and force

Asp	T	M	C			
Ø	-Ø	-Ø	*-e/ro*	–speaker	+addressee	imperative
Ø	-Ø	-Ø	*-(y)oo*	+speaker	+addressee	exhortative
Ø	*-(r)u*	-Ø	-Ø	+speaker	–addressee	promissive
-ta	*-i*	-Ø	-Ø	+speaker	(–addressee)	optative
Ø	-Ø	-Ø	*-(y)oo*	+speaker		intentive

the *-tai* morpheme (wish and desire) is retained even when it moves to C, and this interpretably distinguishes optatives from intentives and promissives.[12]

Lastly, notice that these forces all involve a zero morphology on M. This leaves us with a question of whether they all share the same type of affirmative modality. Although it is plausible that they do, such an issue requires much deeper consideration, which is beyond the scope of this study. The rest of the paper will focus on the contrasts in their subject restrictions.

3. Interim summary

The central concern of the present study is to account for PC phenomena observed in the structures involving attitude predicates, where the reference of PRO may not be identical with but not disjoint from the reference of a higher argument and is read obligatorily *de se*. Apparently, such properties of PC PRO resemble those of the first/second-person pronouns (Section 1). In fact, in Japanese, the first/second person-*ness* of PRO is lurking in the force suffixes in the control complements.

We saw in Section 2.1 that some Japanese attitude predicates embed complements with various overtly expressed forces, which correlate with how PRO is interpreted: promissive embedding gives rise to subject control, imperative embedding brings about object control, and so on. The correlation is summarized in (11) to (15). Sections 2.2 and 2.3 illustrated that such structures allow partial control, necessitate *de se* readings of PRO, and, thus, seem to fall under PC. We then discussed that although such observation may lead one to assume PC is reducible to semantic

12. Another related fact, well-known due to Kuno (1973) and Kuroda (1973), is that when the optative *-tai* occurs in interrogatives in the nonpast form without modal expressions, the subject inclusive of the addressee, *not* the speaker, becomes the only fully acceptable option. Intriguingly, the intentive/exhortative -(*y*)*oo*, but *not* the imperative *-e/ro*, may appear in the interrogative form (-(*y*)*oo-ka*), but their subject restrictions do not change. The -(*r*)*u* suffix occurs in interrogatives, where its promissive subject restrictions are lost. These facts seem to open up a fruitful area of study for understanding interrogative control. I leave this issue to future research.

selection of complement force by the matrix predicate, this does not seem to be the whole story. Some predicates s-select more than one force type, and the interpretation of PRO varies by complement force even when the predicate is kept constant. Thus, although the semantic selection seems to narrow down the range of options for complement force types, it does not fully determine precisely which force type the predicate must embed (2.4).

Lastly, in Section 2.5, we looked into how the subject is interpreted when those force suffixes appear in roots. We observed that each force type is fully felicitous only when the subject reference includes the speaker and/or the addressee of the utterance context, as summarized in (35) and Table 1.

4. Extension to English

This section explores the possibility that English PC also involves force embedding. It seems that such an assumption makes the key properties of English PC accountable in a systematic way.

In fact, the connection between control complements and illocutionary force has been suggested by various previous authors. Postal (1970) mentioned that infinitival complements of certain control predicates appear to involve a nondeclarative force. In his view, for instance, the complement of *order* as in (37a) involves the linguistic performance of an imperative, whereas that of *promise* as in (38a) expresses a promissive force. Postal's suggestion was that these control structures are the indirect discourse versions of the parallel direct discourse structures as in (37b) and (38b) respectively.

(37) a. Harry ordered Betty to leave.
b. (You) leave, Harry ordered Betty.

(38) a. Harry promised Betty to leave.
b. I will leave, Harry promised Betty. (Postal 1970: 495–6)

Some studies on imperatives have drawn on the notion of PRO to account for the behaviors of imperative subjects. For instance, Potsdam (1996) describes the interpretative properties of imperative subjects by appealing to Farkas's (1988) *Resp* relation, which is proposed to account for the interpretation of PRO. Han (2000) is also known for her proposal that the imperative subject is PRO.

As such, the present attempt could be taken as a modernized version of these previous suggestions, more specifically targeted at capturing the nature of PC effects.

4.1 Subject, object and split control

Let us hypothesize then that the English PC complements covertly bear a non-declarative force like the Japanese counterparts. Such an analysis could be exemplified in sentences (39) to (43).

(39) Tokiko hoped [$_{\text{OPT}}$ PRO$_{\text{+Sp (–Ad)}}$ to go to Hawaii].

(40) Asako decided [$_{\text{INT}}$ PRO$_{\text{+Sp}}$ to go to Hakone].

(41) The teacher ordered Tokiko [$_{\text{IMP}}$ PRO$_{\text{–Sp +Ad}}$ to submit her homework].

(42) Tokiko promised the teacher [$_{\text{PRM}}$ PRO$_{\text{+Sp –Ad}}$ to submit her homework].

(43) Tokiko proposed to Yuya [$_{\text{EXH}}$ PRO$_{\text{+Sp +Ad}}$ to go to school].

We could see subject control as involving optative embedding (39), intentive embedding (40) or promissive embedding (42), object control as imperative embedding (41), and split control as exhortative embedding (43). Furthermore, I posit that the subject restrictions we observed in Section 2.5 are morphologically specified as indexical features on a projection internal to PRO.

This way of thinking suggests that the reference of PRO, say in (42), must include the speaker but exclude the addressee, whereas that of PRO in (41) must include the addressee but exclude the speaker. It is obvious, however, that the semantic values of the speaker and addressee do not correspond to those of the speaker and addressee of the entire utterance context. One important assumption is that the semantic values of the speaker and addressee shift from the root context to the embedded context. The values for the subject in roots are anchored to the utterance context; for PRO in the complement, the values are anchored to the matrix context, i.e. the reported speech event or mental state expressed in the matrix clause. In a way, the speaker and addressee notions for PRO correspond to Amharic and Zazaki indexicals with shifted interpretations (Anand & Nevins 2004; Schlenker 2003; see 5.2 for how syntax sees the shift). Note that the *speaker* is a wide notion including the speaker of speech and the attitude holder of various mental attitudes such as beliefs and expectations.

Importantly, the notion of speaker is *not* equivalent to that of first person. In languages like English, PRO with a shifted speaker or addressee feature does not necessarily fall under the first or second person. In fact, in (41) and (42) above, the third person possessive *her* appears, suggesting that PRO is in third person. In (44) below, the reflexive *herself* indicates that PRO is in third person.

(44) Asako told Tokiko [$_{\text{IMP}}$ PRO$_{\text{–Sp +Ad}}$ to behave herself].

This, however, does not contradict the proposed assumption. The contention here is that PRO has a hidden indexical feature in its internal projection, contributing to its interpretative restrictions (see 5.2).

In this framework, we could take the speaker feature on PRO in (41) as designating the referent of *the teacher*, and the addressee feature, that of *Tokiko*. The −speaker +addressee feature combination correctly predicts object control for (41). Similar assumptions predict subject control for (39), (40) and (42), and split control for (43). Recall that the matrix predicate and the complement force are not always in a biunique relation. For example, predicates like *propose* as well as other communication verbs such as *shout* and *signal* seem to be compatible with at least three force types, promissive, imperative and exhortative, allowing subject, object and split control respectively. This accounts for some instances of control shift (e.g. (2)).

4.2 Partial control

Partial control is a natural consequence under the current force-embedding view. Recall from Section 2.5 that +speaker does not indicate an identical reference to the speaker but only the inclusion of the speaker in its reference. Only when the cardinality is one, will its reference be identical to the speaker; −speaker indicates the exclusion of the speaker, and likewise for ±addressee features. As such, PRO, in the proposed view, may refer to any set of individual(s), a singleton or not, inclusive of the speaker, addressee or both of a shifted context. The reference options for PRO in (41), for instance, are restricted to sets of individuals inclusive of Tokiko and exclusive of the teacher, and likewise for the other instances of PRO in (39) to (43). A subset relation holds between the speaker/addressee of the relevant context and PRO. Such subset relations are just what PC displays.

PC does not necessitate a partial reading. It allows both exhaustive and partial readings if no information is given intra-sententially or extra-sententially that forces either reading. Ambiguity or, more precisely, vagueness arises in some cases. Consider (45) adapted from Pearson (2013).

(45) Mary asked John$_i$ [PRO$_{i/i+}$ to move the piano].

In (45), if John is considered strong enough to move the piano, an exhaustive reading obtains but otherwise it brings about a partial reading.

The subset relation between John and PRO in (45) parallels the subset relation between the addressee and the imperative subject as in (46), taken from Potsdam (1996: 207).

(46) You and your men be on guard for anything suspicious!

A collective predicate such as *work together* can disambiguate the interpretations in (47). It only allows a partial reading because the embedded predicate *work together* requires a subject that is at least semantically plural.

(47) Mary asked John$_i$ [PRO$_{i+}$ to work together].

Lastly, with this approach to partial control, we can dispense with the sum notion for split control like (43). Having a +speaker and +addressee feature combination implies a narrowing down of referential options for PRO but not the sum of references. That is, from all sets of individuals inclusive of the speaker, it selects only those sets that also include the addressee.

It seems that assuming force embedding for PC allows us to account for both canonical and noncanonical interpretations of PRO, not only in Japanese but also in English.

5. How does the force arise clause-internally?

So far, I have expressed the view that PRO in attitude complements in PC both in Japanese and English may have ±speaker ±addressee features which correlate with complement force. In Section 2.4, I suggested that the force may arise inside the complement. This section discusses a possible syntactic option for how this may come about. The entire picture of my proposal cannot be presented here due to space limitations, but I will provide an overview of my major contentions.

5.1 A force-specific head?

Previous literature has often assumed a special head such as an imperative T or C that encodes the second-person restrictions of imperative subjects (Bennis 2007; Jensen 2003). Zanuttini et al. (2012) generalize such analyses to what they call *jussives* which include promissives and exhortatives as well as imperatives focusing on Korean data. They posit a jussive head, which is located in between T and C and comes in three varieties: one hosts a first-person feature, another one a second-person feature, and yet another one an inclusive first-person feature. They correspond to promissives, imperatives and exhortatives respectively. In essence, they assume that the jussive head with the help of T semantically binds and syntactically agrees with the subject, resulting in the person restrictions of the jussives.

Such a proposal perhaps straightforwardly accounts for where PRO receives its person features from. PRO may receive them by being bound to the jussive head. Some of my previous works, in fact, employed this view (Matsuda 2015a; b).

I posited $C_{imperative}$, $C_{promissive}$ and so on with corresponding indexical features to account for the interpretative restrictions of the subject. Nevertheless, I have come to realize that such a system presupposes too many varieties of jussive or C heads, which are all in a way force-specific. Furthermore, the jussive view requires that the jussive subjects enter the derivation as a minimal pronoun in the sense of Kratzer (2009). They lack a person feature so that they can be bound by the jussive head without a presuppositional clash; however, the issue as to what determines the merger of a minimal pronoun to the derivation in the first place, i.e. before the merger of the jussive head, seems to be not easily solvable. We could assume that all first/second-person pronouns are bound by an operator in line with authors such as Baker (2008) and Sigurðsson (2010), but the question of what determines which minimal pronoun is to be bound by the first- or the second-person operator still remains a puzzle.[13]

For these reasons, I opted for a different analysis in my recent work (Matsuda 2019), where I contended that PRO as well as the subjects of the speech-act forces enter the derivation with indexical ±speaker ±addressee features, and in the course of derivation, they contribute to bringing about the clausal force. I also assume that overt first/second person pronouns such as the English *I, we* and *you* enter the derivation with indexical features.

5.2 Indexical agreement

As mentioned earlier, a crucial notion in my proposal is that the speaker and addressee features are not equivalent to the first/second-person features. Under the proposed framework, although PRO and other speech-act subjects enter the derivation with ±speaker ±addressee features, they still lack *person* (i.e. first, second or third). A +speaker feature just says that the reference of the pronoun must include the speaker of some context, not necessarily the actual root context. A +speaker feature is defined as the first person only when it is identified with the speaker of the actual context. In the other cases where it is identified with the speaker (or the attitude holder) of a shifted context (i.e. an embedded attitude context), it falls under the third person at least in languages like English.[14] Observe (48), from Heim (2008).

(48) $[\![1st]\!]^c = \lambda x_e$: x includes $speaker_c$. x

13. However, I resorted to the minimal pronoun approach in Matsuda (2017b).

14. There are languages such as Amharic and Zazaki that allow both the actual and a shifted speaker to fall under first person in certain environments (Anand & Nevins 2004; Schlenker 2003).

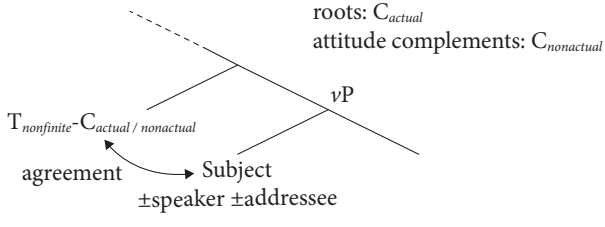
I focus on the subscript *c*, indicating the context of the utterance. This implies that even if the pronoun includes the speaker of a shifted context *c'*, it does not fall under the first person. Another important thing (48) shows is that first-person pronouns are not constants. They are not bound variables but free variables in that their values depend on the context: their values shift with a context.

I assume that a C head in the lower CP domain is responsible for this identification process. In typical root contexts, this C head hosts a tuple of context coordinates such as speaker$_c$, addressee$_c$, time$_c$ and place$_c$, which define the *actual* context of utterance. They exemplify *I, you, now* and *here* respectively of the actual root context. In attitude complements, the C head hosts the coordinates of a *non*-actual reported context: speaker$_{c'}$, addressee$_{c'}$, time$_{c'}$ and place$_{c'}$ (see Bianchi 2003; Schlenker 2003; Sigurðsson 2010).

In the proposed system, a finite T being anchored to the Reichenbachian S point, or *now* of the root speech act, is assumed to be independently capable of determining person via T-subject agreement, which licenses overt nominative subjects; but a nonfinite T lacks this ability due to its lack of anchoring to the S point. Lacking the S point implicates that T is unable to determine whether or not a speaker feature, for instance, is indexed to the actual speaker (see Bianchi 2003).

For this reason, in imperatives and other related forces, which I assume to have a nonfinite T, T raises and adjoins to C, and the resulting T-C complex agrees with the subject as shown in (49). In roots, C hosts *actual* context coordinates such as speaker$_c$ and addressee$_c$, abstracting away from time and place coordinates. In attitude PC complements, C represents *nonactual* coordinates such as speaker$_{c'}$ and addressee $_{c'}$.

(49) Indexical agreement



Via T-C adjunction and their joint agreement with the subject, the indexical features on the subject are evaluated against the context tuple on C. I posit that in roots with *actual* C, the indexical features result in bearing a subscript *c*. If the subject has entered the derivation with −speaker +addressee, both sides of the agreement end up with −speaker$_c$ +addressee$_c$, which fall under the second person.[15] From

15. More precisely, these features only say that any subject inclusive of the addressee of the actual utterance context is compatible.

this process (with another step discussed in the next section) stem the imperative force and the imperative subject restrictions. When T adjoins to *nonactual* C in PC complements, the T-C complex and the subject result in a feature combination, $-\text{speaker}_{c'}$ $+\text{addressee}_{c'}$, which is not in the second person but still requires that the subject (PRO) include the addressee of the nonactual reported attitude context.

This C-level indexical agreement is overtly realized in Japanese. Although I abstract away from aspectual and modal projections here, we saw in Table 1 in Section 2.5 that an Asp-T-M-C complex is realized by various suffixal morphemes in Japanese. In this language, the C-level agreement realizations do not seem to distinguish speaker_c from $\text{speaker}_{c'}$, or addressee_c from $\text{addressee}_{c'}$. That is, indexical agreement with actual C and nonactual C does not bring about morphological contrasts; imperatives and related forces are realized by identical suffixal morphemes in roots and embedded complements (compare (5) to (9) with (30) to (34)). This makes force embedding visible.

I assume that, in PC complements, the *-to* complementizer sits on a higher C (C_2), marking an attitude report. The Asp-T-M-C_1 complex further adjoins to C_2, which results in having an Asp-T-M-C_1-C_2 complex at the clausal edge. The selectional relationship holds between the matrix predicate and the derived complex head. In roots, there is no overt complementizer, but I hold that the Asp-T-M-C_1 complex still adjoins to C_2 and that the derived complex determines the force of the entire utterance.

Note that underspecification of an addressee feature for the intentive *-(y)oo* is due to the context tuple on C_1 lacking an addressee coordinate; intentives are monologues so that C_1 would not host an addressee coordinate.

5.3 Creating a *de se/te* property

Building on Portner (2004), another step that would be necessary to derive the speech-act forces under discussion is to create a property out of a proposition. The same step seems to account for the obligatorily *de se/te* reading of PRO in PC complements. The present framework builds on previous studies on *de se* attitude reports including Chierchia (1990); Lewis (1979), Percus & Sauerland (2003a; b), and Pearson (2013).

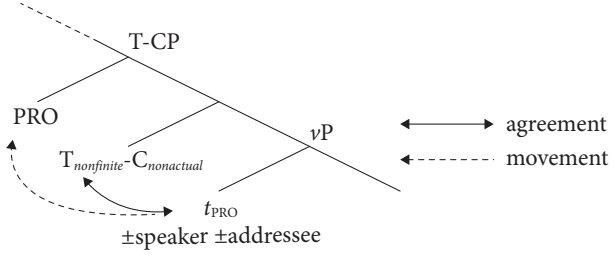
For instance, Chierchia (1990) contends that control complements involving *de se* attitude reports denote properties. At first blush, this may appear to suggest that control complements have a reduced syntactic structure like a VP. However, Chierchia's proposal is just the opposite. He posits a null operator above a proposition-denoting TP, which abstracts over the subject as illustrated in (50).

(50) John$_i$ hopes [Op$_i$ PRO$_i$ to win the election].

Percus and Sauerland (2003a; b) extend this view and suggest that PRO and other *de se*-denoting overt pronouns (e.g. *he* with a *de se* reading) behave like a relative pronoun in that they move to the clausal edge for abstraction.

My framework employs Percus & Sauerland's (2003a; b) suggestion. I assume that, after agreement with the T-C complex head, PRO moves to Spec T-CP and behaves like a relative pronoun as in (51). This creates a CP that denotes a property ascribed to PRO. PRO in this position can be assimilated to the relative pronoun *who* with additional ±speaker$_{c'}$ ±addressee$_{c'}$ features.

(51)



Although PRO in (51) may seem to be a constant, it is not. PRO patterns with first/second-person pronouns in that it is a context-dependent variable (see discussion around (48)). Its value is dependent on extra-clausal information typically provided by the matrix clause. In (50) above, a speaker feature on PRO would designate John, but in another sentence like *May hopes to win*, it would designate Mary.

I hold that the same movement derives a property-denoting CP for the target root speech-act forces. A clause exerts a specific force depending on the features of the subject. I presuppose no force-specific head, like C$_{imp}$, but the force derives compositionally in a bottom-up manner.

6. Associative structure

Departing from the minimal pronoun view allows us to assume that PRO as well as root speech-act subjects start their lives with a full-fledged multifunctional structure comparable to first/second-person pronouns. In the introduction, I mentioned that PC effects may be reducible to the associative plural semantics of first/second-person pronouns. This section briefly addresses this issue, directly building on Vassilieva (2005, 2008).

Vassilieva focuses on nonpronominal associative plurals in the world's languages like the Bulgarian Example (52) below.

(52) Peš-ov-i (Bulgarian)
Peter-POSS/ADJ-PL
'Peter and family' (Vassilieva 2005: 21)

Associative plurals are different from additive plurals. While an additive plural *dogs* refers to multiple dogs, an associative plural such as Bulgarian *Peš-ov-i* 'Peter and family' does not designate multiple individuals all named Peter. It refers to a group of individuals inclusive of Peter; typically, the overtly expressed individual, Peter, is the most salient member of the group. Vassilieva extensively studies the morphological makeups of associative plurals like (52) in various languages and proposes the following associative plural structure (53) (adapted from Vassilieva 2008: 239).

(53) $[_{DP1}\ [_{DP2}$ focal referent$]_i$ D^0 $[_{NumP}$ Num^0+Pl $[_{XP}$ t_i $[_{NP}$ N^0+human$]]]]$

She assumes two nominal elements in the structure. One nominal refers to the most salient member, or *the focal referent* (*Peter* in (52)); the other nominal has [+human] nondescriptive group reference. She posits a [+human] requirement, based on the fact that associative plurals mostly designate human groups. In her analysis, the focal referent behaves like prenominal possessives and demonstratives. It originates in a modifier projection (XP in (53)) and moves to Spec DP, where it licenses a null determiner. Roughly, an associative plural expression like *Peš-ov-i* 'Peter and family' is structurally represented as 'Peter's group.'

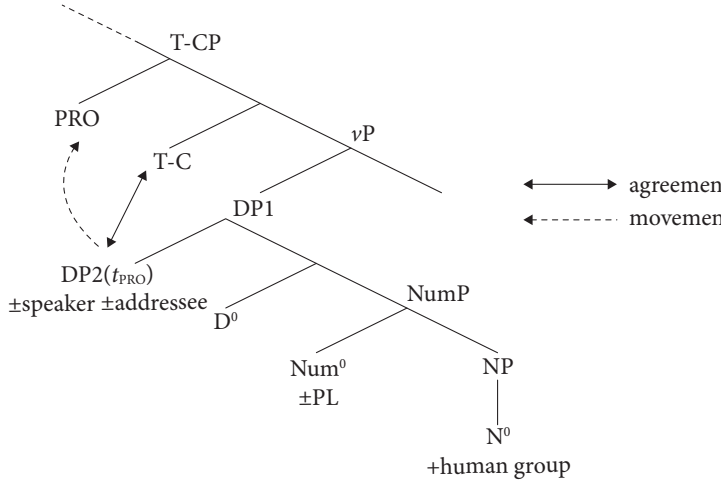
Vassilieva extends this structure to first/second-person plural pronouns such as *we* and *you*.PL, which also display associative semantics. (54a, b) exemplify simplified structures of her proposal (adapted from Vassilieva 2005: 50).

(54) a. *we*: $[_{DP1}\ [_{DP2}$ the speaker$]$ D^0 $[_{NumP}$ Num^0+PL $[_{NP}$ N^0+human$]]]$
b. *you*.PL: $[_{DP1}\ [_{DP2}$ the addressee$]$ D^0 $[_{NumP}$ Num^0+PL $[_{NP}$ N^0+human$]]]$

In essence, *we* is represented as a speaker's group, and *you*.PL as an addressee's group. We may posit another structure with the speaker and addressee at DP2 for the inclusive *we*. Note that Vassilieva's proposal is in line with other representative works on personal pronouns such as Déchaine & Wiltschko 2002 and Harley & Ritter 2002. They all posit hierarchical multifunctional projections, in which discourse-related elements sit in the left peripheral position.

The present study proposes that PRO originates with a structure similar to (54a, b); but PRO is null due to its agreement with a nonfinite T (a $T_{nonfinite}$-$C_{nonactual}$ complex). Another crucial element of my proposal is that indexical agreement and operator movement that we saw in the previous section do not target the entire subject DP. They only target the Spec DP node (DP2), where the focal referent sits in associative plurals. This is illustrated in (55).

(55)



This brings about a partial control effect, allowing the reference of the subject to include the speaker/addressee of a relevant context plus some others who are in some way conceived of as members of the speaker's or the addressee's group.[16] The structure does not exclude exhaustive control readings because the notion of group (or set) includes singletons: subset relations do not exclude identity relations.

A remaining issue is how to account for the observation that PC PRO is only semantically plural but syntactically singular (Landau 2000 et seq.). Example (56) below is unacceptable to some speakers for this reason.

(56) % Harry$_i$ preferred {PRO$_{i+}$ to meet each other at six / to become members of the new club}.

I speculate that the number feature of the subject is not interpreted because indexical agreement only targets the Spec DP node (DP2) and does not agree in number with the entire DP. If the Spec DP node involves a plurality, however, as in the cases of split control like (57), a plural predicate is acceptable (as observed in Landau 2000).

(57) Harry$_i$ proposed to Betty$_j$ PRO$_{i+j}$ to help each other.

This is a speculation at this stage but looking more closely into the internal structure of PRO may provide a solution to this issue.

16. We could either say the entire subject DP is PRO or the moved Spec node is PRO. It is just a matter of terminological choice. The system works either way.

7. Remaining issues and conclusion

The traditional literature often assumes that the interpretation of PRO is determined by the lexical properties of the embedding predicates. However, the present paper has provided evidence from Japanese which reveals the important contributions of embedded constituents. The embedding predicates undoubtedly play an indispensable role in selecting what types of complements they may occur with, but this study focused on the fact that complements also play a significant role.

There are various remaining issues left unaccounted for. To name a few, what accounts for the fact that root imperatives in English allow either a null or overt subject, but PRO must be null? Imperative subjects seem to permit a plural reflexive (*yourselves*) even in *partial* imperatives like (46), but PRO does not. What is responsible for such contrasts? Also, as mentioned in Landau (2015), PC-like logophoric effects are observed in certain adjunct control structures. How can such effects be captured by the present analysis? These issues and many others need to be solved in future research.[17]

Very broadly, the present study can be taken as an attempt to demonstrate how multiple morphosyntactic elements, each placed in a specific structural position, conspire in bringing about interpretative restrictions on PRO. There may be other options, perhaps better options, to meet this goal. Nonetheless, in the process of teasing apart the role of each element, I have come to think that even the internal makeup of PRO may play an important part in narrowing down the options for its own semantic values. Even though PRO has mostly been considered as lacking its own agreement features such as person and number, it may originate with some primitive agreement features. It seems worth exploring at least what type of internal configurations PRO may have and how that may contribute to control interpretations.

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References

Adachi, Taro. 2002. Isi-kanyu no modaritii (Modality of intentions and exhortations). In *Modaritii* (Modality) [Sin Nihongo Bunpoo Sensho 4], Yoshio Nitta, Takashi Masuoka & Yukinori Takubo (eds), 18–41. Tokyo: Kuroshio.

Anand, Pranav & Nevins, Andrew. 2004. Shifty operators in changing contexts. *Semantics and Linguistic Theory* 14: 20–37. https://doi.org/10.3765/salt.v14i0.2913

Baker, Mark C. 2008. *The Syntax of Agreement and Concord*. Cambridge: CUP. https://doi.org/10.1017/CBO9780511619830

Bennis, Hans. 2007. Featuring the subject in Dutch imperatives. In *Imperative Clauses in Generative Grammar: Studies in Honour of Frits Beukema* [Linguistik Aktuell/Linguistics Today 103], Wim van der Wurff (ed.), 113–134. Amsterdam: John Benjamins. https://doi.org/10.1075/la.103.04ben

Bianchi, Valentina. 2003. On finiteness as logophoric anchoring. In *Temps et point de vue*, Jacqueline Guéron & Liliane Tamowski (eds), 213–246. Nanterre: Université Paris X.

Chierchia, Gennaro. 1990. Anaphora and attitude *de se*. In *Semantics and Contextual Expression*, Renate Bartsch, Johan van Benthem & Peter van Emde Boas (eds), 1–32. Dordrecht: Foris.

Crnič, Luka & Trinh, Tue. 2009. Embedding imperatives in English. *Proceedings of Sinn und Bedeutung* 13(1): 109–124.

Cysouw, Michael. 2003. *The Paradigmatic Structure of Person Marking*. Oxford: OUP.

Déchaine, Rose-Marie & Wiltschko, Martina. 2002. Decomposing pronouns. *Linguistic Inquiry* 33(3): 409–442. https://doi.org/10.1162/002438902760168554

Farkas, Donka F. 1988. On obligatory control. *Linguistics and Philosophy* 11(1): 27–58. https://doi.org/10.1007/BF00635756

Fujii, Tomohiro. 2006. Some Theoretical Issues in Japanese Control. PhD dissertation, University of Maryland.

Fukui, Naoki. 1986. A Theory of Category Projection and Its Applications. PhD dissertation, MIT.

Grano, Thomas. 2012. Control and Restructuring at the Syntax-Semantics Interface. PhD dissertation, The University of Chicago.

Grimshaw, Jane. 1979. Complement selection and the lexicon. *Linguistic Inquiry* 10(2): 279–326.

Halle, Morris & Marantz, Alec. 1993. Distributed morphology. In *The View from Building 20: Essays in Linguistics in Honor of Sylvain Bromberg*, Kenneth Hale & Samuel Jay Keyser (eds), 111–176. Cambridge MA: The MIT Press.

Han, Chung-Hye. 2000. *The Structure and Interpretation of Imperatives: Mood and Force in Universal Grammar*. New York NY: Garland.

Harbour, Daniel. 2016. *Impossible Persons*. Cambridge MA: The MIT Press. https://doi.org/10.7551/mitpress/9780262034739.001.0001

Harley, Heidi & Ritter, Elizabeth. 2002. Person and number in pronouns: A feature-geometric analysis. *Language* 78(3): 482–526. https://doi.org/10.1353/lan.2002.0158

Hasegawa, Nobuko. 2009. Agreement at the CP level, clause types and the 'person' restriction on the subject. In *Proceedings of the Workshop on Altaic Formal Linguistics* 5 [MIT Working Papers in Linguistics 58], Ryosuke Shibagaki & Reiko Vermeulen (eds), 131–152. Cambridge MA: MIT.

Heim, Irene. 2008. Features on bound pronouns. In *Phi-Theory: Phi-Features across Modules and Interfaces*, Daniel Harbour, David Adger & Susana Béjar (eds), 35–56. Oxford: OUP.

Hornstein, Norbert. 1999. Movement and control. *Linguistic Inquiry* 30(1): 69–96. https://doi.org/10.1162/002438999553968

Inoue, Kazuko. 2007. Nihongo no moodaru no tokuchoo saikoo (Revisiting the nature of modality in Japanese). In *Nihongo no Syubun Gensyoo* (Main Clause Phenomena in Japanese), Nobuko Hasegawa (ed.), 227–260. Tokyo: Hituzi.

Jensen, Britta. 2003. Syntax and semantics of imperative subjects. *Nordlyd: Tromsø University Working Papers on Language & Linguistics* 31: 150–164.

Kratzer, Angelika. 2009. Making a pronoun: Fake indexicals as windows into the properties of pronouns. *Linguistic Inquiry* 40(2): 187–237. https://doi.org/10.1162/ling.2009.40.2.187

Kuno, Susumu. 1973. *The Structure of the Japanese Language*. Cambridge MA: The MIT Press.

Kuno, Susumu. 1988. Blended quasi-direct discourse in Japanese. In *Papers from the Second International Workshop on Japanese Syntax*, William J. Poser (ed.), 75–102. Stanford CA: CSLI.

Kuroda, Sige-Yuki. 1973. Where epistemology, style and grammar meet: A case study from Japanese. In *A Festschrift for Morris Halle*. Stephen R. Anderson & Paul Kiparsky (eds), 377–391. New York NY: Holt, Rinehart & Winston.

Kuroda, Sige-Yuki. 1988. Whether we agree or not: A comparative syntax of English and Japanese. *Lingvisticæ Investigationes* 12(1): 1–47. https://doi.org/10.1075/li.12.1.02kur

Landau, Idan. 2000. *Elements of Control: Structure and Meaning in Infinitival Constructions*. Dordrecht: Kluwer. https://doi.org/10.1007/978-94-011-3943-4

Landau, Idan. 2004. The scale of finiteness and the calculus of control. *Natural Language & Linguistic Theory* 22(4): 811–877. https://doi.org/10.1007/s11049-004-4265-5

Landau, Idan. 2008. Two routes of control, evidence from case transmission in Russian. *Natural Language & Linguistic Theory* 26(4): 877–924. https://doi.org/10.1007/s11049-008-9054-0

Landau, Idan. 2015. *Two-tiered Theory of Control*, Cambridge MA: The MIT Press. https://doi.org/10.7551/mitpress/9780262028851.001.0001

Landau, Idan. 2018. Direct variable binding and agreement in obligatory control. In *Pronouns in Embedded Contexts at the Syntax-Semantics Interface*, Pritty Patel-Grosz, Patrick Georg Grosz & Sarah Zobel (eds), 1–41. Dordrecht: Springer. https://doi.org/10.1007/978-3-319-56706-8_1

Lewis, David. 1979. Attitude *de dicto* and *de se*. *The Philosophical Review* 88(4): 513–543. https://doi.org/10.2307/2184843

Madigan, Sean. 2008. Obligatory split control into exhortative complements in Korean. *Linguistic Inquiry* 39(3): 493–502. https://doi.org/10.1162/ling.2008.39.3.493

Matsuda, Asako. 2015a. Controller restrictions and embedded force. *JELS: Papers from the Conference and from the International Spring Forum of the English Linguistic Society of Japan* 32: 77–83.

Matsuda, Asako. 2015b. Complement control without a DP controller. *Journal of the Ochanomizu University English Society* 5: 29–49.

Matsuda, Asako. 2017a. Shifted indexicals in partial control. *JELS: Papers from the Conference and from the International Spring Forum of the English Linguistic Society of Japan* 34: 264–270.

Matsuda, Asako. 2017b. Embedded imperatives in control. *English Linguistics* 33(2): 340–376. https://doi.org/10.9793/elsj.33.2_340

Matsuda, Asako. 2019. Person in Partial Control. PhD dissertation, Ochanomizu University.

Moriyama, Takuro. 2000. Kihon-joho to sentaku-kankei tosite-no modaritii (Modality as basic moods and selective relations). In *Modaritii* (Modality) [Nihongo no Bunpoo 3], Takuro Moriyama, Yoshio Nitta & Hiroshi Kudo (eds), 3–78. Tokyo: Iwanami Shoten.

Nitta, Yoshio. 1991. *Nihongo no Modaritii to Ninshoo* (Modality and Person in Japanese). Tokyo: Hituzi.

Oshima, David Yoshikazu. 2006. Perspectives in Reported Discourse. PhD dissertation, Stanford University.

Pearson, Hazel. 2013. The Sense of Self: Topics in the Semantics of *De Se* Expressions. PhD dissertation, Harvard University.

Percus, Orin & Sauerland, Uli. 2003a. On the LFs of attitude reports. *Proceedings of Sinn und Bedeutung* 7: 228–242.

Percus, Orin & Sauerland, Uli. 2003b. Pronoun movement in dream reports. In *Proceedings of NELS 33*, Shigeto Kawahara & Makoto Kadowaki (eds), 265–284. Cambridge MA: MIT.

Portner, Paul. 2004. The semantics of imperatives within a theory of clause types. *Semantics and Linguistic Theory* 14: 235–252. https://doi.org/10.3765/salt.v14i0.2907

Postal, Paul M. 1970. On coreferential complement subject deletion. *Linguistic Inquiry* 1(4): 439–500.

Potsdam, Eric. 1996. Syntactic Issues in the English Imperative. PhD dissertation, University of California Santa Cruz.

Rooryck, Johan. 2000. *Configurations of Sentential Complementation: Perspectives from Romance Languages*. London: Routledge.

Schlenker, Philippe. 2003. A plea for monsters. *Linguistics and Philosophy* 26(1): 29–120. https://doi.org/10.1023/A:1022225203544

Sigurðsson, Halldor Armann. 2010. On EPP effects. *Studia Linguistica* 64(2): 159–189. https://doi.org/10.1111/j.1467-9582.2010.01171.x

Stiebels, Barbara. 2007. Towards a typology of complement control. *ZAS Papers in Linguistics* 47: 1–80. https://doi.org/10.21248/zaspil.47.2007.344

Uchibori, Asako. 2000. The Syntax of Subjunctive Complements: Evidence from Japanese. PhD dissertation, University of Connecticut.

Ueda, Yukiko. 2008. Person restriction and syntactic structure of Japanese modals. *Scientific Approaches to Language* 7: 123–150.

Vassilieva, Maria. 2005. Associative and Pronominal Plurality. PhD dissertation, SUNY Stony Brook.

Vassilieva, Maria. 2008. A syntactic analysis of nominal and pronominal associative plurals. *University of Pennsylvania Working Papers in Linguistics* 14: 339–352.

Wechsler, Stephen. 2010. What 'you' and 'I' mean to each other: Person indexicals, self-ascription, and theory of mind. *Language* 86(2): 332–365. https://doi.org/10.1353/lan.0.0220

Williams, Edwin. 1980. Predication. *Linguistic Inquiry* 11(1): 203–238.

Zanuttini, Raffaella, Pak, Miok & Portner, Paul. 2012. A syntactic analysis of interpretive restrictions on imperative, promissive, and exhortative subjects. *Natural Language & Linguistic Theory* 30(4): 1231–1274. https://doi.org/10.1007/s11049-012-9176-2