Embedded Jussives as Instances of Control: The Case of Mongolian and Korean

by

Milena Sisovics
B.A. in Slavic Studies (Russian), University of Vienna (2013)
M.A. in Theoretical Linguistics, University of Vienna (2013)

Submitted to the Department of Linguistics and Philosophy
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Author ..... Signature redacted .....
Department of Linguistics and Philosophy
September 7, 2018

Certified by..... Signature redacted .....
Martin Hackl
Associate Professor of Linguistics
Thesis Supervisor

Certified by.... Signature redacted .....
Irene Heim
Professor of Linguistics
Thesis Supervisor

Certified by. Signature redacted .....
Norvin Richards
Professor of Linguistics
Thesis Supervisor

Accepted by Signature redacted .....
Adam Albright
Professor of Linguistics
Linguistics Section Head

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Abstract

This dissertation is an investigation into the semantics of imperatives and imperative-like forms (collectively referred to as *jussives*) in embedded contexts. The long-held view that imperatives are confined to root (matrix) contexts has been challenged by recent findings of counterexamples from a variety of languages. This thesis contributes to the debate by introducing novel empirical evidence from Mongolian confirming that the restriction on imperative embedding is not universal: Mongolian is shown to allow for embedding of a a speaker-directed jussive form *voluntative* and a hearer-directed *imperative*. The empirical domain is widenend to include data from jussive embedding in Korean (drawing on Madigan 2008, Pak et al. 2008b, a.o.).

This thesis takes special interest in the complex combination of properties characterizing the subjects of embedded jussives in Mongolian and Korean, to wit, (i) their dependence on an antecedent in the embedding clause, (ii) the requirement to be interpreted *de se*, and (iii) the presence of ϕ-features. These properties are used to make a case for an analysis of jussive subjects as instances of Obligatory Control PRO, and against an analysis as indexical pronouns. In particular, it is demonstrated how a view of PRO as a syntactically and semantically complex unit closely resembling *de re* expressions in attitude reports (Percus & Sauerland 2003a) provides an elegant way of accounting for the combined characteristics of jussive subjects.

Set against the background of a Neo-Davidsonian event semantics, this thesis puts forward the idea that jussive clauses denote sets of events whose propositional content amounts to a desire statement. An analysis of jussives as sets of events is shown to afford a natural extension to matrix occurrences on the assumption that the content denoted by matrix jussives is anchored to the speech event. Finally, this thesis proposes to bridge the gap between jussive reports and canonical Obligatory Control constructions and demonstrates how the presented account can be generalized to

provide a novel perspective on Obligatory Control constructions as well.

Thesis Supervisor: Martin Hackl
Title: Associate Professor of Linguistics

Thesis Supervisor: Irene Heim
Title: Professor of Linguistics

Thesis Supervisor: Norvin Richards
Title: Professor of Linguistics

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Introduction

This dissertation is concerned with the occurrence of imperatives and imperative-like speech acts in embedded position. Embedded occurrences of imperatives and of morphologically marked forms whose illocutionary force resembles that of imperatives have received much attention in recent linguistic literature. The interest in embedding of imperatives and related forms is influenced by a set of factors: Imperatives and related forms have long been considered to resist embedding. Recent literature, however, reports a wealth of counterexamples: Data from multiple languages including Japanese (Oshima 2006), Korean (Pak et al. 2008a,b), Slovenian (Stegovec & Kaufmann 2015), English (Crnič & Trinh 2009) demonstrate that there is no universal constraint against embedded imperatives. The formerly widespread belief that imperatives do not embed may also have been spurred by the fact that embedded imperatives, if they did exist, would raise significant challenges for linguistic analysis.

This dissertation offers a novel account of occurrences of imperatives and imperative-like forms – which are grouped under the label *jussive* – in embedded position. The necessity of this endeavor is reinforced by new data from Mongolian: Mongolian allows for embedding of jussive clauses. The observation concerns two morphologically distinct forms, a standard imperative directed at the hearer (correspondingly labeled *imperative*), and a form labeled *voluntative*, which expresses a non-assertive speech act targeting the speaker. Chapter 1 provides a discussion of the central properties of these forms in matrix position. Chapter 2 introduces the data showing that voluntatives and imperatives are not confined to root contexts.

I use the case of Mongolian as a starting point to engage in a discussion of the semantics of jussives, with an emphasis on their occurrence in embedded position. Out of the various domains of inquiry pertaining to the semantics of jussives, the major focus of my work concerns the nature of the jussive subject.

My investigation is guided by a peculiar set of properties displayed by the jussive subject. These properties can be summarized in terms of the following three characteristics: (i) The subject (and target) of Mongolian jussives refers to a designated discourse participant, to wit, the speaker (or a group including the speaker)

in voluntatives, and to the hearer (or a group including the hearer) in imperatives. Importantly, in embedded jussives, the reference of the subject shifts to a corresponding participant of the *reported* discourse, viz., the reported speaker in voluntatives, and the reported hearer in imperatives. (ii) The reported speaker of a jussive must feature a specific attitude – known as *de se* attitude in the literature – towards the jussive subject. (iii) The jussive subject carries ϕ-features.

My survey of jussive embedding extends beyond Mongolian: In chapter 4, I introduce data from Korean, where jussive embedding is comparably well-researched. Korean embedded jussives show crucial parallels to their Mongolian counterparts. However, unlike Mongolian jussives, Korean embedded jussives allow for their subject to be realized phonologically by means of a person pronoun; Korean thereby offers overt evidence for the presence of ϕ-features on jussive subjects.

The combination of properties characterizing the jussive subject poses an interesting analytical challenge. I consider two major analytical options: The jussive subject could be a regular pronominal variable *pro*, which is optionally spelled out in Korean; or it could be an instance of PRO as familiar from Obligatory Control (OC) constructions.

I argue that an analysis of the jussive subject as PRO is preferable over an analysis of the subject as a regular pronoun. I back my claim by pointing at two crucial behavioral parallels between OC PRO and the jussive subject: They both depend on an antecedent in the embedding clause; this property is reflected in the "shifted" interpretation of the jussive subject (as a reported as opposed to an actual discourse participant) in embedded position. Moreover, both jussive reports and canonical OC constructions require that the reported speaker (or the attitude holder in OC constructions) hold a specific, *de se* attitude, towards the embedded subject.

Crucially, neither of the first two properties would be expected under a view of the jussive subject as a regular pronoun: If the subject of jussives were a (typically silent) indexical pronoun bearing first person features in speaker-directed voluntatives, and second person features in hearer-directed imperatives, the changed interpretation in embedded position would amount to an instance of indexical shift; however, Mongolian and Korean indexicals do not generally shift. Furthermore, a simple pronominal analysis would have difficulty deriving the *de se* requirement characterizing the jussive subject.

In chapter 3, I introduce two classes of theories pertaining to PRO: In one class of theories, represented by Chierchia (1989), PRO is analyzed as a semantically empty element, and the PRO clause constitutes a property (a set of individuals in the simplest case) rather than a proposition. An alternative line of analysis, which has its roots in in Percus & Sauerland's (2003a) theory of *de re* attitudes, holds that

PRO is a syntactically complex unit involving an individual variable and a variable ranging over *concept generators*. I put forward that only the latter view – of PRO as a complex expression – can successfully account for the combined properties of the jussive subject. Moreover, it offers an elegant way of deriving its ϕ-features – a property that has proven challenging to capture under traditional views of PRO. The proposed analysis is presented in detail in chapter 5.

In the course of chapter 5, I also outline my assumptions regarding the remaining components involved in the derivation of embedded jussives. On the one hand, I adopt a modal analysis of jussives, following Kaufmann (2012); in particular, I propose that jussive modality is contributed by a uniform bouletic modal JUSSIVE present across different jussive forms. The proposed analysis exploits a Neo-Davidsonian semantics, where predicates denote sets of events, and clausal complements compose with the embedding predicate via modification. While Percus & Sauerland's (2003a) theory of *de re* expressions makes use of a standard attitude semantics, this dissertation demonstrates how the relevant components can successfully be imported into a Neo-Davidsonian framework. Finally, though the offered analysis takes embedded jussives as its reference point, this thesis also shows that the model developed to account for embedded jussives can be transferred to root occurrences in a straightforward manner.

No analysis of jussives as modals is complete without addressing the question as to what explains the specific, performative force of jussives, which distinguishes it from prototypical modals. This question is dealt with in chapter 6, where I elaborate on how Kaufmann's (2012) and Stegovec & Kaufmann's (2015) presuppositional view of imperative force can be used for the purposes of this work.

Chapter 7 offers a discussion of some of the existing literature on jussive embedding in Korean as well as a review of Stegovec & Kaufmann's (2015) analysis of embedded imperatives in Slovenian.

To conclude this work, I propose to bridge the gap between jussive reports and canonical instances of OC: In chapter 8, I show how my account of jussive reports can be extended in a way that provides a novel perspective on OC constructions, and make a concrete proposal whereby PRO clauses and jussive clauses share much of the same underlying structure.

A terminological remark

I follow Kaufmann (2012) in using the term *imperative* to designate a specific clause type, defined as a form-function pair. Kaufmann views the imperative as a pair consisting of a sentence marked with imperative morphosyntax, and a directive speech

act ORDER, as illustrated in (1) for a German imperative. Together with the declarative and interrogative, the imperative forms a paradigm of three basic clause types, (2) (Kaufmann 2012:6).

(1) *Sei* *pünktlich!*
be.IMP punctual
'Be on time!'

a. Form: special morphology on verb (*sei*), no overt subject
b. Function: The speaker directs the addressee to be punctual.

(2) A simple **Clause Type System**

a. **declarative** := ⟨declarative (sentence), ASSERT⟩
b. **interrogative** := ⟨interrogative (sentence), QUESTION⟩
c. **imperative** := ⟨imperative (sentence), ORDER⟩

My discussion extends beyond canonical imperatives and also addresses related, imperative-like forms such as the Mongolian *voluntative*, and the Korean *promissive* and *exhortative*. I assign the collective label *jussive* to these forms. How do these categories fit into the paradigm? Do they form a separate clause type, or should they be collapsed with imperatives as instances of the same clause type? For now, we may think of them as forming separate clause types. However, their joint appearance in this dissertation is for a reason. As we will see, these cross-linguistically rarer forms resemble the imperative clause type (as opposed to other clause types) both morphosyntactically and semantically: To provide a brief glimpse, voluntatives, promissives, and exhortatives all typically lack an overt subject – much like imperatives. Moreover, both the former as well as the latter intuitively refer to what the world should be like, whereas declaratives and interrogatives are focused on the actual state of affairs. Therefore, while in the beginning I use the collective label *jussive* in a purely descriptive sense and for the sake of convenience, as I go on this usage will gain conceptual significance. To wit, I will put forward the idea that voluntatives, promissives, imperatives, and exhortatives constitute instances of a uniform clause type *jussive*.

Chapter 1

The Mongolian voluntative and imperative

1.1 Preliminaries

The dialect investigated in this work is Khalkha, the main dialect spoken in the modern state of Mongolia. Below I provide some general typological information on the investigated dialect. Unless otherwise indicated, *Mongolian* as used in this work refers to the Khalkha dialect of Mongolian.

As we will see, Mongolian is a SOV language. While SOV is the unmarked word order, Mongolian also allows for scrambling of preverbal constituents creating a marked word order. Pronominal subjects in Mongolian cannot normally be dropped, i.e., Mongolian is not a *pro*-drop language. Mongolian CPs are head-final.

Mongolian has morphological markers for various non-assertive speech acts, many of which are verbal suffixes. In this work, I focus on two morphemes, which I call VOLUNTATIVE (VOL, following Janhunen 2012) and IMPERATIVE (IMP), respectively. The speech acts they allow a speaker to express I refer to as *voluntative* and *imperative*, respectively. The semantics of voluntatives and imperatives will be taken to correspond to a modal proposition.

Voluntatives and imperatives differ in the individual targeted by the modal proposition: The voluntative targets a speaker or a group including the speaker, while the imperative targets a hearer or a group including the hearer. Under the assumption that the target coincides with the clausal subject, voluntatives can be considered to call for a first person subject, while imperatives require a second person subject.

For the rest of this work, I subsume the two forms under the term *jussive*. Recall that for now, this decision is made merely for ease of reference and does not imply

any theoretical claims about the relationship between the two forms. However, in the analysis part of this work, the reference to the two forms as jussives will lose its purely descriptive status as I will argue that voluntatives and imperatives are in fact instances of agreement and involve the same underlying modal JUSSIVE.

1.1.1 Data collection

The bulk of the Mongolian data reported in this work were provided by Urandari Byambadalai. Urandari is in her mid-twenties and grew up in Ulaanbaatar. All elicitations with Urandari were conducted in Boston between March and November 2017 on a mostly weekly basis. The majority of elicitations were conducted in person; a few times I elicited data over Skype. As for the discovery of the jussive forms discussed in this work, the first instances of *voluntatives* were provided spontaneously in the context of conditionals such as (1).

(1) Dorj baigaa bol, bi **negt-ey**.
Dorj be if, I join-VOL
'If Dorj is there, I will join.'

After discovering the existence of the voluntative form, I collected further data on the voluntative by asking my consultant to translate certain sentences in a way that involves a voluntative and provide me with judgments on these sentences. Moreover, I also construed Mongolian sentences and asked my consultant to translate them back to me and judge their felicity.

The first instances of imperative forms, on the other hand, I elicited in a more targeted manner, namely, by asking my consultant to translate English imperative sentences into Mongolian. In her translations, my consultant presented me with a choice of two productive verbal suffixes to express imperative semantics in Mongolian, which differ in style. Both forms are discussed in more detail in the following section.

1.2 The Mongolian voluntative and imperative in matrix position

1.2.1 Imperative

The Mongolian imperative is associated with at least two different markers: One is zero morphology (2-a), the other *-AArei*[1] (2-b). According to my consultant, the latter, marked form, represents a more polite version of the imperative; where relevant, the latter form is glossed IMP.POL to distinguish it from the unmarked imperative.[2] Neither form is specified for number, though both can combine with the optional PLURAL marker *-tsgee/-tsgoo* (which is not specific to imperatives), cf. (3). In general, the Mongolian imperative seems to closely resemble (second-person) imperatives in other languages.

(2) a. Shiree-g-ee tseverl-∅!
table-ACC-ANAPH clean-IMP
'Clean your table!'

b. Shiree-g-ee tseverl-eerei!
table-ACC-ANAPH clean-IMP.POL
'Please clean your table!'

(3) a. Shiree-g-ee tseverl-tsgee-∅!
table-ACC-ANAPH clean-PL-IMP
'Clean (pl.) your table!'

b. Shiree-g-ee tseverl-tsgee-geerei!
table-ACC-ANAPH clean-PL-IMP.POL
'Please clean (pl.) your table!'

Semantically, clauses containing an imperative verb form in Mongolian are directed towards the addressee, who can be a single individual or a group. Though I will revise my assumptions at a later point, for now we can think of imperatives as having a second-person indexical subject. According to my consultant, the subject must normally be covert.[3] As evidence for the restriction of imperatives to clauses featuring a second-person subject, consider the reference of the subject-anaphor *-ee*

[1] Capital spelling of vowel letters indicates vowels undergoing harmony, which in this case, yields the forms *-aarei*, *-eerei*, *-oorei*, *-öörei* (cf. Janhunen 2012).

[2] Janhunen (2012:153) takes *-AArei* to realize what she calls PRESCRIPTIVE, expressing 'a somewhat milder and/or more polite command ('please') than the unmarked imperative.'

[3] As expected from a cross-linguistic point of view, imperatives can, however, be accompanied by overt DPs functioning as vocatives, cf. (i).

in (2), which is unmarked for person, but has to be bound by a second-person subject in IMPERATIVE clauses: (2-a) cannot be a command to clean the speaker's or a third person's (excluding the addressee) table. Possession by someone other than the addressee requires a separate possessive marker such as *min* 'my' in (4-b).

(4) a. Khöl-öö ugaa-gaarei!
foot-ANAPH wash-IMP.POL
'Wash your/*my feet!'
b. Khöl-iig min ugaa-gaarei!
foot-ACC my wash-IMP.POL
'Wash my feet!'

1.2.2 Voluntative

In addition to imperatives, Mongolian has a non-assertive clause type *voluntative.* A clause is marked voluntative by means of the suffix *-ey/-iy* on the verb. Voluntative clauses target the speaker or a group containing the speaker. Just like imperative clauses may be represented as having a second-person indexical subject, we can conceive of voluntative clauses as involving a first-person indexical subject. English has no direct counterpart to the Mongolian voluntative; to approximate the meaning of voluntative clauses in English, my consultant used various paraphrases such as "let me/us", "I/we want to", "I/we would like to". I will stick to this way of rendering voluntatives throughout this work.

(5) shiree-g-ee tseverl-iy!
table-ACC-ANAPH clean-VOL
'I want to/ let me clean my table!'
'We want to/ let us clean our table!'

Most of the time, the subject of voluntatives is covert. However, unlike in the case of imperatives, there seems to be no principled ban on spelling out the subject, cf. (6) below. However, as the exact conditions governing the spell-out of voluntative subjects are unclear and the data insufficient to draw reliable conclusions, I will ignore the option of overt voluntative subjects for the most part in this work.

(i) Bat, shiree-g-ee tseverl-eerei!
Bat table-ACC-ANAPH clean-IMP.POL
'Bat, please clean your table!'

(6) a. Bi shiree-g-ee tseverl-iy!
1.SG.NOM table-ACC-ANAPH clean-VOL
'I want to/ let me clean my table!'
b. Bit shiree-g-ee tseverl-iy!
1.PL.NOM table-ACC-ANAPH clean-VOL
'We want to/ let us clean our table!'

Like imperatives and other verb forms, voluntatives can carry plural marking -*tsgee/tsgoo*.

(7) Shiree-g-ee tseverl-tsgee-iy!
table-ACC-ANAPH clean-PL-VOL
'Let's (all) clean the table!'

Above I claim that voluntatives are restricted to first-person subjects. The examples in (8) provide evidence for this claim: Note that the anaphors and possessive pronouns in the voluntative clauses (8) are in reverse distribution compared to the imperative sentences in (4). To wit, the anaphor on the object (8-a) refers to the speaker, while possession by the addressee is expressed by a separate possessive pronoun *chin*, (8-b).

(8) a. Khöl-öö ugaa-iy!
foot-ANAPH wash-VOL
'Let me wash my/*your feet!'
b. Khöl-iig chin ugaa-iy!
foot-ACC your wash-VOL
'Let me wash your feet!'

As for overt subjects other than first-person indexicals, my consultant reports that voluntatives featuring the name of the addressee or an overt second-person indexical such as *chi* 'you' are marked and limited to contexts featuring a demanding or aggressive attitude of the speaker towards the hearer; for example, (9) with an overt subject *Bat/chi* could be uttered by a military official or by a director at a movie set giving instructions to Bat. I ignore cases of this type in what follows for their markedness and marginal status.

(9) *Addressing Bat:*
(#Bat/#chi) shiree-g-ee tseverl-iy!
Bat/2.SG table-ACC-ANAPH clean-VOL
intended: 'Bat/you, clean your table.'

The ungrammaticality of (10), moreover, witnesses the incompatibility of third-person subjects with voluntatives.

(10) *Tit chama-ig pot-iy!
3.PL 2-ACC shoot-VOL
Intended: 'They should/want to shoot you.'

Voluntative morphology is incompatible with clauses that are marked as *yes/no*-questions, cf. (11). This confirms the assumption that voluntative clauses are necessarily performative (non-assertive) and do not merely express modal (bouletic or deontic etc.) propositions: Note that otherwise voluntatives should allow for descriptive uses and be compatible with the semantics and pragmatics of interrogatives, parallel to the modal verb *want* (as in *Do I want to play outside?*). The fact that purely descriptive uses of voluntatives are unavailable is also reflected by my consultant's intuition that (5), for example, is "not literally 'I want to clean my table"'. Note that, therefore, translations of voluntatives using *want* as in (5) must be regarded as incomplete and auxiliary.

(11) *Bi gata togl-iy-üü?
I outside play-VOL-Y/N
Intended: 'Do I want to play outside?/ Shall I play outside?'

1.2.3 Why single out voluntative and imperative clauses?

I do not claim that voluntative and imperative *a priori* form a natural class, to the exclusion of other non-assertive, morphologically marked clause types. However, there are several reasons why I single out these two clause types in my work. First, both clause types seem to be highly frequent and productive; it is worth noting that the first instances of voluntatives and imperatives were provided on an active basis by my consultant, that is, as translations of English sentences with corresponding meanings.

Moreover, the two clause types also share certain syntactic and semantic characteristics: For example, as shown above, both voluntative and imperative predicates target discourse participants; certain other semantic similarities will be discussed later in this work. Last but not least, both clause types can be embedded under certain predicates of speech; this property, which constitutes the focus of my work, will be discussed in detail in the following sections.

I conclude that the above commonalities make a shared treatment of voluntative and imperative clauses expedient. In the remainder of this work, I will frequently

collapse voluntative and imperative clauses and refer to them together as *jussive* clauses.

1.2.4 Further morphemes marking non-assertive speech acts

Mongolian has at least another addressee-oriented form marked by *-aach*, called *precative* in Janhunen (2012), which seems to be less common than the IMPERATIVE *∅/-AArai*. I do not investigate this form in this work.

(12) Tüün-d tusl-aach
3-DAT help-PREC
'Help him/her!'

Chapter 2

The Mongolian voluntative and imperative in embedded position

Mongolian exemplifies a property that has traditionally been considered absent from natural languages: Mongolian allows for embedding of imperatives and voluntatives. In this respect, Mongolian is in line with other languages such as Japanese, Korean, and Slovenian, among others, which have recently been found to falsify the claim that imperatives are confined to matrix position. The section at hand will provide detailed evidence that embedding of imperatives and voluntatives, subsumed under the term jussives, is possible in Mongolian.

Let me elaborate on the general distribution of embedded jussives in Mongolian. Embedded jussives in Mongolian cannot occur under any old predicate selecting for a clausal complement; rather, Mongolian embedded jussives are limited to speech reports. The predicate most commonly found to embed jussives is *khelekh* 'say'; the data presented in 2.1.1 is limited to instances of that kind. However, a few other lexical items are compatible with jussive embedding as well. Concretely, jussives have also been found embedded under the phrasal verb *sanal bolgokh* 'suggest, make a suggestion', and under the clause-final particle *gesen*, which marks a clause as a speech report; see section 2.1.2. (Note that this list, of course, cannot be taken to be exhaustive.)

Many languages allow for quotative constructions to be string-identical to instances of subordination. This is the case in English and German: Both languages have a class of predicates that are compatible with the complementizer being absent in their clausal complement. Crucially, *say* and German *sagen* are members in that class.

(2) illustrates the two readings that can be assigned to sentence (1) containing

say. Crucially, in the reading sketched in (2-b), the indexical *I* in (1) is interpreted as *Sue*. However, as indexicals in German and English are known to only allow for a strict interpretation (i.e., to disallow *shifting*), the only possible analysis of (1) with reading (2-b) is as a quotative construction.

However, (1) also has a reading (2-a) under which the complement is a paraphrase of what Sue actually said to Joe, which could have been something like "Milena likes cherry liqueur". This reading is associated with another available parse of (1), namely, as an instance of subordination.

(1) a. Die Susi hat zum Josef gesagt [ich mag Kirschlikör].[1]
b. Sue said to Joe [I like cherry liqueur].

(2) Readings for (1)
a. Sue said to Joe that I like cherry liqueur.
b. Sue said to Joe: "I like cherry liqueur."

The same ambiguity holds for *khelekh* 'say' in Mongolian. Therefore, it is necessary to ensure that purported instances of embedded jussives are not merely instances of jussives rendered in quotation. To ensure the status of the jussive clause as genuinely embedded and exclude cases of direct speech, I tested jussives in constructions that feature syntactic dependencies between the jussive clause and the embedding clause. Specifically, the data presented below involves (i) wh-questions featuring long-distance *wh*-dependencies, with the *wh*-item originating in an embedded jussive clause, (ii) relative clauses involving a long-distance dependency between a noun phrase in the jussive clause and a relative operator in the superordinate clause, (iii) jussive clauses containing an NPI that is licensed by a clause-external element. Moreover, (iv) I tested long-distance topicalization out of an embedded jussive clause; however, the divergent, more permissive behavior of topicalization with respect to phenomena such as indexical shift observed below, compared to other embedding environments, will raise the question if topicalization in Mongolian is indeed an adequate means to ensure embedding.

The data is sorted by the type of syntactic dependency, as listed above. I first discuss these types of syntactic dependency under the predicate *khelekh* 'say' (section 2.1.1) before going on to other embedding environments in section 2.1.2.

[1] In Southern dialects where this example is taken from, proper names are preceded by articles.

2.1 Syntactic embedding

2.1.1 Jussive embedding under *khelekh* 'say'

khelekh 'say' appears to be the most common environment for voluntative and imperative embedding. By means of diagnostics commonly used to probe for syntactic embedding, in what follows I provide evidence that *khelekh* allows for genuine embedding of jussives.[2]

***wh*-dependency** Mongolian *wh*-questions normally feature the *wh*-item *in-situ*. However, as is common for SOV languages, Mongolian also allows for *wh*-items to scramble. *wh*-scrambling is often hard to distinguish from *wh*-extraction, including in embedded jussives, where *wh*-items have frequently been found outside their base position. For the sake of concreteness, I will refer to such instances as scrambling, however, nothing in my work hinges on this decision. Interestingly, embedded jussives have more often than not been found to be compatible or even require the *wh*-item to scramble, although the exact properties governing the presence of scrambling in jussives remain unclear.[3]

(3) VOLUNTATIVE
(Yuu-g) Bat Naraa-d [(??bi) (yuu-g) tseverl-iy gej] khel-sen ve?
what-ACC Bat Naraa-DAT I what-ACC clean-VOL that say-PST WH.QU
'What did Bat tell Naraa that he wants to clean?'

My consultant infrequently accepts an overt subject in embedded voluntative clauses

[2]Poppe (1951) provides an early example of what he considers a reported imperative (i). Though Poppe fails to support this claim since the sentence is compatible with a quotation parse, the example is interesting for a different reason: It involves an accusative DP *namaig* in the matrix clause, translated as the addressee of the speech act and the target of the imperative. Note that the addressee argument of *khelekh* 'say' is normally marked dative. One hypothesis is that accusative can be non-structural and serve as topic marking, which would be corroborated by other data elicited; this is also intimated by Poppe's (1951:62) remark about one use of the accusative as *accusativus relationis*, 'with respect to, regarding'.

(i) Nama-ig [ir gej] khel-sen.
1-ACC come.IMP that say-PST
'He/She told me to come.' (literally: 'With respect to me, he/she said, come!')
(Poppe 1951:62, brackets added, modified transcription)

[3]The *wh*-item *yuug* in (3) is spelled out in exactly one of the two indicated positions; the same holds for (5) and parallel examples.

(4), although judgments are somewhat unstable. Singular *bi* 'I' is more frequently rated as acceptable than plural *bit* 'we'. Note that there is an alternative parse of (4) with *who* originating as the matrix dative argument, cf. 'Whom did Bat$_i$ tell that he$_i$ wants Naraa to kiss him$_i$?'. This parse is less interesting for our purposes.

(4) VOLUNTATIVE
Khen-d$_i$ Bat Naraa-d [(?bi) t_i uns-ul-iy gej] khel-sen ve?
who-DAT Bat Naraa-DAT I kiss-CAUS-VOL that say-PST WH.QU
'Who$_i$ did Bat say to Naraa that he wants t_i to be kissed by?'
(*lit.:* 'Who$_i$ did Bat$_j$ say to Naraa, let me$_j$ have him/her$_i$ kiss me$_j$?')

Imperatives can similarly be embedded; overt imperative subjects are disallowed in both matrix and embedded imperatives.

(5) IMPERATIVE
(Yuu-g) Bat Naraa-d [(yuu-g) tseverl-eerei gej] khel-sen ve?
what-ACC Bat Naraa-DAT what-ACC clean-POL.IMP that say-PST WH.QU
'What did Bat tell Naraa to please clean?'

Relative clause dependency Relative clauses in Mongolian precede the head noun they modify. They lack a relative pronoun or other overt elemento in C introducing the relative clause. The subject of relative clauses is normally marked Genitive. Consider (6) for a simple example of a relative clause.

(6) [Min-ii nom ög-sön] khun ten-d bai-na.
1.SG-GEN book give-PST person there-LOC be-DUR
'The person to whom I have given a book is there.' (Janhunen 2012:273)

In the following examples, containing an embedded jussive, a relative operator stands in a dependency relation with an argument in a lower jussive clause (or, in pre-theoretical terms, the head of the relative clause is associated with an element in the jussive clause). Overt jussive subjects were found to be ungrammatical across-the-board in this environment.

(7) VOLUNTATIVE
[Bat-iin [(*bi) t_i id-iy gej] khel-sen] khool$_i$ chinix bai-san.
Bat-GEN I eat-VOL that say-PST food yours COP-PST
'The food$_i$ Bat said he would like to eat t$_i$ was yours.'

(8) IMPERATIVE
[Av-iin akh-t [t_i giril gej] khel-sen] emygdee-t_i bi dur-güi.
father-GEN brother-DAT marry.IMP that say-PST woman-DAT I like-NEG
'I don't like the woman$_i$ my father told my brother to marry t_i.'

NPI licensing The focus particle *-ch* is an NPI: *-ch* is ungrammatical in non-DE environments such as (9-a) but licensed in the scope of negation (9-b).

(9) a. *Bi neg-ch khun khar-san.
I one-FOC person see-PST
intended: 'I saw someone.'
b. Bi neg-ch khun khar-aa-güi.
I one-FOC person see-PST-NEG
'I didn't see anyone.'

-ch is contained in jussive clauses in (10) and (11). The fact that it can be licensed by propositional negation *-güi* in the respective matrix clauses further attests to the nature of jussive embedding in these examples as genuine.

(10) VOLUNTATIVE
Khen-ch [yamar-ch khun uns-iy gej] khel-ee-güi.
who-FOC which-FOC person kiss-VOL that say-PST-NEG
'No one$_i$ said they$_i$ would like to kiss anyone.'

(11) IMPERATIVE
Dorj Naraa-d [öör-dön yamar-ch yum ög-öörei gej] khel-ee-güi.
Dorj Naraa-DAT ANAPH-DAT some-FOC thing give-IMP that say-PST-NEG
'Dorj didn't ask Naraa to give anything to him.'

Topic extraction Both voluntative and imperative clauses allow for topicalization of a DP argument to a clause-external topic position indicated by the topic marker *bol*, cf. *en dzaxjaag* 'this letter' in (12) and *en urgudulig* 'this proposal' in (13). Surprisingly, in both cases the embedded subject can be expressed overtly. This is at odds with the behavior of embedded voluntatives and imperatives elsewhere (as well as matrix imperatives), which typically require the subject to be covert.

(12) VOLUNTATIVE
[En zakhidal-g]$_i$ bol Dorj [(bi) t_i bich-iy gej] khel-sen.
this letter-ACC TOP Dorj I write-VOL that say-PST
'As for this letter, Dorj said he would like to write it.'

(13) IMPERATIVE
[En urgudul-ig]$_i$ bol Dorj Naraa-d [(chi) t_i bich-eerei gej] khel-sen.
this proposal-ACC TOP Dorj Naraa-DAT you write-IMP that say-PST
'As for this proposal, Dorj asked Naraa to write it.'

Clauses out of which a topic has been extracted have been found to be exceptionally permissive also in other respects: It will be shown that, unlike in other examined embedded environments, indexicals in these clauses can receive a relative interpretation when embedded under speech predicates, i.e., they can be *shifted* to the context designated by the reported speech event. This peculiarity, together with the acceptability of overt jussive subjects in the examples above, raises the question if my speaker might be able to repair an embedded clause out of which a topic has been extracted and analyze the repaired clause as a quote, i.e., an instance of direct speech. In other words, topic extraction might not be qualified to ensure syntactic embedding.

Note that a direct quote analysis of the jussive clause still does not explain the fact that an overt subject is acceptable in the embedded imperative (13), given that overt subjects have been judged as degraded even in root imperatives.

2.1.2 Other embedding environments

As noted above, two other expressions have been found to embed jussives more or less consistently: the predicate *sanal bolgokh* 'make a suggestion, suggest', and the clause-final particle *gesen*, which marks its complement as a past speech event.

Both expressions in principle seem to allow both voluntatives and imperatives as their complements, though my data only contains one instance of an embedded imperative clause under *sanal bolgokh*, cf. (17)[4], involving a relative operator dependency as a diagnostic for embedding. (14) through (16) are cases of voluntatives under *sanal bolgokh*, with covert *wh*-movement, relative operator dependency and NPI licensing, respectively, as evidence for subordination. My speaker consistently assigned a plural semantics, i.e., *let's* ... to instances of voluntatives under *sanal bolgokh*, which I take to follow from the meaning of the embedding predicate. (Recall that plural marking by way of the suffix *-tsgee/-tsgoo* is optional.); the plural reading is translated as partial control involving PRO$_{i+}$ below, with PRO$_{i+}$ referring to the matrix subject with index i plus others.

(14) Bat [yamar kinoo uts-iy gej] sanal bolgo-son ve?
Bat which movie see-VOL that suggestion make-PST WH.QU

[4]One could speculate that a tension between the lexical semantics of *sanal bolgokh* and the semantics of the imperative might be responsible for the relative rarity of corresponding combinations.

'Which movie did Bat$_i$ suggest PRO$_{i+}$ to see?'

(15) [Bat-iin [t_i ög-iy gej] sanal bolgo-son] kinoo$_i$ goi kinoo bai-san.
Bat-GEN give-VOL that suggestion make-PST movie good movie COP-PST
'The movie that$_i$ Bat suggested PRO$_{i+}$ to give away was a good movie.'

(16) Bat [yamar-ch kinoo-g ög-iy gej] sanal bolgoo-güi.
Bat which-FOC movie give-VOL that suggestion make-NEG
'Bat$_i$ didn't suggest PRO$_{i+}$ to give away any movie.'

(17) En bol [tüün-ii [t_i uts-eerei gej] sanal bolgo-son] kinoo$_i$.
this TOP 3SG-GEN t_i see-IMP that suggestion make-PST movie
'This is the movie that he$_i$ recommended PRO$_{j\neq i}$ to watch.'

The examples below are instances of jussive embedding under the speech particle *gesen*. Note that *gesen* is in complementary distribution with the otherwise obligatory complementizer *gej*. Interestingly, *gesen* is sometimes accompanied by an overt speaker argument (an additional hearer argument was judged as degraded), cf. (18) and (19), which raises the question as to its actual syntactic category. The bracketing used below is therefore tentative; for now I analyze *gesen* as a head external to the jussive clause rather than a complementizer within the jussive clause.

In (18) and (19), *gesen* takes as its complement a voluntative and an imperative clause, respectively, whose object arguments are targeted by a *wh*-question. (18) involves an additional level of embedding: The *gesen* clause is nominalized and forms the internal argument of the matrix predicate *khel-sen* 'said'.

(18) VOLUNTATIVE
yamar vinoo-g$_i$ Naraa [Bat [t$_i$ av-iy] gesn-iig] Urna-d khel-sen
which wine-ACC Naraa Bat buy-VOL PART-ACC Urna-DAT say-PST
ve?
WH.QU
'Which wine did Naraa tell Urna that Bat said he wants to buy?'

(19) IMPERATIVE
Context: Naraa is talking to Bat about his family.
Naraa ($^{??}$Bat-id) [yamar üil-ajil-gaa-d jav-tsgaa-∅] gesen ve?
Naraa Bat-DAT which event-work-ANAPH-DAT come-PL-IMP PART WH.QU
'What event did Naraa say (to Bat$_i$) that they$_{i+}$ should attend?'

The embedded voluntative and imperative clauses in (20) and (21), respectively, are part of a larger relative clause headed by the direct object arguments *khool* and *kinoo-g* of the jussive clauses.

(20) VOLUNTATIVE
[[Bat-iin [t_i id-iy] gesen] khol$_i$ chinix bai-san.
Bat-GEN eat-VOL PART food yours COP-PST
'The food Bat (said he?) would like to eat was yours.'

(21) IMPERATIVE
Urna [[t_i uts-eerei] gesen] kinoo-g$_i$ songo-son.
Urna watch-IMP PART movie-ACC choose-PST
'Urna picked a movie that was recommended. (*literally:* that people said to watch).'

2.2 The dependent interpretation of jussive subjects

Recall that matrix instances of voluntative and imperative clauses differ in the individual they target: Matrix voluntatives target the speaker, whereas matrix imperatives target the hearer. Assuming the target to correspond to the syntactic subject, we may think of voluntatives and imperatives as having different subjects. Crucially, syntactic embedding affects the interpretation of the jussive subject (the target of the jussive): In syntactically subordinated jussive clauses, the target shifts in its reference from the actual to the reported discourse participants. This means that the subject of embedded imperatives refers to the reported hearer (*Naraa* in (22)) rather than the actual hearer, and the subject of embedded voluntatives refers to the reported speaker (*Bat* in (23)) rather than the actual speaker.

(22) [Naraa-d [t_i av-aarei gej] Bat-iin khel-sen] vinoo$_i$ un-tei bai-san.
Naraa-DAT t_i buy-IMP that Bat-GEN say-PST wine.NOM price-INSTR COP-PST
'The wine that Bat told Naraa$_i$ that she$_i$/*you should buy was expensive.'

(23) Yuu-g$_i$ Bat Naraa-d [t_i tseverl-iy gej] khel-sen ve?
what-ACC Bat Naraa-DAT t_i clean-VOL that say-PST WH.QU
'What did Bat$_i$ tell Naraa that he$_i$/*I want(s) to clean?'

The interpretation of jussive subjects in unembedded and embedded position plays a central role in an analysis of jussive embedding: Any analysis, in order to be adequate, needs to capture the fact that the subject referent is selected from among the actual discourse participants in matrix jussives and from the reported discourse participants in embedded jussives. Note that the interpretation of the jussive subject in embedded position could be described using terminology from Obligatory Control (OC) constructions and the interpretation of OC PRO: The subject of the embedded imperative in (22) could be thought of as being *controlled* by the object of the higher

clause, i.e., embedded imperatives would compare to instances of *object control.* The subject of the embedded voluntative in (23), on the other hand, would be described as being controlled by the subject of the higher clause and thus resemble an instance of *subject-controlled* PRO.

Talk of the jussive subject as PRO, however, is at odds with the tentative proposal made in a previous section whereby the jussive subject may be analyzed as a silent indexical pronoun, i.e., *pro*.1 or *pro*.2. Is an indexical analysis of the jussive subject compatible with the newly observed fact that the interpretation of the subject depends on the reported rather than the actual utterance context in embedded jussives? Asked differently, which additional assumptions would an indexical analysis require to capture the interpretation of embedded jussive subjects? The interpretation of an indexical pronoun in embedded position as a reported rather than an actual discourse participant constitutes an instance of *indexical shift.* The phenomenon of indexical shift is familiar from languages such as Japanese, Nez Perce, Slave, Uyghur, among many others (cf. Deal 2017 for a comprehensive overview). Is there evidence that Mongolian allows for indexicals to be shifted as well? In the following section, I demonstrate that overt indexical pronouns in Mongolian never shift. My conclusion, given this observation, will be that an alternative explanation of the dependent interpretation of the jussive subject in embedded position is desirable: Specifically, as may be suspected based on the discussion above, I will argue that in a more adequate analysis the jussive subject consitutes an instance of PRO.

2.2.1 Sharpening the problem: Against indexical shift in Mongolian

In many accounts of imperatives, imperative subjects are analyzed as indexical pronouns (cf. Pak et al. 2008b for Korean, Stegovec & Kaufmann 2015 for Slovenian). If we were to adopt an indexical account of imperative and voluntative subjects for Mongolian as well, the changed interpretation of the jussive subject in embedded position would have to be viewed as an instance of indexical shift. However, Mongolian generally does not allow for indexical shift of overt indexicals; this even holds for indexicals in the complement of predicates found to embed jussives. The sentences provided below illustrate this restriction by exemplifying the unavailability of a shifted reading for various indexicals embedded under *khelekh* 'say'.

(24) demonstrates that indexical subjects of declaratives only allow for a strict interpretation: *namaig* in (24) can only refer to the actual speaker and does not permit an interpretation as the speaker of the reported utterance, Bat.

(24) Yuu-g_1 Bat [nama-ig/*bi t_i uts-sen gej] khel-sen ve?
what-ACC Bat 1-ACC/1.NOM t_i see-PST that say-PST QU
'What did Bat_i say that $\text{I}_{speaker}$/*he_i saw?'

In some languages, e.g., Uyghur (cf. Shklovsky & Sudo 2014), a correlation has been found between the case of an indexical and its shiftability: In Ugyghur, NOM but not ACC subjects can be shifted. Could the same mechanism be in place in Mongolian and prevent a shifted interpretation of the ACC subject in (24)? Note that Mongolian seems to disallow NOM on subjects of embedded declaratives if that subject is indexical, which makes a direct comparison between NOM and ACC subjects and their shiftability impossible. However, NOM in this position is licit if the subject is a full DP; if Mongolian worked like Uyghur, indexicals embedded inside NOM DP subjects should be eligible for shifting. However, examples of that type such as (25) seem to suggest that Mongolian does not in fact parallel Uyghur: The possessive indexical *chin* inside the embedded subject cannot receive a shifted interpretation, regardless of whether the subject is assigned NOM or ACC.

(25) [Naiz-zaluu/ naiz-zaluu-g chin khen-iig uns-sen gej] Bat Naraa-d
friend-guy.NOM/ friend-guy-ACC 2.GEN who-ACC kiss-PST that Bat Naraa-DAT
khel-sen ve?
say-PST QU
'Who did Bat say to Naraa_i that $\text{your}_{adr,*i}$ boyfriend kissed?'

Could it be that indexical shift is somehow contingent on the illocutionary force of a clause such that indexicals are shiftable in jussive but not in declarative clauses? This hypothesis is defeated by (26): The embedded clause contains a VOL, yet the 2PS DATIVE object *chamt* must be interpreted absolutely, i.e., as the actual hearer. The same holds for the indexical locative adverbial, *end* 'here' in (27): Its standing in an imperative clause does not make it eligible for a shifted interpretation. In fact, there is no evidence that non-subject person indexicals or spatial indexicals ever shift in Mongolian, regardless of the mood of the clause they appear in.

(26) Yuu_i Dorj Naraa-d [cham-t t_i avch-ög-iy gej] khel-sen ve?
what Dorj Naraa-DAT 2-DAT t_i buy-give-VOL that say-PST QU
'What did Dorj_i tell Naraa_j that he_i wants to buy you_{addr}/*her_j?'

(27) Bat cham-t [end yamar tavilga bairluul-∅ gej] khel-sen ve?
Bat you-DAT here which furniture store-IMP that say-PST WH.QU
'Which piece of furniture did Bat tell you to store here (at speaker's/*Bat's location)?'

Finally, one could wonder if Mongolian may distinguish between overt and covert indexicals with respect to shiftability such that only covert indexicals are allowed to shift. Jussives, which do not allow for overt subjects, could be explained as instances of covert indexical shift under such an analysis. However, since non-jussive clauses, by contrast, do not allow for subject drop in Mongolian, the minimal contrasts predicted by such an analysis between overt and covert indexical subjects in otherwise identical environments could not be tested empirically.

I do not have evidence that the hypothesis of covert indexical shift in Mongolian is inadequate. However, I argue that, a priori, an indexical shift analysis is no better or worse than alternative analyses that capture the facts equally well. Therefore, unless an indexical shift analysis can be argued to be more minimal than the analysis I put forward in the remainder of this work and assuming that my analysis can account for the same or a larger set of facts, I consider myself justified in choosing my analysis over an alternative analysis involving indexical shift. In fact, my approach seems favorable on the grounds that it explains phenomena by means of already existing concepts such as PRO and, in contrast to an alternative indexical shift analysis, circumvents the need to invoke new categories such as covert indexicals that can shift. Of course, this argument can only be maintained if independently motivated concepts can similarly replace covert indexicals in other languages for which they have been posited. (Thanks to Mikhail Knyazez, p.c., for discussion of this point.)

Based on the above arguments, I dismiss a hypothesis whereby indexicals in Mongolian are shiftable. Abandoning an indexical shift analysis necessitates a change in our assumptions about the nature of the jussive subject, in order to be able to account for its interpretation in embedded jussives. I will arrive at the conclusion that the jussive subject is an instance of PRO. However, before developing my account of jussive PRO, I will present another set of properties that provides strong support for such an analysis.

2.3 The *de se* requirement

By uttering a Mongolian voluntative report in which the voluntative clause is syntactically genuinely embedded, we necessarily ascribe to the reported speaker (i.e., *Bat* in (28)) a *de me* attitude about the subject of the embedded voluntative. (The term *de se* is used as a broader category comprising both *de me* and *de te* attitudes; *de te* attitudes become relevant in the context of embedded imperatives.)

If Bat has a *de me* attitude about some individual, call it A, being A is compatible with all of Bat's beliefs. The *de me* property of embedded voluntatives comes to the surface in contexts where Bat does not have a *de me* attitude towards the referent

of the voluntative subject, i.e., where it is not true that Bat thinks of himself as the target of the voluntative. Such contexts, represented by (29), cannot felicitously be described using a voluntative report.

For purposes of illustration, consider first the sentence in (28). The sentence is only acceptable in a scenario where Bat's original utterance expresses a *de se* attitude, as in "I want to clean x". I.e., (28) is infelicitous if prompted by a scenario where Bat sees his own reflection in a window and, mistaking it for an actual person, says to Naraa, "He (pointing at his own reflection) wants to clean x".

(28) Yuu-g_1 Bat Naraa-d [t_1 tseverl-iy gej] khel-sen ve?
what-ACC Bat Naraa-DAT clean-VOL that say-PST WH.QU
'What did Bat$_i$ tell Naraa that he$_i$ wants to clean?'

Another example illustrating the ascription of a *de se* attitude to the reported speaker in voluntative reports is provided in (29): The sentence in (29) is infelicitous as a report of the described situation, i.e., its only meaning is (29-b) as opposed to the intended (29-a).[5]

(29) Context (adopted from Deal 2017, modified): *Bat, at the hospital for a checkup, happens to glance at the chart of a patient's blood work. A doctor himself, Bat gathers from the chart that the patient is very sick and must be very weak. As the name on the chart is hard to read, Bat fails to realize that the chart is about himself. He says to the nurse when she comes in, pointing at the chart, "This guy should rest".*
#Bat suvilagch-d [amr-ey gej] khel-sen.
Bat nurse-DAT rest-VOL that say-PST
a. *intended:* 'Bat$_i$ said to the nurse he$_i$ should rest.' (non-*de se*)
b. 'Bat said to the nurse, "let me rest".' (*de se*)

Embedded imperatives in Mongolian are subject to a parallel, *de te* requirement: The reported speaker, *Bat* in the following examples, must have a *de te* attitude towards the referent of the embedded imperative subject (note that the imperative subject corresponds to the matrix addressee). For Bat to have a *de te* attitude towards some A means that it is compatible with Bat's beliefs that his addressee is A.

[5]Note that an alternative, quote parse is available for (29) (as well as (31)), where syntactic embedding is not enforced structurally. However, this does not change the reported judgments as the *de me*/*de te* requirement also applies to the subject of unembedded voluntatives and imperatives, respectively.

The imperative report (30) could be used if Bat had said to Naraa "Buy this wine!" or "I want you to buy this wine", but it would be infelicitous if Bat had said to Naraa, mistaking her for her twin Urna, "I want Naraa to buy this wine".

(30) [Naraa-d [t_1 av-aarei gej] Bat-iin khel-sen] vinoo$_1$ un-tei bai-san.
Naraa-DAT buy-IMP that Bat-GEN say-PST wine.NOM price-INSTR COP-PST
'The wine that Bat asked Naraa to buy was expensive.'

As before, we can bring the *de te* requirement of imperative reports to the surface by creating a scenario such as (31), where Bat does not think that he is talking to Naraa. Using the imperative report below to describe the given scenario is infelicitous.

(31) Context: *Bat is examining two twins, Naraa and Urna, at the same time although in different rooms. He walks into Naraa's room to talk to her about her results and starts explaining them to her, but then thinks that he's actually in the wrong room and is talking to Urna. He apologizes, and just before leaving tells Naraa, "Well, I shouldn't have told you all that, but, in summary, since Naraa is so weak, she should rest".*
#Bat Naraa-d [amr-aarei gej] khel-sen.
Bat Naraa-DAT rest-IMP that say-PST
a. *intended:* 'Bat said to Naraa$_i$ she$_i$ should rest.' (non-*de te*)
b. 'Bat said to Naraa, "you should rest".' (*de te*)

One might wonder if the reason for why the jussive reports are infelicitous in the described contexts could be that they are considered unfaithful reports of the original utterance. We can exclude this hypothesis at least in the case of the imperative report: My speaker reports that a direction given using a deontic modal (32-a) can felicitously be reported by way of an imperative (32-b).

(32) a. *Context: Bat is addressing his patient, Naraa:*
Amr-akh khereg-tei.
rest-INF need-INSTR
'You should rest.'
b. Bat Naraa-d [ambr-aarei gej] khel-sen.
Bat Naraa-DAT rest-IMP
'Bat said to Naraa, rest.'

To sum up, whoever the subject of an embedded jussive refers to must be this individual also according to the beliefs of the individual reported as the speaker of the jussive. This requirement is suggestive evidence for an analysis of embedded jussive

subjects as PRO: A *de se* interpretation is, notably, one of the canonical properties of the PRO subject in Obligatory Control constructions. Shifted indexicals, on the other hand, vary in whether or not they require a *de se* interpretation (see Deal 2017) and cannot, *a priori*, by expected to behave one way or the other.

Chapter 3

Towards an analysis: the jussive subject as PRO

The previous section provided evidence that jussive clauses can occur in syntactically embedded environments in Mongolian. Specifically, embedded jussives were found under predicates asserting the occurrence of a speech event, to wit, *khelekh* 'say', *sanal bolgokh* 'make a suggestion', as well as under the particle *gesen* 'it was said'.

Much attention was paid to the semantic properties of the jussive subject in embedded contexts. Let me remind you of the central observations: In section 2.2 it was shown that the reference of the jussive subject coincides with one of the discourse participants reported in the clause embedding the jussive. In more technical terms, the jussive subject was found to have a controller or antecedent DP in the matrix clause. Furthermore, we discovered a correlation between the form of the embedded jussive and the choice of controller: If the embedded jussive is a voluntative, its subject is controlled by the speaker DP in the higher clause, and if the embedded jussive is an imperative, its subject is controlled by the hearer DP in the higher clause. We also noted that this correlation imitates the dichotomy of subject vs. object control in Obligatory Control constructions.

Another property of jussive reports was laid out in section 2.3: The speaker reported to have uttered a jussive speech act (in all our examples: the matrix subject) must have a *de se* attitude towards the jussive subject; this attitude amounts to a *de me* attitude if the embedded jussive is a voluntative, and a *de te* attitude if the embedded jussive is an imperative.

On the one hand, both of these properties are properties also found in standard, obligatorily controlled PRO, which seems to be a good argument in favor of a corresponding analysis. Moreover, a possible alternative analysis of the jussive subject as

a silent indexical pronoun was dismissed on the grounds that Mongolian indexicals do not allow for shift elsewhere. The *de se* property constitutes another parallel between jussive subjects and PRO and thus further heightens the appeal of a PRO analysis compared to an indexical analysis: Shifted indexicals vary in whether or not they require a *de se* interpretation (cf. Deal 2017); a priori, there is no expectation for them to behave one way or the other.

In the following sections, I will lay out the details of such an analysis for the jussive subject. As hinted at earlier in this work, I will select from two approaches to PRO: a "simple" view of PRO, in which PRO is a semantically empty element (cf. Chierchia 1989), and a view of PRO as a more intricate constituent of type e with internal structure and interpretable ϕ-features. The Mongolian data can be captured using either approach to PRO. This is why I refer to Korean as a language where jussive embedding parallels jussive embedding in Mongolian in all crucial respects except for one: Embedded jussive subjects can be overt in Korean. This feature, as I will demonstrate, helps to differentiate between analyses and provides evidence in favor of a complex-PRO analysis.

3.1 The semantics of PRO: two views

I pursue an analysis of the jussive subject as PRO based, largely, on two properties the jussive subject shares with obligatorily controlled PRO: (i) The jussive subject is controlled by a DP argument in the higher clause. (ii) The reported speaker of the jussive necessarily has a *de se* attitude towards the referent of the jussive subject.

Various approaches to PRO in Obligatory Control constructions have been suggested in the literature. In what follows, I highlight two of them.

3.1.1 Empty PRO (Chierchia 1989)

Chierchia (1989) is concerned with the fact that PRO complements require a *de se* reading of the PRO subject: (1) is false as a description of the scenario in (1-b).

(1) *Mary wants PRO to win.*

a. True if Mary thinks "Hopefully I will win the competition".

b. False if Mary, not realizing she is listening to her own recording, thinks "This violinist plays better than me. I think she should win the competition."

To capture this limitation, Chierchia (1989), building on Lewis (1979), suggests

to analyze PRO clauses as properties rather than propositions, and attitude reports like (1) as relations between individuals and such properties. A Control predicate like *want* is correspondingly taken to select for properties instead of propositions; its denotation is provided in (2).

(2) $[\![\text{want}]\!]^w = \lambda P_{\langle s,et\rangle}.\lambda x.x \text{ wants } P \text{ in } w$

To achieve a property semantics for the complement, Chierchia analyzes PRO as a semantically vacuous element, which does not fill an argument position. I implement this view by assuming that PRO obligatory moves (for the sake of concreteness, this could be V-to-T movement), leaving a trace (a variable over individuals) to be abstracted over. This mechanism enables PRO to bind variables, which will be useful in accounting for PRO clauses containing local anaphors (such as (5)). Crucially, a PRO clause constitutes a property $\langle s, et\rangle$ and not a proposition $\langle st\rangle$ in such an analysis. The assumed structure and meaning of a PRO clause is sketched in (3).

(3) $[\![\text{PRO } \lambda_1\ [t_i \text{ to win}]]\!] = \lambda w.\lambda x.x \text{ wins in } w$

If *want* is assigned the meaning in (2), the sentence in (1) then states that *Mary desires having the property of winning.*

What makes reference to properties necessary to account for the contrast in (1), in other words, why is a proposition-centered view insufficient to distinguish *de se* attitudes? Let us review Lewis's (1979) original argument.

Lewis (1979) contends that the conceptually basic definition of attitudes is in terms of properties and not propositions, and that property-type attitudes *subsume* corresponding propositional attitudes. In his famous example, Lewis puts forward that two gods, Jehovah and Zeus, could be omniscient in terms of propositional knowledge yet they may lack knowledge of a certain form: Suppose Jehovah lives on top of the tallest mountain and throws down manna, and Zeus lives on top of the coldest mountain and throws down thunderbolts. Assume both Jehovah and Zeus know that *Jehovah throws manna from the tallest mountain* and *Zeus throws thunderbolts from the coldest mountain.* Yet Jehovah also believes "I throw thunderbolts from the coldest mountain", and Zeus believes "I throw manna from the tallest mountain". In other words, neither of them knows which of the two gods he is. Note that both gods still know exactly which world out of a set of possible worlds they live in, in other words, they know every proposition that is true of their world. Therefore, their ignorance cannot be described as a lack of propositional knowledge. However, their knowledge is incomplete as they do not self-ascribe all the properties they possess: Jehovah would be closer to omniscience if he self-ascribed the property of living on

the tallest mountain.

Lewis shows that propositional attitudes subsume attitudes in terms of properties. In the words of Pearson (2013: 4), "for any item of propositional knowledge, there is a corresponding piece of property-type knowledge". To illustrate with an example,

> "[i]f I know (or believe, or hope) that it is a beautiful day today, then I locate myself in a world in which it is a beautiful day today. I examine the set of world-individual pairs $\langle w', x\rangle$ that are candidates for the pair consisting of the actual world and myself, and exclude those in which it is not a beautiful day. Equivalently, I self-ascribe the property of inhabiting a world in which it is a beautiful day today." (ibid.)

As indicated by Pearson, this relationship is not limited to doxastic attitudes and extends to attitudes of all types, such as Mary's bouletic attitude in (1): As already mentioned above, by (1) Mary *self-ascribes* the property of winning in her desire worlds; put differently, Mary is reported to *desire having the property of winning.* A proposition-based description of the attitude whereby *it is true in Mary's desire worlds that Mary wins* could not capture the difference in truth value in the two contexts.

Having established that reference to properties is necessary to distinguish *de se* attitudes, let us return to the semantics assigned to attitude verbs such as *want.* Crucially, we can deploy a modification of a Hintikkan attitude semantics to render *de se* attitudes in a more familiar way: Assume that, like *want* in traditional treatments, Control *want* introduces desires by way of quantification; however, by (4-a), the domain of quantification is formed by centered worlds (pairs of type $\langle se\rangle$ that consist of a world and its individual center) rather than by simple worlds.[1] A corresponding accessibility relation $\text{DESIRES}_{w,x}$ denotes the set of centered worlds $\langle w', x'\rangle$ such that being x' in w' is compatible with the desires of x in w.

(4) a. $[\![\text{want}]\!]^w = \lambda P_{\langle s,et\rangle}.\lambda x.\forall\, \langle w', x'\rangle \in \text{DESIRES}_{w,x}\colon\ P(w')(x') = 1$

b. $\text{DESIRES}_{w,x} := \{\langle w', x'\rangle\colon$ being x' in w' is compatible with the desires of x in $w\}$

Given (1-b), sentence (1) is false in the non-*de se* scenario (1-b) since it is not the case that in all such $\langle w', x'\rangle$ compatible with Mary's wishes, x' wins; quite on the contrary, Mary's desires are such that she would rather be x' in w' and have some other y' ("the woman playing", who she does not identify with herself) win the competition.

[1]This way of thinking about *de se* attitudes goes back to Lewis (1986).

Or, in Chierchia's terms, Mary in this scenario does *not* find self-ascription of the property of winning desirable.[2]

3.1.2 Against empty PRO

As is widely known, Obligatory Control (OC) PRO has ϕ-features (cf. for example, Radford 1988). Among others, features on PRO are reflected in the overt shape of PRO in languages where PRO can be spelled out (as shown for Korean in section 3.2), and in the form of local anaphors in languages like English, where PRO is always covert. Consider (5) as an instance of covert PRO: Given that reflexive anaphors such as *herself* need to be bound locally, normally, within their clause, *herself* must be taken to be bound by PRO rather than by the matrix subject *Sue*. The ungrammaticality of forms with alternative sets of ϕ-features, e.g., *himself, myself* etc. suggests that PRO's ϕ-features are specified as {3,SG,FEM}.

(5) Sue$_i$ expected PRO$_i$ to get herself$_i$/*himself$_i$/*myself$_i$/*oneself$_i$ promoted.

How does a Chierchia style analysis handle the presence of features on PRO, given that PRO is semantically empty?

A view that seems appealing at first exploits the assumption that features on bound variables are not semantically interpreted and only present at PF (Kratzer 1998, Stechow 2003, Heim 2008): Under this view, the features on PRO are merely a phonological reflex of agreement with a binder in the matrix clause. This, of course, raises the question as to the type of binding instantiated in these constructions. Consider the sentences in (6). The asymmetry in grammaticality suggests that PRO can be bound by (and hence agree with) *Pavarotti* but not with *Olga*. What determines this asymmetry?

(6) a. *Pavarotti promised Olga$_i$ PRO$_i$ to restrain herself$_i$.
b. Pavarotti$_i$ promised Olga PRO$_i$ to restrain himself$_i$.

The question whether a given matrix DP can bind PRO is not a matter of syntactic function: PRO agrees with the matrix subject in (6) involving *promise* but with the

[2]Note that under such an analysis, we will need to say something about Control predicates which alternatively combine with finite – declarative or interrogative – complements, e.g., *expect, hope, ask, tell*: Corresponding predicates would have to be ambiguous between a $\langle\langle s, et\rangle, et\rangle$ item paralleling *want* in (2) or (4-a), and a homophonous item of type $\langle st, et\rangle$ imitating standard attitude verbs. A complex PRO analysis as sketched in the following section avoids having to postulate such lexical ambiguity.

object in (7) featuring *tell.*[3]

(7) a. Pavarotti told Olga$_i$ PRO$_i$ to restrain herself$_i$.
b. *Pavarotti$_i$ told Olga PRO$_i$ to restrain himself$_i$.

Rather, agreement seems to track controller choice: PRO agrees with the matrix subject under Subject Control verbs like *promise* but with the object under Object Control verbs such as *tell.* Unfortunately, this correlation between the semantics (controller choice) and the syntax (agreement via binding) does not fall out from the system under the current analysis. Let me explain why.

In Chierchia's account, controller choice is lexically encoded. For example, *promise* in (8-a) attributes the property denoted by the PRO clause to the external (as opposed to the internal) argument's counterpart. At the same time, the assumed semantics is blind to co-indexation between PRO and a matrix argument: By (8-a), the complement is a property whose holder is Pavarotti's (the attitude holder's) counterpart x' regardless of whether PRO is co-indexed with *Pavarotti* or *Olga.* In other words, unless we add a syntactic stipulation that prevents co-indexing between Olga and PRO, (6-a) is identical in meaning to (6-b).

(8) a. $[\![(6\text{-a})]\!]^{w,g} = [\![(6\text{-b})]\!]^{w} = 1$ iff
$\forall \langle w', x', y' \rangle \in \text{PROMISE}_{w,Pavarotti,Olga} : [\lambda w''.\lambda z.z \text{ restrains } z](w')(x')$
b. $\text{PROMISE}_{w,x,y} := \{\langle w', x', y' \rangle$: being x' in w' addressing y' is compatible with what x promises y in $w\}$

If we want to maintain a Chierchia style semantics while also accounting for the agreement facts, we have to make some rather non-canonical assumptions. Let me present two implementations to illustrate this.

On the one hand, we could add an independent lexical rule that maps semantic control relations to a (morpho-)syntactic relation of agreement or feature sharing *Agree(X, Y)*:

(9) For an attitude verb taking a property complement $P_{\langle s,et \rangle}$ and quantifying over triplets $\langle s, e, e \rangle$, Agree(X, Y) is defined over pairs of lexical items $\langle X, Y \rangle$ such that $[\![\text{X}]\!]$'s counterpart is the individual center $[\![\text{Y}]\!]$ in the triplet $\langle s, e, e \rangle$ of which P is predicated.[4]

[3]This, for example, rules out an analysis in which agreement is mediated by the Control predicate along the lines of Stechow's (2003) assumption of *binding by verbs*: Under such an analysis, the Control predicate would gets its features from the syntactic subject through subject-verb agreement and transmit them to PRO as its bindee.

[4]The way the rule is formulated it does not cover quantificational antecedents. However, an

By this rule, Y (corresponding to PRO) would be x' under the Subject Control verb *promise*, but y' under Object Control *ask*; it would therefore agree with the external argument in the former case, but with the internal argument in the latter case. However, we would need to make significant adjustments to allow a syntactic operation like agreement to be determined in this way inside the lexicon.[5]

(10) a. $\forall \langle w', x', y' \rangle \in \text{PROMISE}_{w,x,y} : P(w')(x')$
b. $\forall \langle w', x', y' \rangle \in \text{ASK}_{w,x,y} : P(w')(y')$

Landau (2018:11) mentions a similar rule that is applied outside narrow syntax, though he locates it post-LF rather than before the derivation:

> One option is to make substantial changes in the theory of agreement. Most importantly, agreement would have to be able to operate postsyntactically, and even post-LF, at the semantic component. In particular, Agree (x, y) would have to be defined over pairs $\langle x, y \rangle$ such that "y binds the individual variable that is the doxastic counterpart of x" [This rule is not designed to deal with Object Control verbs.] Although possible in principle, such a move seems very undesirable. Even ignoring the characterization of the dependency itself, the very idea that agreement applies to semantic representations goes against the grain of much work in generative grammar.

To conclude, we would have to make significant theoretical concessions if we were to adopt a proposal along the above lines.

So far I did not dispute the idea that PRO's features are uninterpretable. Could a Chierchia style analysis be saved if all occurrences of ϕ-features, including on PRO, are in fact not vacuous, but semantically present (as presuppositions)? Could failure to "agree" simply be a result of semantic anomaly?

Such an analysis would work for simple cases such as (6) and (7). To illustrate, in (6-a) a feature [FEM] on *herself*$_i$ would introduce a presupposition that its referent $g(i)$ is female. This presupposition is transmitted to (vacuous) PRO via binding. (PRO is assumed to undergo obligatory abstraction as shown in (3).) The property denoted by the PRO clause would end up being [$\lambda w.\lambda x : x$ *is female.* x *restrain* x *in* w]. (Martin Hackl, p.c.).

extension should be straightforward and the simplified version is used for readability.

[5]One may ask if agreement could use semantic predication (of the PRO clause property to the controller) as its vehicle. This does not seem feasible: As Landau (2018) points out, the property is predicated of the attitude holder's doxastic *counterparts* (of herself or her addressee), rather than of attitude holder herself.

Assuming that the presupposition on PRO projects into the restrictor of *promise*, upon composition, we derive the following meaning (using *promise* in (8-a)).

(11) $[\![$Pavarotti promised Olga PRO$_i$ to restrain herself$_i]\!]^w = 1$ iff
$\forall \langle w', x', y' \rangle [\langle w', x', y' \rangle \in \text{PROMISE}_{w,Pavarotti,Olga}$, & $\underline{x' \text{ is female in } w'} \Rightarrow x'$ restrains x' in $w']$

The created restrictor would be empty in the described scenario since Pavarotti presumably identifies as male in all worlds compatible with his promise. The conditional would thus be trivially true. To avoid semantic deviance of this type, *himself* must be used, which creates the appearance of agreement between PRO and the controller *Pavarotti*.

Unfortunately, a semantic approach leads to wrong predictions in other cases. Let me present two such instances.

Overt variables bound by PRO can be ambiguous between *de se* and *de re* readings. The latter option causes problems in Chierchia's framework. Consider the following example, inspired by Landau (2018):

(12) *Context: After reading an impressive article by a politician, Palin says to Bill: "I promise to vote for this politician." What she doesn't notice is that she herself authored the article.*
Palin promised Bill [PRO$_i$ to vote for herself$_i$/her$_{*i}$]

In this context, *herself* is interpreted *de re*. However, since *herself* is locally bound by PRO, it will inevitably be interpreted *de se* together with PRO by Chierchia's semantics, i.e., the property denoted by the PRO clause would be [$\lambda x.x$ *votes for* x]. To capture the *de re* interpretation of *herself*, *herself* must be bound directly by *Palin*; this, however, leads to the wrong expectation of ungrammatical *her* instead of observed *herself*.

There is another argument against semantically active ϕ-features on empty PRO, brought up by Schlenker (2003). Consider the following sentence.

(13) Alice (a transsexual) wants to become a man, and PRO$_i$ to buy herself$_i$/*himself$_i$ a car. (Schlenker 2003)

If the derivation of (13) proceeds analogous to (11) and the presupposition on grammatical *herself* projects into the restrictor of *want*, the resulting meaning is as follows.

(14) $[\![$Alice wants PRO$_i$ to buy herself$_i$ a car$]\!]^w = 1$ iff
$\forall \langle w', x' \rangle [\langle w', x' \rangle \in \text{DESIRES}_{w,Alice}$ & $\underline{x' \text{ is female in } w'} \Rightarrow x'$ buys herself a

car in w']

Note that the restrictor of the desire modal is empty in the described context given that Alice identifies as male in all her desire worlds. Consequently, the conditional is trivially true! Unlike for (6-a), derived in (11), the prediction of semantic deviance is undesirable in the case of (13) and at odds with the actual well-formedness of *herself* in the described context.

Before I close this section, let me highlight one option we have not yet explored: Could the controlled subject be a regular bound variable *pro*, and the Control verb a standard attitude predicate whose complement is a proposition $\langle st \rangle$? This option is illustrated below.

(15) a. Pavarotti$_i$ promised Olga *pro*$_i$ to restrain himself$_i$.

b. $[\![(15\text{-a})]\!]^{w,g} = [\![\text{promise}]\!]^{w}$ (λw. Pavarotti restrains himself in w)(Olga)(Pavarotti)
$= 1$ iff $\forall w'$ compatible with Pavarotti's promises to Olga in w, Pavarotti restrains himself in w'.

Regarding such an account, note that Chierchia's analysis was developed precisely because a classical attitude analysis along the above lines does not capture the obligatoriness of *de se* for PRO: By the truth conditions in (15-b), (15-a) would falsely be predicted to be true also if Pavarotti, watching a taped performance, promised to Olga that "this tenor will restrain himself" in his next performance, unaware that he himself is that tenor.

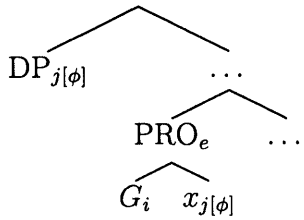
To summarize, we saw that the presence of features on PRO that match the features of the controller DP creates significant problems for a property analysis of PRO clauses as suggested by Chierchia (1989): On one side, a PF analysis of PRO's features would fail to account for the correlation between feature matching and controller choice, unless we introduce certain theoretically highly controversial assumptions. On the other side, an alternative analysis that takes the ϕ-features on PRO to be semantically interpretable would make wrong predictions in a range of cases including *de re* readings of bound variable readings.

My conclusion, which is in line with Landau (2018), is to abandon Chierchia's semantics for PRO and Control verbs in favor of an analysis along the lines of complex PRO. This analysis is anticipated in rough terms in the next section, and will be laid out in more detail in section 5.2.

3.1.3 Anticipating complex PRO

In an alternative view of PRO, PRO amounts to an individual-type element with a more complex semantics and, in one implementation of the view, internal structure. Specifically, I put forward the following structure for PRO.

(16)



A crucial property of PRO in (16) is the presence of an individual variable x. x is bound by the controller DP and agrees with its binder in ϕ-features. Importantly, the features observed on PRO hence originate *inside* PRO, on x.

A distinguishing property of a complex PRO analysis is that, unlike an analysis of PRO as semantically empty, PRO's features can be taken to have *semantic content.* In other words, a corresponding analysis allows us to dispense with the assumption that features on PRO are semantically inert. This possibility will become amply clear in chapter 5; moreover, it connects to recent proposals (Spathas 2010, Bassi & Longenbaugh 2018) which argue against the idea of semantically empty features on bound variables (counter to Kratzer 1998, Heim 2002, among others).

In the same chapter I will also show that the correlation between agreement and controller choice is not coincidental: As will be proven in section 5.5.3, the identity of the controller (the binder) has a direct impact on the semantics in such an analysis, and the wrong choice of controller leads to a semantic violation (presupposition failure or contradiction). Moreover, I will demonstrate how such an analysis is able to successfully handle examples such as (13) and (12), which turned out to be problematic for a property analyis of PRO clauses.

However, before I present the details of this analysis, I ask the reader to bear with me and return to the topic of embedded jussives and their subject.

The following section presents evidence that not only regular PRO has ϕ-features: The subjects of Korean embedded jussive, which parallel Mongolian jussive subjects in most respects including the *de se* interpretation, display reflexes of ϕ-agreement with their controller.

I will use this fact as an argument that a complex PRO analysis is also the right analysis for jussive subjects in Korean and, in the interest of uniformity, should be assumed to underlie jussive subjects in Mongolian as well.

3.2 PRO has ϕ-features: evidence from Korean

In this section I provide evidence that ϕ-features on subjects of Control complements are not limited to OC PRO: Using the case of Korean, I show that ϕ-features must also be taken to characterize the PRO subject of jussive clauses.

There is borad consensus in the literature that Korean allows for embedding of jussives (Portner 2004, 2007; Pak et al. 2008b; Madigan 2008; Park 2011, 2014, 2018). Korean jussives come in three different forms. Embedded jussive subjects of all three forms are characterized by the same properties familiar from embedded jussives in Mongolian, which we identified as properties also found on PRO: Like their Mongolian counterpart, embedded jussive subjects in Korean have a controller in the matrix clause. Moreover, also like in Mongolian, Korean jussive subjects require that the speaker of a jussive report have a *de se* attitude towards the jussive subject. However, different from Mongolian, Korean jussive subjects are optionally overt, in which case they show reflexes of ϕ-agreement with their controller in the matrix clause (cf. also Park 2011:470pp.). The examples below illustrate this possibility: (17) shows agreement of the embedded subject, spelled out as *nayka*, with its 1PS controller *nayka*. Similarly, the 2PS embedded subject *neyka* in (18) agrees with its controller, the matrix object *ne-eykey*. Finally, the embedded subject in (19) reflects the 1PS feature on one of its two controller DPs.

(17) Nay-ka inho-eykey [(nay-ka) swuni-lul towacwu-**ma**-ko] malhayss-ta.
I-NOM Inho-DAT I-NOM swuni-ACC help-PROM-C said-DECL
'I said to Inho that I promise to help Swuni.' (Pak et al. 2008b)

(18) Inho-ka ne-eykey [(ney-ka) chayk-**ula** ilk-ula-ko] hayss-ta.
Inho-NOM you-to you-NOM book-ACC read-IMP-C said-DECL
'Inho told you to read the book.' (Portner et al. 2014)

(19) John-un na-eykey [(wuli-ka) ttena-**ca**-ko] ceyanhayss-ta.
John-TOP I-DAT we-NOM leave-EXH-C proposed-DECL
'John$_i$ proposed to me$_j$ PRO$_{i+j}$ to leave.' (Park 2011)

The assumption that PRO is complex along the lines of (16) is bolstered by the existence of overt jussive PRO in Korean: As I hope to have shown in the preceding section, once PRO can be argued to have ϕ-features, a complex PRO analysis is superior to an analysis of PRO as a semantically empty element in the style of Chierchia (1989).

I take the role Korean plays in my argument as an opportunity to expound on Korean jussives and their occurrence in embedded position in the next chapter. After

familiarizing the reader with the basic facts, I pick up where we have left off and continue to develop an analysis of embedded jussives in Mongolian and Korean in chapter 5.

Chapter 4

The Korean jussive in matrix and embedded position

4.1 The Korean jussive in matrix position

Korean marks clause type, or illocutionary force, by means of different clause-final particles. This includes particles for declarative and interrogative clauses, illustrated in (1) and (2), as well as particles marking various kinds of non-assertive speech acts.

(1) Cemsim-ul mek-ess-**ta**.
lunch-ACC eat-PST-DECL
'I ate lunch.'

(2) Cemsim-ul mek-ess-**ni**?
lunch-ACC eat-PST-QU
'Did you eat lunch?'

I focus on three non-assertive clause-types that are known as *promissive*, *imperative*, and *exhortative* in the literature on Korean and often collapsed under the term *jussives*. The three jussive forms are associated with different clause-final particles, *-ma*, *(e)-la*, *-ca*, respectively, as illustrated in (3-b) through (5) (examples from Pak et al. 2008b).

(3) *Promissive:* 1SG/1EXCL SUBJECT

a. Nayil ∅ cemsim-ul sa-**ma**.
tomorrow ∅ lunch-ACC buy-PROM
'I will buy lunch tomorrow.'

b. Nay-ka cemsim-ul sa-**ma**.
I-NOM lunch-ACC buy-PROM
'I will buy lunch.'

(4) *Imperative:* 2 SUBJECT
(Ney-ka) cemsim-ul mek-**ela**.
you.SG-NOM lunch-ACC eat-IMP
'Eat lunch!'

(5) *Exhortative:* 1INCL SUBJECT
(Wuli-ka) cemsim-ul mek-**ca**.
we-NOM lunch-ACC eat-EXH
'Let's (you and I) eat lunch.'

Jussives differ in the individual targeted by the modal proposition. By way of a descriptive generalization, we could say that promissives combine with a first-person singular or a first-person plural exclusive subject, imperatives with a second-person subject, and exhortatives with a first-plural inclusive subject, assuming that the target coincides with the clausal subject.

The above examples show that jussives allow for overt pronominal subjects besides null subjects. The interpretation and syntactic properties (person/number features) of the subject are reflected in the pronominal forms. Additionally, promissives and imperatives permit referential DPs in subject position, presumably to the extent that the DPs can be used to refer to the speaker (in the case of promissives), the addressee (in imperatives), or the two together (in exhortatives), cf. (6) through (8) from Pak et al. (2008a, 2008b). Pak et al. note that even in the presence of referential DP subjects, the subject seems to have active first (promissive) or second (imperative) person features, judging by the form of the anaphors referring to the subject, *nay* 'my' and *ney* 'your', respectively.

(6) **Emma-nun** nay/emma il-ul ha-ma.
mommy-TOP my/mommy work-ACC do-PROM
'Mommy will do her work.'

(7) **Inho-nun** ney/inho il-ul hay-la.
Inho-TOP your/Inho work-ACC do-IMP
'Inho do your work.'

(8) **Emma-lang Inho-ka** kati chengso ha-ca.
Mommy-with Inho-NOM together clean do-EXH
'Let's clean together, mommy and Inho.'

To strengthen their argument that jussive subjects are syntactically first or second person even when expressed by referential DPs, Pak et al. (2008b) contrast jussives with declarative and interrogative clauses that involve a referential DP subject picking out the speaker or hearer: in clauses of that type, a subject anaphor must either be null or a repetition of the noun, but cannot be first or second person. This is illustrated by (9): The third-person subject *emma* refers to the speaker, but the possessive anaphor must be null or a repetition of the subject noun *emma* rather than a first person pronoun.

(9) Emma-nun (emma) aki-lul salanghay-yo.
mommy-TOP (mommy) baby-ACC love-DECL(polite)
'Mommy loves (mommy's) baby.'

4.2 Arguments for a uniform clause type *jussive* (Pak et al. 2004, 2008a)

Pak et al. (2004, 2008a) make a case for the treatment of Korean promissives, imperatives, and exhortatives as inflectional forms of a uniform clause type *jussive*, based on certain features these clauses share to the exclusion of other clause types. To implement this idea, Pak et al. (2008b) take jussive clauses to involve a uniform morpheme JUSSIVE, which they represent as the head of a dedicated Jussive Phrase.

In what follows, I review the set of features that are common to all jussive types in Korean according to Pak et al. (2004).

4.2.1 Restriction on overt subjects in embedded position

As noted by Pak et al. (2004), the subject in Korean embedded declaratives and interrogatives can be realized by referential DPs, cf. (10) and (11), or it can be null, cf. (12).[1]

(10) John-i tom-eykey [**mary-ka** cip-ey kass-ta-ko] malhayss-ta.
John-NOM Tom-DAT Mary-NOM home-to went-DECL-C said-DECL
'John told Tom that Mary went home.'

[1]The availability of overt pronominal subjects is generally heavily constrained in Korean, which is a *pro-drop* language. However, even jussives allow for overt pronominal subjects under certain circumstances related to agreement with a DP in the matrix clause. These cases, which play a central role in my analysis, will be discussed in detail in section 4.3.4.

(11) John-i tom-eykey [**mary-ka** cip-ey kass-nya-ko] muless-ta.
John-NOM Tom-DAT [Mary-NOM home-to went-QU-C asked-DECL
'John asked Tom whether Mary went home.'

Null subjects of declaratives and interrogatives can have an antecedent in the matrix clause or get their reference from context:

(12) Na-nun [swuni-lul towacwu-lke(t-i)-la-ko] sayngkakhan-ta.[2]
I-TOP swuni-ACC help-will-(COP)-DECL-C think-DECL
'I think that I/he/she/they will help Swuni.'

Different from declaratives and interrogatives, embedded promissives, imperatives, and exhortatives generally ban full referential DPs from subject position, cf. (13) through (14). (Pak et al. do not include a corresponding example of an embedded exhortative, though their claim does cover exhortatives as well.)[3]

[2]The embedded sentence final particle *-la* is an allomorphic variant of the declarative sentence final particle *-ta*, which occurs in embedded copula constructions.

[3]Pak et al. 2008b, a.o.) note that referential DP subjects are exceptionally licensed in embedded jussives if the subject stands in a subset relation to the referent of the matrix DP targeted by the jussive:

In (i), involving an embedded EXHORTATIVE, the DP in embedded subject position picks out a subset of the matrix speaker and addressee (according to Pak et al. (2008b), though it is not clear from the translation that the matrix speaker, John, is part of the subset in this case), namely, those people who want to eat rice cake.

(i) John-i haksayngtul-eykey [**ttekpoki-lul mek-ko sip-un salamtul-un**
John-NOM students-DAT ricecake-ACC eat want-PRES people-TOP(CONTR)
kati ka-ca-ko] malhayss-ta.
together go-EXH-C said-DECL
'John said to the students that those people who want to eat rice cake go with him.'

In (ii), the DP subject of the embedded IMPERATIVE refers to a subset of the matrix addressee, the students, namely, to those students who have finished their homework.

(ii) John-i haksayngtul-eykey [**swukcey-lul ta han salamtul-un** cip-ey
John-NOM students-DAT homework-ACC all finish people-TOP(CONTR) home-to
ka-la]-ko malhayss-ta.
go-IMP-C said-DECL
'John told the students that those who have finished their homework should go home.'

In both examples, the embedded subject is a DP with an overt head modified by a relative clause. In the absence of an overt head, one could have potentially analyzed the example as PRO modified by a relative clause and derive the subset relation as the result of intersecting the reference of the controller *the students* with the relative clause.

(13) John-i tom-eykey [(*mary-ka) nayil tasi o-ma-ko]
John-NOM Tom-DAT Mary-NOM tomorrow again come-PROM-C
malhayss-ta.
said-DECL
'John promised Tom that he would come back tomorrow.'

(14) John-i tom-eykey [(*mary-ka) cip-ey ka-la-ko] malhayss-ta.
John-NOM Tom-DAT Mary-NOM home-to go-IMP-C said-DECL
'John ordered Tom to go home.'

Pak et al. (2004) suggest that, across languages, overt subjects of jussives are necessarily contrastively or emphatically focused in both matrix and embedded environments, and that this carries over to Korean. Considering the marginality of full DP subjects in embedded jussives as opposed to full DP subjects in matrix jussives (cf. (6) through (8) for examples of the latter), the conclusion, not drawn explicitly by the authors, must then be that subject focus is more difficult to achieve in embedded position. Park (2011) suggests that overt *pronominal* jussive subjects are also obligatorily focused, thus strengthening Pak et al.'s claim that focus on overt jussive subjects is obligatory. Provided this claim is correct, we must assume that focus does not need to be expressed overtly (e.g., using the focus marker *-i* or the contrastive topic marker *-un*), judging by the absence of corresponding markers, in particular, on overt pronominal subjects (but also on full DP subjects in matrix jussives as in (8)).

Furthermore, Pak et al. (2008b: 169) note that unlike subjects in other types of embedded clauses, null subjects of embedded jussives are limited to one interpretation, determined by the respective jussive form: The subject of an embedded promissive always refers to the matrix subject (*John* in (13)), the subject of an embedded imperative refers to the matrix object (*Tom* in (14)), and the subject of an embedded exhortative to a group consisting of both matrix subject and matrix object.[4,5]

[4]Referring to syntactic functions rather than thematic roles is somewhat misleading, since, for a given predicate, what remains stable across voice alternations is the thematic role rather than the syntactic function of the controller. For example, transitive *expect* is standardly classified as an Object Control verb, even though the controller of PRO is the matrix *subject* if *expect* is passivized. In a later section I show that the priority of thematic roles over syntactic functions also derives the behavior of the perception verb *hear* in Korean, where *hear* can embed jussives. However, following the tradition prevalent in the literature on Control, I adopt this terminology despite the confound pointed out above.

[5]Note that the situation reported by Pak et al. and described in this work conflicts with judgments provided by Dorothy Ahn (p.c.), who allows for the subject of embedded imperatives to have

4.2.2 Negation

According to Pak et al. (2004,2008a), jussives differ from declaratives and interrogatives in the type of negative marker they require, *-ani* or *-mal*: Declaratives and interrogatives mark negation by way of *-ani*, while *-mal* is licensed only in the presence of deontic modality (Han & Lee 2002, in Pak et al. 2008a). On the other hand, *-mal* is the only option to express negation in imperatives and exhortatives, and in promissives *-mal* can be used besides *-ani*, see (15). The use of *-mal* in jussives does not require the presence of an overt deontic marker.

(15) (Pak et al. 2008b)

a. Ka-ci **mal/an(i)h**-u-ma. (PROM)
eat-NOM NEG(+do)-u-PROM
'I promise not to go.'

b. Ka-ci **mal/*an(i)**-a-la. (IMP)
eat-NOM NEG-a-IMP
'Don't go.'

c. Ka-ci **mal/*an(i)**-ca. (EXH)
eat-NOM NEG-EXH
'Let's not go.'

4.2.3 Incompatibility with evidential and evaluative particles

Korean has certain mood particles, broadly classified as evidential and evaluative particles in Pak et al. (2008a). The set of particles cited in Pak et al. (2004,2008a) includes the following forms: retrospective (RTR) *-te*, apperceptive (APE) *-kwun*, sup-

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a contextual referent not expressed by any of the matrix DPs: Suppose that the director says to me "Dorothy should go". I can felicitously report this directive to Dorothy in the following way.

(i) Director-ka [(ney-ka) ka-la-ko] malhayssta.
director-NOM you-NOM go-IMP-C said
'The director said that you should go.'

Interestingly, Ahn also reports that the sentence becomes ungrammatical (as is expected under a Control analysis to begin with) if the matrix addressee is expressed overtly. (Leaving out the embedded subject makes it worse.)

(ii) Director-ka na-eykey [?*(?ney-ka) ka-la-ko] malhayssta.
director-NOM me-DAT you-NOM go-IMP-C said
'The director said that you should go.'

positive (SUP) *-ci*, and apprehensive (APR) *-ney*. As the authors point out, the availability of these markers correlates with clause type distinctions and varies between declaratives, interrogatives, and jussives: In declarative clauses the entire above set of mood markers is available, while interrogative clauses are compatible with retrospective and suppositive marking but rule out apperceptive and apprehensive marking, cf. (16). Promissives, imperatives, and exhortative, on the other hand, cannot co-occur with any of the abover markers, cf. (17).

(16) a. John-i cemsim-ul mek-ess-**tey**-yo./?
John-NOM lunch-ACC eat-PST-RTR-POL[6]
'John ate lunch./ Did John eat lunch?'

b. Cemsim-ul mek-ess-**ci**-yo./?
John-NOM lunch-ACC eat-PST-SUP-POL
'(Of course,) John ate lunch./ John ate lunch, right?'

c. John-i cemsim-ul mek-ess-**kwun**-yo./*?
John-NOM lunch-ACC eat-PST-APE-POL
'(Ah,) you ate lunch.'

d. John-i cemsim-ul mek-ess-**ney**-yo./*?
John-NOM lunch-ACC eat-PST-APR-POL
'John ate lunch.'

(17) (from Pak et al. 2008a)

a. *Nay-ka nayil cemsim-ul sa-**te/kwun/-ci/-ney**-ma. (PROM)
I-NOM tomorrow lunch-ACC buy-RTR/APE/SUP/APR-PROM

b. *Ne cemsim-ul mek-**te/kwun/-ci/-ney**-la. (IMP)
you lunch-ACC eat-RTR/APE/SUP/APR-IMP

c. *Wuli cemsim-ul mek-**te/kwun/-ci/-ney**-ca. (EXH)
we lunch-ACC eat-RTR/APE/SUP/APR-EXH

4.2.4 Incompatibility with temporal markers

Pak et al. (2004, 2008a) point out that promissives, imperatives and exhortatives are, moreover, similar in not allowing tense markers.

(18) a. *Mek-**ess/-ul/-nun**-u-ma
eat-PST/FUT/PRES-PROM

b. *Mek-**ess/-ul/-nun**-e-la.
eat-PST/FUT/PRES-PART-IMP

[6] POL stands for the politeness marker.

c. *Mek-**ess-/ul/-nun**-ca
eat-PST/FUT/PRES-EXH

4.2.5 Coordination

Imperatives can be conjoined with promissives and exhortatives by means of the coordinators *-(kuli)ko* 'and' and *-kena* 'or', cf. (19), which generally only conjoin clauses of the same type. I.e., as Pak et al. point out, *-(kuli)ko* and *-kena* can connect declaratives with declaratives but not with interrogatives. The coordination facts are taken as a further argument supporting the assumption of a shared clause type jussive uniting the three forms under discussion. (Pak et al. (2008b) point out that the imperative marker may be dropped in the presence of *-ko*, and must be dropped with *kena*, but that "the imperative interpretation is still clear". It would be interesting to know if there are other environments where imperatives correlate with null marking; note that in simple imperative clauses, null marking does not seem an option.)

(19) IMP & EXH with *-(kuli)ko*
Ne-nun sakwa-lul mek(-ela.**kuli)ko** na-nun pay-lul mek-u-ma.
you-FOC apple-ACC eat(-IMP)-and I-TOP pear-ACC eat-u-PROM
'You eat an apple and I promise to eat a pear.'

(20) IMP & PROM with *-(kuli)ko*
Minswu, ne-nun cip-ey ka(-la.**kuli)ko** yenghi-wa na-nun hakkyo-ey
Minswu you-FOC home-to go-and Yenghi-and I-TOP school-to
ka-ca.
go-EXH
'Minswu, you go home and Yenghi and I, let's go to school.'

(21) IMP & EXH with *-kena*
John, ne cip-ey honca ka-**kena** na-lang tosekwan-ey ka-ca.
John you home-to alone go-or I-with library-to go-EXH
'John, either you go home by yourself or let's go to the library with me.'

4.2.6 Semantic parallels

Pak et al. (2008a,b) argue that the syntactic parallels are matched by certain interpretational similarities between promissives, imperatives, and exhortatives: In their view, all three forms can be considered to express requests or directives that differ merely in the targeted discourse participants. To capture this semantic parallel, Pak

et al. (2008a) refer to Portner's analysis of imperatives, whereby imperatives add a property to the addressee's TO-DO-LIST (which, by way of a specific pragmatic mechanism, is then understood as a requirement imposed on the addressee): Adopting this assumption, Pak et al. assume promissives and exhortatives to work similarly in that the former adds a property to the speaker's TO-DO-LIST, while the latter adds a property to both the speaker's and the addressee's TO-DO-LISTS.

In my analysis of Korean jussives (and, similarly, of jussives in Mongolian), I adopt a similar stance towards the relationship of the different jussive forms and assign to them a uniform meaning. In contrast to Pak et al. however, I take jussive force to have a counterpart at LF and be contributed by a silent universal modal akin to bouletic *want*, which is present in all jussive clauses.

4.3 The jussive in embedded position

There is strong consensus in the literature that all three Korean jussive forms, i.e., promissive, imperative, and exhortative, can be embedded. Reports to that effect can be found in Pak et al. (2004, 2008a,b); Madigan (2008); Park (2011).[7]

In the section at hand, I present some of the evidence found in the literature, according to which Korean jussive embedding is genuine. Moreover, I highlight two semantic properties of Korean jussives that have also been found in Mongolian embedded jussives: First, I show that, like in Mongolian, embedded jussive subjects in Korean are coreferent with a specific DP argument in the higher clause, in other words, that Korean jussive subjects have a *controller*. Second, I summarize the data found in the literature which can be used to argue that the speaker of jussive reports must have a *de se* attitude towards the embedded jussive subject in Korean as well. Last but not least, as pointed out before, Korean jussives are set apart from their Mongolian counterparts by the possibility to be spelled out in embedded position. I provide an overview of the relevant data and, moreover, highlight the agreement pattern overt jussive subjects obey in this position.

4.3.1 Syntactic embedding

Korean promissive, imperative, and exhortative clauses can be syntactically subordinated. The data referenced below is taken from Pak et al. (2008b: 170). Note that

[7]Dorothy Ahn (p.c.) points out that for her and, as she suspects, other speakers of younger generations voluntative embedding (as opposed to embedding of exhortatives) is ungrammatical. She also points out that voluntative embedding is reported in dictionaries and speculates that there might have been a historical shift in its availability.

the jussive subject in the below examples is silent.

(22) Ku salam-i inho-eykey [swuni-lul towacwu-**ma**]-ko malhayss-ta.
that person-NOM inho-DAT swuni-ACC help-PROM-C said-DECL
'He$_i$ said to Inho that he$_i$ promises to help Swuni.'

(23) Ku salam-i inho-eykey [swuni-lul towacwu-**la**]-ko malhayss-ta.
that person-NOM inho-DAT swuni-ACC help-IMP-C said-DECL
'He said to Inho$_i$ PRO$_i$ to help Swuni.'

(24) Ku salam-i inho-eykey [swuni-lul towacwu-**ca**]-ko malhayss-ta.
that person-NOM inho-DAT swuni-ACC help-EXH-C said-DECL
'He$_i$ said to Inho$_j$ let's$_{i+j}$ help Swuni.'

Diagnostics to ensure embedding

Recall that the superficial similarity of instances of direct and indirect speech in many languages requires us to apply certain tests to ensure that the structures we are dealing with are in fact instances of genuine embedding. To that effect, I resort to Park (2011:337ff.), who provides evidence that jussive embedding in the above examples and parallel structures is indeed genuine.

Park argues that the complementizer *-ko*, which also introduces the jussive clauses above, is specified for subordination: *-ko* generally introduces declarative and interrogative complements in Korean. *-ko* is traditionally distinguished from a second complementizer *-lako*, which has been argued to mark clauses as quotes. (I assume that the distinction made in the literature is correct and, in view of the limitations of my work, do not attempt to reproduce the arguments used to corroborate this distinction.) Note that the existence of a dedicated subordinating complementizer and its compatibility with jussive clauses is expedient in that it allows us to distinguish embedded jussives from jussives that are quotes in a straightforward manner. Recall that Mongolian does not have this convenient feature. Though jussives are usually introduced by *gej*, which I similarly located in C, *gej* has a much wider range of uses: Besides embedded CPs, *gej* may be used in the CP of quotes and can also appear in the CP of matrix clauses.

Jussive embedding is confirmed by another standard diagnostic: Embedded jussives that contain a *wh*-item can induce interrogative force on the root level. This is demonstrated by the examples below taken from Park (2011:342).[8]

[8]Park, furthermore, shows that the minimally different sentences involving the quotative complementizer *-lako* do not admit a matrix question reading.

(25) PROMISSIVE
John-un Mary-eykey [**nwukwu-eykey** cenhwaha-ma-ko] malhayss-nya?
John-TOP Mary-DAT who-DAT call-PROM-C said-QU
'Who did John$_i$ tell Mary that he$_i$ would call?'

(26) IMPERATIVE
John-un Mary-eykey [**nwukwu-eykey** cenhwaha-la-ko] malhayss-nya?
John-TOP Mary-DAT who-DAT call-IMP-C said-QU
'Who did John tell Mary to call?'

(27) EXHORTATIVE
John-un Mary-eykey [nwukwu-eykey cenhwaha-ca-ko] malhayss-nya?
John-TOP Mary-DAT who-DAT call-EXH-C said-QU
'Who did John$_i$ tell Mary$_j$ that they$_{i+j}$ should call?'

The range of jussive-embedding predicates in Korean

Korean jussives can occur under a variety of predicates: The set of reported jussive embedding predicates consists, to a large part, of speech predicates. Like in Mongolian, Korean 'say', *mal-ha-*, literally 'say-do' is unselective with respect to the type of jussive it embeds. The examples provided in the preceding sections, most of which involve *malha-* in the matrix clause, illustrate this fact.

Other predicates are found only with certain jussive forms. *yaksok-ha* 'promise-do' is reported in connection with promissives (28) as well as exhortatives (29). (All examples are taken from Madigan 2008:171pp., unless noted otherwise.)

(28) Eme-nim-kkeyse ai-eykey [kongwen-ey ka-ma-ko] **yaksok**-ha-si-yess-ta.
mother-HON-NOM child-DAT park-LOC go-PROM-C promise-do-HON-PST-DECL
'The mother$_i$ promised the child PRO$_{i(+)}$ to go to the park.'

(29) Hwun-i Inho-eykey [kongbwu-ha-ca-ko] **yaksok**-ha-yess-ta.
Hwun-NOM Inho-DAT study-do-EXH-C promise-do-PST-DECL
'Hwun$_i$ promised Inho$_j$ PRO$_{i+j}$ to study together.'

Further predicates compatible with exhortatives are *ceyan-ha-* 'propose-do' and *seltuk-ha* 'persuade-do'.

(30) Jwuhi-ka Inho-eykey [yenghwa-lul po-ca-ko] **ceyan**-ha-yess-ta.
Jwuhi-NOM Inho-DAT movie-ACC see-EXH-C propose-do-PST-DECL
'Jwuhi$_i$ proposed to Inho$_j$ PRO$_{i+j}$ to go watch a movie together.'

(31) Jwuhi-ka Inho-eykey [cip-ey ka-ca-ko] **seltuk**-ha-yess-ta.
Jwuhi-NOM Inho-DAT home-LOC go-EXH-C persuade-do-PST-DECL

'Jwuhi$_i$ persuaded Inho$_j$ PRO$_{i+j}$ to go home together.'

Predicates selecting for imperative complements are *myenglyeng-ha-* 'order-do', *yokwu-ha-* 'require-do', *chwungko-ha-* 'advise-do', and *seltuk-ha* 'persuade-do'.

(32) Chelswu-ka haksayng-eykey mence tuleka-la-ko **myenglyeng**-ha-yess-ta
Chelswu-NOM student-DAT first enter-IMP-C order-do-PST-DECL
'Chelswu ordered the student$_i$ PRO$_i$ to go in first.'

(33) Sensayng-nim-i haksayng-eykey [yaksok-ul cikhi-la-ko]
teacher-HON-NOM student-DAT appointment-ACC keep/adhere-IMP-C
yokwu-ha-si-ess-ta.
require-do-HON-PST-DECL
'The teacher required the students$_i$ PRO$_i$ to adhere to the appointment.'

(34) Inho-ka Hwun-eykey$_i$ [casin-i$_i$ mal-ul cosim-ha-la-ko]
Inho-NOM Hwun-DAT self-NOM words-ACC care-do-imp-C
chwungko-ha-yess-ta.
advise-do-PST-DECL
'Inho advised Hwun$_i$ PRO$_i$ to watch his words.' (Madigan 2008:248)

(35) Inho-ka Jwuhi-eykey [cip-ey ka-la-ko] **seltuk**-ha-yess-ta.
Inho-NOM Jwuhi-DAT home-LOC go-IMP-C persuade-do-PST-DECL
'Inho persuaded Jwuhi$_i$ PRO$_i$ to go home.' (Madigan 2008:65)

Moreover, different from Mongolian, Korean allows for imperatives embedded under the perception verb *hear* (36) as well as under passivized *order* (37). Crucially, the subject of the embedded imperative tracks the thematic role of its controller and not its syntactic function: Parallel to imperatives under speech predicates, the imperative subject under *hear* coincides with the reported addressee of the imperative. Note that in the case of *hear* and passivized *order*, the addressee role is associated with the *subject* of the higher clause, compared to the *object* in the case of speech predicates. I will show how my analysis deals with these cases in a later section.

(36) Inho-ka chayk-ul ilk-ula-ko tul-ess-ta.
Inho-NOM book-ACC read-IMP-C hear-PST-DECL
'Inho heard the order to read the book.' (Madigan 2008:173)

(37) Inho-ka cip-ey ka-la-ko myenglyeng-pat-ass-ta.
Inho-NOM home-LOC go-IMP-C order-PASS-PST-DECL
'Inho was ordered to go home.' (Madigan 2008:172)

As we can see, the range of predicates reported to embed jussives in Korean is wider than the set of corresponding predicates found in Mongolian. Though for neither language the list of predicates discussed in this work should be considered exhaustive, we may wonder if this difference is real and Korean is indeed more liberal with respect to jussive embedding. One property that points in this direction is the grammaticality of Korean jussives under *hear* and passivized *order* illustrated above. At the same time, the limited nature of the investigation into Mongolian compared to the wealth of data available on Korean renders the divergence in the number of embedding environments somewhat less surprising.

4.3.2 The dependent interpretation of jussive subjects

According to Madigan (2008), Pak et al. (2008b), the jussive subject is always coreferent with a specific DP argument in the matrix clause; i.e., Korean jussive subjects are argued to have a similar *dependent* interpretation as embedded jussive subjects in Mongolian. In particular, parallel to Mongolian, there is a correlation between the form of the jussive and the choice of DP ("controller") argument that determines the reference of the jussive subject: To wit, the subject of embedded promissives refers to the reported speaker of the promissive (which in the above examples, as in most cases, is the matrix subject), the subject of embedded imperatives corresponds to the reported addressee (the matrix object in the examples above), and the subject of embedded exhortatives is coreferent with the unit of reported speaker and reported addressee. From the point of view of Control constructions, embedded promissives could thus be taken to induce subject control, while embedded imperatives give rise to object control, and embedded exhortatives compare to instances of split control.

The stripped-down renderings (38) of the sentences in section 4.3.1 summarize the interpretations of jussive subjects in embedded position, phrased in terms of different Control relations. Note that embedded jussives lose the option of directly targeting actual discourse participants.

(38) a. *He*$_i$ said to Inho that *he*$_i$/*I$_{sp}$ help-**PROM** Swuni. ("subject control")
b. He said to *Inho*$_i$ that *he*$_i$/*you$_{adr}$ help-**IMP** Swuni. ("object control")
c. *He*$_i$ said to *Inho*$_j$ that *they*$_{i+j}$/*we$_{sp+adr}$ help-**EXH** Swuni. ("split control")

Interestingly, the situation reported by Pak et al. and described in this work conflicts with judgments provided by Dorothy Ahn (p.c.): Ahn allows for the subject of embedded imperatives to have a contextual referent not expressed by any of the matrix DPs. Crucially, my analysis only addresses the situation reported in Pak et

al.

No indexical shift in Korean

I assume that indexicals in Korean cannot be shifted, following Pak et al. (2008b), Portner et al. (2014), Dorothy Ahn (p.c.). The lack of indexical shift is illustrated by (39): The person indexicals in the embedded clause can only be interpreted strictly, as participants of the actual context.[9]

(39) Appa-ka Yumi-eykey nay/ney-ka ttokttokha-ta-ko hasiess-e.
Dad-NOM Yumi-DAT I/you-NOM bright-DECL-C said.HON-DECL
a. 'Dad told Yumi that I/you am/are bright.'
b. *'Dad$_i$ told Yumi$_j$ that he$_i$/she$_j$ is bright.'
(Portner et al. 2014:13)

Pak et al. (2008b) distinguish between covert and overt indexicals with regard to their shiftability: In their view, indexical shift is not principally unavailable in Korean but it is restricted to covert indexicals. I dismiss such a view of Korean on the same grounds that led to me to argue against such a view in the case of Mongolian indexicals, see section 2.2.1.

4.3.3 The *de se* requirement

Madigan (2008) illustrates that an exhortative report is only felicitous if the reported speaker of the exhortative has a *de se* (or, more accurately, *de nobis*) attitude towards the individuals targeted by the embedded exhortative, namely, the reported speaker him or herself and his/her addressee.

(40) Context: *A man with amnesia, Bill, is watching television with his friend Mary. They are presently watching a program where Bill and Mary are shown in a current and ongoing courtroom case. Furthermore, it seems as if both of them may go to jail. Suddenly, Bill has the thought that Mary and the man on TV, who he does not know is himself, should lie in order to not go to jail. So ...*

[9]However, there seems to be variation in Korean regarding the shiftability of indexicals. This is also pointed out by Portner et al. (2014): "Some researchers claim that they are shiftable across clause types (Kim 2008; Park [2014, reporting both person and adverbial indexicals to be shiftable], among others) while others contend that they are strict indexicals (Lee 2012; Lim and Lee 2012)."

#Pil-i meyli-eykey [wicung-ha-ca-ko] ceyan-ha-yess-ta.
Bill-NOM Mary-DAT perjure-do-EXH-C propose-do-PST-DECL

a. 'Bill proposed to Mary to perjure themselves.' (*de se*)
b. *intended*: 'Bill$_i$ proposed to Mary$_j$ that they$_{i+j}$ should perjure themselves.' (non-*de se*)

(Madigan 2008:155)

Kaufmann (2014) cites a similar interpretational restriction for embedded imperatives: The Korean imperative report below is infelicitous in the described scenario, where the reported speaker John fails to identify his addressee with *Mary*, the subject and target of his deontic statement.

(41) Context: *At a party, John is told that 'Mary' is being particularly obnoxious. He tells the person he is having a conversation with that 'Mary should leave'. But that person is none other than Mary herself.*
#John-ka Mary-eykey [ttena-ra]-ko malhayssta.
John-NOM Mary-DAT leave-IMP-ko say.PST

a. 'John told Mary to leave.'
b. *intended:* John told Mary$_i$ that she$_i$ should leave.

(Kaufmann 2014:20)

No explicit statement could be found in the literature regarding the interpretation of embedded promissives. However, absent evidence to the contrary, I assume that a corresponding requirement extends to promissive reports and that promissives necessarily involve a *de me* attitude on the part of the speaker.

4.3.4 Overt jussive subjects: distribution and restrictions

As foreshadowed in previous sections, especially 4.3.4, jussive subjects can be spelled out in embedded position by a range of personal pronouns. In this section, I outline the morphosyntactic properties of overt jussive subjects in more detail, in particular, the fact that their shape is determined by ϕ-feature agreement with their controller in the matrix clause. Recall that the possibility of overt subjects distinguishes Korean from Mongolian. It plays a central role in my analysis and will be employed as an argument that the jussive subject, which I view as a version of PRO, is interpreted and carries ϕ-features, countering the view that PRO is a semantically empty element.

The range of pronouns used to make embedded jussive subjects overt comprises in-

dexicals, as well as long-distance reflexives and the third-person pronoun *ku*. Pronominal subjects of jussives exhibit nominative case marking.

In (42)-(44), repeated from section 3.2, the embedded subject is pronounced by means of a person indexical. In all cases the pronoun shares the features of its matrix controller.

(42) Nay-ka inho-eykey [(nay-ka) swuni-lul towacwu-**ma**-ko] malhayss-ta.
I-NOM Inho-DAT I-NOM swuni-ACC help-PROM-C said-DECL
'I said to Inho that I promise to help Swuni.' (Pak et al. 2008b)

(43) Inho-ka ne-eykey [(ney-ka) chayk-**ula** ilk-ula-ko] hayss-ta.
Inho-NOM you-to you-NOM book-ACC read-IMP-C said-DECL
'Inho told you to read the book.' (Portner et al. 2014)

(44) John-un na-eykey [(wuli-ka) ttena-**ca**-ko] ceyanhayss-ta.
John-TOP I-DAT we-NOM leave-EXH-C proposed-DECL
'John$_i$ proposed to me$_j$ PRO$_{i+j}$ to leave.' (Park 2011)

(45) and (46) feature long-distance reflexives *caki* and *casin* as jussive subjects.[10]

(45) John-un$_i$ Mary-eykey [(caki-ka$_i$) tangcang nonmwun-ul ssu-ma-ko]
John-TOP Mary-DAT self-NOM right.away paper-ACC write-PROM-C
yaksokhay-ss-ta
promise-PST-DECL
'John promised Mary to write a paper right away.' (Park 2011:472)

(46) Inho-ka Hwun-eykey$_i$ [casin-i$_i$ mal-ul cosim-ha-la-ko]
Inho-NOM Hwun-DAT self-NOM words-ACC care-do-IMP-C
chwungko-ha-yess-ta.
advise-do-PST-DECL
'Inho advised Hwun to watch his words.' (Madigan 2008:248)

Moreover, the 3rd person pronoun *ku* is also eligible as a subject in embedded jussives.

(47) Tom-i Bill-eykey$_i$ [ku-ka$_i$ Mary-lul manna-la-ko] myenglyenghay-ss-ta.
Tom-NOM Bill-DAT he-NOM Mary-ACC meet-IMP-C order-PST-DECL
'Tom ordered Bill$_i$ PRO$_i$ to meet Mary.' (Park 2018:307)

The shape of overt subjects is strictly regulated by the person features of the controller in the higher clause: Overt subjects need to agree in person features with

[10]This is not an exhaustive list. For example, according to Park (2018), the local anaphor *cakicasin* can similarly take that position, though Park does not provide examples.

their controller (Park 2011:470pp.). The following examples (from Park 2011:474) illustrate this requirement.

(48) *John$_i$-un Mary-eykey [nay$_i$-ka ttena-ma-ko] yaksokhayssta.
John-TOP Mary-DAT I-NOM leave-PROM-C promised
a. (*hypothesized*) 'John promised Mary to leave.'
b. (*hypothesized*) 'John promised Mary that I$_{sp}$ would leave.'

(49) *John-un Mary$_i$-eykey [ney$_i$-ka ttena-la-ko] seltukhayssta.
John-TOP Mary-DAT you-NOM leave-IMP-C persuaded
a. (*hypothesized*) 'John persuaded Mary to leave.'
b. (*hypothesized*) 'John persuaded Mary that you$_{adr}$ would leave.'

(50) *John$_i$-un Mary$_j$-eykey [wuli$_{i+j}$-ka ttena-ca-ko] ceyanhayssta.
John-TOP Mary-DAT we-NOM leave-EXH-C proposed
a. (*hypothesized*) 'John$_i$ proposed to Mary$_j$ that they$_{i+j}$ would leave.'
b. (*hypothesized*) 'John persuaded Mary that we$_{sp+adr}$ would leave.'

The pattern exemplified by the sentences above falls out from a control analysis given the assumption of feature agreement between PRO and its controller. As for an alternative explanation, although the unavailability of the a.-interpretations above could also be derived from the lack of indexical shift in Korean, this fact is not sufficient to explain the general ungrammaticality of the above sentences, which extends to the hypothesized strict readings of the embedded indexical subject rendered in b.

Below I summarize the agreement pattern observed to hold between the embedded jussive subject and its matrix controller.

(51) ***nay*** 1SG 'I'
a. I$_i$/*you$_i$/*she$_i$ to B [$_{CP}$ **nay$_i$**-NOM PROM-C ...] said.
b. A to me$_i$/*you$_i$/*her$_i$ [$_{CP}$ **nay$_i$**-NOM IMP-C ...] said.

(52) ***ney*** 2SG 'you'
a. You$_i$/*I$_i$/*she$_i$ to B [$_{CP}$ **ney$_i$**-NOM PROM-C ...] said.
b. A to you$_i$/*me$_i$/*her$_i$ [$_{CP}$ **ney$_i$**-NOM IMP-C ...] said.

(53) ***wuli*** 1PL 'we'
a. I$_i$/*you$_i$/*she$_i$ to B$_j$ [$_{CP}$ **wuli$_{i+j}$**-NOM EXH-C ...] said.
b. A$_i$ to me$_j$/*you$_j$/*her$_j$ [$_{CP}$ **wuli$_{i+j}$**-NOM EXH-C ...] said.

(54) ***caki*** 3PS long-distance reflexive

a. He$_i$/*I$_i$/*you$_i$ to B [$_{CP}$ **caki$_i$**-NOM PROM-C- ...] said.

b. A to him$_i$/*me$_i$/*you$_i$ [$_{CP}$ **caki$_i$**-NOM IMP-C ...] said.

(55) ***ku*** 3PS 'he/she'

a. He$_i$/*I$_i$/*you$_i$ to B [$_{CP}$ **ku$_i$**-NOM PROM-C ...] said.

b. A to him$_i$/*me$_i$/*you$_i$ [$_{CP}$ **ku$_i$**-NOM IMP-C ...] said.

A note on *caki*

Variable judgments can be found regarding the distribution of *caki* as jussive subject and specifically, its compatibility with object control besides subject control. While the literature is unanimous regarding the availability of *caki* as jussive subject with a subject controller, not all speakers allow for *caki* under object control, which in our case mainly boils down to instances of embedded imperatives such as (56). The distribution sketched above assumes a more liberal dialect, represented by Park (2011), Madigan (2008:244), which also permits object-controlled *caki* as in (56). Crucially, for Park (2018), *caki* is limited to subject-control constructions, which would rule out structures like (56).[11]

(56) John-un Mary$_i$-eykey [caki$_i$-ka honca nonmwun-ul ssu-la-ko]
John-TOP Mary-DAT self-NOM alone paper-ACC write-IMP-C
seltukhay-ss-ta.
persuade-PST-DECL.
'John persuaded Mary$_i$ PRO$_i$ to write a paper alone.' (Park 2011:472)

I am agnostic as to whether in those dialects where *caki* is restricted to subject-control, *caki* also rejects split control (i.e., controllers that include the object). The answer to this question should predict its (un)availability as a subject of embedded EXH clauses.

[11] Madigan (2008:244) notes that "by adding the adverb *cikcep* 'directly' to the matrix clause, even those few consultants who were strongly biased towards *caki* being exclusively a subject-oriented reflexive accepted that *caki* must take an object antecedent" in examples paralleling (56).

Chapter 5

An analysis of embedded jussives in Mongolian and Korean

5.1 Desiderata and proposed responses

Let me start this chapter by outlining the objectives of my analysis of jussive embedding in Mongolian and Korean.

A pressing question that has received much attention in the literature on imperative embedding concerns the derivation of the illocutionary force associated with imperatives and forms expressing similar non-assertive speech acts. Given the predominance of imperatives in root contexts and the long-standing belief that imperatives are limited to those contexts for principled reasons, many approaches to the semantics and pragmatics of imperatives have been developed with root imperatives in mind. The occurrence of imperatives in embedded position creates a certain kind of benchmark for analyses of imperatives: Is a given analysis amenable to embedded uses of imperatives, or can we modify the analysis in a way that would make it compatible?

I adopt the view that jussive force is contributed by a silent modal, thereby following the view defended, most prominently, in Kaufmann (2012, a.o.). Moreover, addressing the specific cases of Mongolian and Korean, I assume the same silent modal, which I call JUSSIVE, to be present in all subtypes of jussive clauses discussed in this work.

The focus of my analysis, however, is on the nature of the subject in jussive clauses. As foreshadowed in section 3, I argue for an analysis of the subject of jussives as a version of PRO. The type of PRO analysis pursued in this work – an analysis of PRO as a semantically active element – is influenced by properties, which, in their

plurality, are most apparent in Korean jussives, but are argued also to underlie the subject of Mongolian jussives. Let me recount these properties:

(i) In both Mongolian and Korean, the jussive subject is coreferent with a DP argument in the higher clause. I suggested to think of embedded jussives as instances of Obligatory Control, with the jussive subject as PRO and the higher DP argument as the controller.

(ii) The adoption of a PRO analysis is motivated by another property shared with standard cases of Obligatory Control: We observed that jussive reports in both Mongolian and Korean require that the reported speaker has a *de se* attitude towards the jussive subject.

(iii) The subject of Korean embedded jussives can be spelled out, in which case it shows ϕ-feature agreement with the coreferent DP (the controller DP) in the higher clause.

I opt for an analysis that assumes PRO to comprise an individual variable and a variable over concept generators. Obligatory Control (property (i)) results from binding of the individual variable by the controller DP. The *de se* attitude (property (ii) follows from a presupposition on the concept generator variable or, more accurately, the acquaintance relation it is mapped to. Finally, the varying shape of overt jussive subjects in Korean is simply a reflex of the subject's ϕ-features, and feature agreement with the controller DP a repercussion of binding.

My approach to PRO in jussives builds on the treatment of *de re* DPs in attitude contexts developed in Percus & Sauerland (2003a) and taken up in Santorio (2014), who applies a version of this idea to the analysis of PRO. The specifics of a corresponding analyses, including the notion of concept generators, will be discussed in the course of my analysis.

As mentioned above, I take jussive clauses to be uniform in their modality. What do the semantic differences between the different jussive forms, then, consist in? And how can we derive the distinct morphology of voluntatives and imperatives in Mongolian, and promissives, imperatives, and exhortatives in Korean? With regard to the first question, recall that different jussive forms can be characterized as involving different types of control. I claim that the presence of different controllers fully derives the semantic differences between the various jussive forms.

Technically, I locate the variation within PRO: Different jussives involve different flavors of PRO, expressed by way of different features on PRO. Each flavor of PRO imposes a slightly different presupposition on PRO or, more accurately, its concept generator variable.

Concerning the morphological variation across jussive clauses, I propose that the choice of verbal suffix/particle reflects agreement of T with PRO's feature. Impor-

tantly, however, no semantic contribution is made by jussive morphology itself in my proposal. To sum up, the the only semantic difference between jussive forms is induced by the different features on PRO, which correlate with different presuppositions.

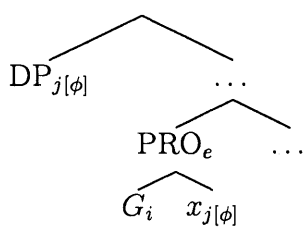
A complete analysis entails providing a semantics for the predicate embedding the jussive clause. I adopt an event semantics for speech predicates such as *say* (following Elliott 2016), which is modeled on the treatment of attitude predicates as sets of attitude events developed in Kratzer (2006), Moulton (2009). Crucially, in corresponding approaches, the attitude is introduced by the complement as the content of the attitude or speech event. As we will see, a crucial advantage of such a semantics is that it allows for a unified semantics of *say* and similar predicates that have both declarative- and jussive-embedding uses.

Last but not least, it is in my interest to develop an analysis that can be transferred to uses of jussives in root contexts. To that end, I propose that the actual speech context is syntactically present as an event pronoun e^* at the root of a sentence (cf. Speas & Tenny 2003; Hacquard 2006, a.o.). While the open event argument of jussive clauses is existentially closed if the jussive is embedded, it is saturated by e^* if the jussive occurs in a root environment.

5.2 The jussive subject as complex PRO

Recall the structure I assign to PRO in embedded jussives.

(1)



In this section it will be shown how a corresponding structure for PRO plays a central role in accounting for the properties of embedded jussive subjects in Korean and Mongolian, which are as follows: (i) Jussive PRO is obligatorily controlled by a DP argument in the higher clause, (ii) the reported speaker has a *de se* attitude towards the jussive subject, (iii) overt subjects of embedded jussives in Korean agree in ϕ-features with their controller.

My analysis could be viewed as the result of combining three assumptions found in the literature about *de re* and *de se* attitudes: For one, I adopt the analysis of DPs and their *de re* interpretation in attitude contexts developed by Percus & Sauerland.

At the same time, I follow the view that overt person pronouns read *de se* have the same semantics and syntax as PRO (Heim 2002). Thirdly, I take the stance that attitude reports involving *de re* attitudes and *de se* attitude reports are construed in the same way, i.e., have a uniform LF.

In combination, these assumptions lead to the view of jussive PRO defended in this work: to wit, the view that jussive PRO is semantically and structurally complex, analogous to DPs in attitude contexts in Percus & Sauerland (2003a).

My view closely matches Landau's (2018) semantics for Obligatory Control and is a version of Santorio's (2014) analysis of PRO.[1] Anand (2006), to my knowledge, is the first to point out that Percus & Sauerland's LF for *de re* reports could be adopted to describe *de se* attitudes as well, including *de se* attitudes induced by "obligatory *de se* expressions" such as PRO.

The unified account of *de re* and *de se* adopted in this work is characterized by involving existential quantification over concept generators. Moreover, it is known as *in-situ* account of *de re*, to distinguish it from accounts of *de re* involving so-called res-*movement* of the *de re* DP.

5.2.1 Percus & Sauerland (2003a): *de re* and acquaintance relations via concept generators

Percus & Sauerland (2003a, henceforth P&S, cf. also Percus & Sauerland 2003b) develop a novel, *in-situ* approach to the well-known problem of *de re* readings in attitude contexts. *de re* readings are illustrated by (2): The sentence in (2) has a true reading in the described scenario if the DP *Peter* is read *de re*.

(2) Context: *Mary's orchestra is conducting the final round of auditions for a vacancy. Mary, who is part of the jury, knows that her acquaintance Peter is one of the two final candidates. Both candidates play behind a curtain. One of the two candidates plays the Brahms violin concerto. Mary thinks about this candidate: "This candidate plays much better than Peter and will be selected for the position." She does not know that the person playing is in fact Peter.*

Mary believes that Peter will get the job.

Note that *de re* readings can be derived in various ways. What is the motivation for Percus & Sauerland's (2003) view and the introduction of concept generators?

[1]Santorio (2014) derives *de re/de se* attitudes using multiple assignments, while my analysis follows the linguistic tradition of assuming a tighter form-meaning correlation and assigns internal structure to PRO, parallel to Landau 2018).

Charlow & Sharvit (2014) argue for P&S's theory by pointing at a certain type of attitude report that involves a *de re* anaphor bound by a quantifier. Such reports have, among their readings, a so-called *multiguise* reading. Charlow & Sharvit's (2014) claim is that, among approaches to *de re*, only P&S account can successfully derive this reading and at the same time avoid generating unattested interpretations. Before I introduce P&S's proposal, I shall lay out Charlow & Sharvit (2014) argument.

Motivating a concept generator approach in light of alternative approaches to *de re*: Charlow & Sharvit (2014)

Charlow & Sharvit (2014) make a case for Percus & Sauerland's (2003) theory on the basis of a specific type of attitude reports where the clausal complement of the attitude verb contains a quantifier and a pronoun bound by the quantifier, cf. (3). Their argument rests on an observation and a theoretical claim.

(3) John believes that every female student$_i$ likes her$_i$ mother.

First, the observation: The authors notice that examples like (3) have a "multiguise" reading where the quantifier *every female student* and *her* are both interpreted *de re*, buth with different acquaintance relations. For example, (3) is true in the following scenario: Suppose John is presented with two pictures each of three female students, whose real names are Alice, Betty, and Cora. One set of photos shows them dressed up as artists, while on the other set they are depicted wearing sports gear. John says, "(pointing at the picture of Alice as a painter) this person likes (pointing at the picture of Alice in a ski suit) that person's mother". John further says that "this third person (pointing at the picture of Betty as a violinist) likes that person's (pointing at Betty in a wetsuit) mother", and, finally, "this person (Cora as a circus artis) likes that person's (Cora in gym clothes) mother". Note that for no pair of photos $\langle \text{Alice}_1, \text{Alice}_2 \rangle$, $\langle \text{Betty}_1, \text{Betty}_2 \rangle$, $\langle \text{Cora}_1, \text{Cora}_2 \rangle$, John realizes that they depict the same person; i.e., John ascribes to each woman that she likes her own mother rather coincidentally.

Charlow & Sharvit (2014) claim that none of the considered alternative approaches to *de re* readings can derive this reading.

To begin with, an attempt to utilize Quantifier Raising[2] for this purpose fails. Under QR, *de re* readings arise when a noun phrase is interpreted outside the scope of the attitude operator, which can be achieved either through movement of the *res* NP or, given the assumption of covert world variables, *in situ* by way of co-indexing

[2]The authors refer to approaches where the *de re*/*de dicto* contrast is a result of the scopal relation between an NP and an attitude verb, as *Russellian approaches*, citing Russell (1905).

the relevant NP with the matrix world w_0. The following LF, in which *every female student* is interpreted in the actual world w^*, is an attempt at deriving the relevant interpretation.

(4) John believes-w^* [$\lambda 1$ [every female student-w^* [λ_2 [t_2 likes-w_1 her$_2$ mother-w_1]]]] = 1 iff
$\forall w' \in \text{DOX}_{w^*,John}$: [$\forall x$: x is a female student in $w^* \Rightarrow x$ likes in w' x's mother in w']

Crucially, the derived meaning only attributes beliefs of the form *x likes x's mother* to John. Therefore, it is false of the described scenario, where John, pointing at the two photos $\langle \text{Alice}_1, \text{Alice}_2 \rangle$ of Alice (a student) says, "This person (I think her name is Ruth), likes that person's (who I think is Sue) mother".

In fact, an alternative way of deriving *de re* is also needed in the face of previously discussed constructions, where a locally bound anaphor in a *de se* attitude report is interpreted *de re*; cf. our earlier example repeated below: If all we had available were scopal interactions, the only avenue for deriving the *de re* reading of *herself* would be through binding by the matrix subject *Palin*; however, such binding leads to the expectation of ungrammatical *her* in place of grammatical *herself*.

(5) *Context: After reading an impressive article by a politician, Palin says to Bill: "I promise to vote for this politician." What she doesn't notice is that she herself authored the article.*
Palin promised Bill [PRO$_i$ to vote for herself$_i$/her$_{*i}$]

A more serious contender for the derivation of the considered multiguise reading is an account of *de re* DPs in belief ascriptions developed by Cresswell & Von Stechow (1982), following Kaplan (1968) and Lewis (1979) (see also Heim (1994)), which assumes a "relational" semantics for attitude verbs such as *believe* in (2) and (3), expressed in terms of a predicate *believe*^{re}: As shown in 2, *believe*^{re} selects the *res* DP as its first argument, and a property-denoting expression of type $\langle e, st \rangle$ as its second argument. It asserts that an acquaintance relation holds uniquely between the believer and the *res* in the actual world, and between the believer and some individual in the believer's doxastic alternatives. Syntactically, this can be implemented via obligatory sideways movement of the *res*-DP into an argument position of *believe*, as worked out in Heim (1994) for *de re* readings of tense pronouns.

(6) For any x, z in D_e, any w in D_s, any P in $D_{e,st}$, any assignment g, $[\![\text{believe}^{re}]\!]^g(w)(z)(P)(x) = 1$ iff there's a suitable acquaintance function F such that

a. $F(w) = z$, and
b. $\text{DOX}_{x,w} \subseteq \{w' \in D : P(F(w'))(w) = 1\}$.

(Charlow & Sharvit 2014:12)

Using *believe*^{re}, Charlow & Sharvit (2014) experiment with several possible LFs in an aim to derive the multiguise reading — none of which seems satisfying.

In the LF (7), the two *res*, *her* and *female student*, are not co-indexed, which allows them to be associated with different acquaintance functions, as desired. However, by moving *her* outside the scope of *every*, we also give up on the bound reading of *her*, i.e., *her* can only be interpreted referentially.[3]

(7) John [[believes^{re}-w* her$_3$] female-student-w*] [λ_3 λ_4 λ_1 [[every T_4] [λ_2 [t_2 likes-w_1 t_3's mother-w_1]]]]

A different LF (8-a) has the QP scope outside *believe*^{re} and bind both a trace-*res* and a pronoun-*res*, which are co-indexed with each other. This structure would capture the multiguise reading (provided a corresponding extension of *believe*^{re} to allow for *res* that are quantified over), as shown in (8-a).

(8) a. [every female-student-w*] [λ_2 [John [[believes^{re}-w* t_2] her$_2$] [λ_4 λ_3 λ_1 [t_4 likes-w_1 t_3's mother-w_1]]]]
b. $\forall x$ s.t. x is a female students in w*:
(i) $\exists F_1, F_2$ s.t. $F_1(w^*) = F_2(w^*) = x$ &
(ii) $\forall w' \in \text{DOX}_{w^*,John}$: $F_1(w')$ likes the mother of $F_2(w')$ in w'

However, as Charlow & Sharvit (2014) note, allowing for such configurations would also predict the generation of unattested readings, in particular, in the presence of downward-entailing quantifiers: A similar LF (10-a) for the sentence in (9-a) would yield (9-b) as its denotation, formalized in (10-b). However, this reading is not available. It is unclear how we could permit (8-a) yet block parallel (10-a) without stipulating differences in QR between *every* and *no*-QPs.

(9) a. John is certain that no female student passed the exam.
b. *Unattested reading:* No actual female student x is such that John says to himself, with certainty, "x passed the exam".

[3]This LF requires the assumption that *believe*^{re} is type-flexible and can take more than one 'res'-argument – an assumption that is needed independently to account for the possibility of multiple *de re* expressions such as *John believes that Mary introduced Bill to Sue* in a scenario where John, witnessing the introduction but failing to correctly identify the involved individuals, thinks "Alice introduced Carl to Tess".

(10) a. [no female-student-w^*] [λ_2 [John [believes^{re}-w^* t_2] [λ_4 λ_1 [t_4 passed-w_1 the exam]]]]

b. $\neg\exists x$: [x is a female student in w^* &

(i) $\exists F$ s.t. $F(w^*) = x$ &

(ii) $\forall w' \in \text{DOX}_{w^*,John}$: $F(w')$ passed the exam in w']

Another attempt to deploy relational *believe*^{re} to account for the multiguise reading involves a view of $[\![her]\!]$ as a function $\langle e, e\rangle$, specifically, the identity function $\lambda x.x$. Acquaintance functions F would optionally be of type $\langle s, \langle ee\rangle\rangle$ rather than $\langle s, e\rangle$; Charlow & Sharvit (2014) hypothesize that, in the relevant multiguise scenario, further specified in (11-a) below, John "mistakes" the identity function for some other function such that, in his mind, John is pointing at two different individuals, for every pair of the form $\langle x, x\rangle$ he is actually pointing at. I.e., F would be as in (11-b).

(11) a. The set of actual female students is $\langle a, b, c\rangle$ and John is looking at the pairs $\langle a, a\rangle$, $\langle b, b\rangle$, $\langle c, c\rangle$ (more accurately, pairs of the corresponding pictures), but he thinks the pairs are $\langle a, b\rangle$, $\langle b, c\rangle$, $\langle c, a\rangle$ (and he doesn't know that a, b, and c are students).

b. $F = \lambda w.$ the $\langle e, e\rangle$-function indirectly presented to John in w via the pairs he's looking at in w

Charlow & Sharvit (2014) object that on such a theory, first, we would need to explain what it means to be acquainted with functions. Moreover, even if this complaint can be overcome, the theory also make incorrect predictions such as the following:

> [The multiguise sentence (3) should be] felicitous in a situation where John sees every actual female student once, identifies each student correctly and says "for each x such that x is one of these individuals, x likes the mother of x's aunt". [...] This can happen, for example, if John confuses the identity function with the aunt-of function for example, when John confuses the identity function with the aunt-of function (even if he doesn't have any confusion regarding the identity of the individuals themselves). (Charlow & Sharvit 2014: 17)

Charlow & Sharvit's (2014) conclusion is that a theory along the lines of P&S is needed in order to account for the attested range of *de re* scenarios.

In what follows, I outline P&S's (2003a) proposal for the semantics of *de re* reports. My interest lies in capturing the observed features of embedded jussives, in particular, the peculiar properties of the jussive PRO subject. Therefore after

introducing P&S proposal, I will proceed by first discussing an application of the theory to PRO in regular Control constructions before returning to the problem of multiguise readings in section (36).

Percus & Sauerland (2003a): The proposal

P&S suggest that e-type expressions in attitude contexts are accompanied by a variable G ranging over concept generators as their sister. Concept generators are covert variables G of type $\langle e, ce\rangle$, defined in (13), which map individuals to acquaintance relations such as (12). (c is the type of *centered worlds*, which are tuples $\langle w, x, (y, \ldots)\rangle$ of a world and its one or multiple individual center(s).)[4,5]

(12) Possible acquaintance relations

a. $\lambda\langle w, x\rangle$. the y who x talks to in w

b. $\lambda\langle w, x\rangle$. the y whom x hears play Brahms at the audition in w

c. $\lambda\langle w, x\rangle .x$ (= *self*-relation)

(13) G of type $\langle e, ce\rangle$ is an *acquaintance-based concept-generator for individual* x in w iff

a. $\mathrm{Dom}(G) = \{y : x$ is acquainted with y in $w\}$

b. For all y in $Dom(G)$, if $G(y) = R$, then:

(i) R is an acquaintance relation

(ii) x bears R uniquely to y in w (i.e., $G(y)(\langle w, x\rangle) = y$)

---

[4]Specifically, D_c is the union of the domains of singly and multiply-centered worlds, i.e., $D_c = D_{\langle s,e_1\rangle} \cup D_{\langle s,e_1,e_2\rangle} \ldots \cup D_{\langle s,e_1,\ldots,e_n\rangle}$. I sometimes use the more specific notation $\langle s, e(e, \ldots)\rangle$ to render the type of centered worlds.

[5]Note that P&S actually assign the simpler type $\langle e, se\rangle$ to G. For reasons of simplicity and consistency with my analysis to come, I use the adjusted definition of concept generators from Santorio (2014) right away. P&S (2003a:10) original definition is as follows.

(i) Definition: G is a *concept-generator* for individual x in w iff

a. G is a function from individuals to individual concepts

b. *Dom(G)* $= \{z$: x is acquainted with z in $w\}$

(ii) Definition: G is an *acquaintance-based concept-generator* for individual x in w iff

a. G is a concept-generator for x in w

b. the concepts G yields are "acquaintance-based" in the sense that, for all z in *Dom(G)*,

1) there is some acquaintance relation R such that x bears R uniquely to z in w

2) for all $\langle y, w'\rangle \in \mathrm{DOX}_{x,w}$, y bears relation R uniquely to $G(z)(w')$ in w'.

(iii) for all centered worlds $\langle w', x' \rangle$ in x's doxastic set at w, the center x' bears R uniquely to $G(y)(\langle w', x' \rangle)$ in w'.

(Santorio 2014, following P&S 2003a)

The *de re* reading of *Peter* in (2) would be rendered by means of the following LF in P&S's account (modulo world variables and their binders): Peter is accompanied by a concept generator variable G_5, which is bound by a λ abstractor inserted at the edge of clause.

(14) Mary believes [$_{\text{CP}}$ that λG_5 [$_{\text{TP}}$ [G_5 Peter] [$_{\text{T'}}$ will get the job]]]

P&S semantics for *de re* attitudes goes along with a semantics for attitude predicates as existential quantifiers over concept generators. P&S's entry for the doxastic attitude verb *believe* reads as follows.

(15) $[\![\text{believe}]\!] = \lambda P_{\langle\langle e,se\rangle,\langle e,st\rangle\rangle}.\lambda x.\lambda w.$ there is some acquaintance-based concept-generator G for x in w s.t. $\forall \langle y, w' \rangle$ in $DOX_{x,w} : P(G)(y)(w') = 1$. (P&S 2003a:13)

The LF (14) is true in the scenario (2) as we can come up with a concept generator that satisfies the existential statement made by (15) in the given derivation: This is the concept generator in (16), call it G_2, that maps Peter to the acquaintance relation holding between centered worlds $\langle w, x \rangle$ and the individual y whom x hears play Brahms in w.

(16) Relevant concept generator for (2):
$[\![G_2]\!]^{c,g}$ s.t. $g(2)(\text{Peter}) = \lambda \langle w, x \rangle.$ the y whom x (= the center of w) hears y play Brahms at the audition in w

Let me return to *de se* reports and the relationship between *de re* and *de se* in P&S (2003a). Crucially, P&S assume that the derivation of *de se* proceeds via a different mechanism and involves an LF that is distinct from the LF of a homophonous *de re* report.

To give a concrete example, consider (17): Mary has a *de se* attitude towards the subject of her beliefs in (17-a), but lacks such an attitude in (17-b). Both scenarios can be described by (17).

(17) Mary$_2$ believes she$_2$ will win.

a. Mary believes: "I will win the competition." (*de se*)

b. Mary, not realizing she is listening to her own recording, believes: "This violinist plays better than me and will win the competition." (*de re*)

Under the assumption that pronouns have a separate *de se* reading (cf. Heim (2002) for arguments to that effect), this means that (17) is ambiguous between a *de se* and a *de re* report. In a P&S style analysis, the two readings would be associated with two different structures: Though the complement CP in both cases involves an abstractor over concept generators, in the *de se* LF, binding by λG_3 is vacuous, and λG_3 is present purely for type reasons – recall that *believe* (15) takes a complement of type $P_{\langle\langle e,se\rangle,\langle e,st\rangle\rangle}$. *she* raises and is interpreted outside the attitude context.[6]

In the *de re* LF, on the other hand, *she* remains in the scope of *believe*, and λG_3 binds a variable G_3 accompanying *she*.

(18) a. Mary believes [λG_3 she$_2$ [λw_4 w_4 t_2 will win]] (*de se*)
b. Mary believes [λG_3 [λw_4 w_4 [[G_3 she] w_4] will win]]] (*de re*)

Different from P&S, I aim for a unified derivation of *de se* and *de re* attitudes. Specifically, while in P&S, concept generators make a meaningful contribution solely in *de re* reports, I extend the use of concept generators and take *de se* reports to be derived in a similar fashion. Specifically, I claim that *de se* pronouns carry a presupposition which forces the concept generator to map its sister variable to the *self*-acquaintance relation.[7] The relevance of this unification in the context of my work consists in the fact that the proposal will also be applied to PRO, including jussive PRO, parallel to overt *de se* DPs. In this respect I follow proposals made in Santorio (2014) and Landau (2018). The following section outlines my approach.

5.2.2 *de se* as a special case of *de re*: a presuppositional analysis of PRO

I suggest that the *de se* reading of DPs in attitude contexts as well as the obligatory *de se* reading of PRO can be derived via a similar mechanism and using an LF that is parallel to the LF assumed for *de re* constructions such as (18-b) in P&S. In particular, the obligatoriness of *de se* on PRO will be derived by way of a presupposition on the concept generator variable accompanying PRO. Recall that, ultimately, our

[6] In a semantics using a world parameter rather than overt world pronouns this would be rendered by way of *she* raising across the attitude predicate.

[7] P&S's exact motivation for choosing a movement analysis of *de se* pronouns as opposed to analyzing them *in-situ* and using presuppositions to constrain their interpretation is unclear to me. It appears that P&S may try to preserve a one-to-one correlation between LF structures and available interpretations. However, as Landau (2018) points out, the assumption of lexical ambiguity (for example, by allowing for two versions of pronouns such as *she*, one of which carries a feature that imposes the *self*-presupposition) is just as valid a means to derive interpretational ambiguity, as deploying syntactic ambiguity.

goal is to account for the *de se* property of jussive subjects, which was argued to be best analyzed as a version of PRO.

It is well-known that standard PRO forces a *de se* reading. Let me repeat example (1) from chapter 3 to illustrate this property.

(19) Mary wants PRO to win.

a. True if Mary thinks "Hopefully I will win the competition".

b. False if Mary, not realizing she is listening to her own recording, thinks "This violinist plays better than me. I think she should win the competition."

We further observed that the *de se* condition also characterizes jussive subjects in Mongolian and Korean, as exemplified by the Mongolian voluntative report below (repeating (29) from chapter 2).

(20) #Bat suvilagch-d [ambr-iy gej] khel-sen.
Bat nurse-DAT rest-VOL that say-PST

a. True if Bat said to the nurse "Let me rest"

b. False if Bat said to the nurse, pointing at a patent chart which he fails to recognize as his own, " This person should rest".

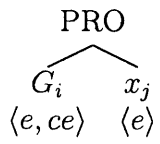
As noted above, Anand (2006) points out that the *de se* property of PRO could be captured by way of a presupposition on a concept generator variable accompanying PRO (though he does not adopt this analysis). I.e., he suggests the entry for PRO in (21), whereby "PRO is treated as a variable which introduces the presupposition that its concept generator sister sends it to f_{self}". (Note that f_{self} is equivalent to the function encoded by AUTH, which is such that AUTH(i) = *author*, with i a tuple $\langle author, addressee, time, world \rangle$.)

(21) $[\![\text{PRO}_i]\!]^g_{\langle\langle e,se\rangle,e\rangle} = \lambda G : G(g(i)) = \text{AUTH}.\, g(i)$ (Anand 2006:29)

I take up Anand's idea for the semantics of PRO and generate PRO's *de se* reading by way of a presupposition on the concept generator variable inside PRO (see Santorio (2014)[8], Landau (2018) for a similar analysis). I associate PRO with the structure (22), and the lexical entry in (23). Note that different from Anand (2006), I take PRO to be a complex constituent dominating a concept generator variable as well as an individual variable, rather than the individual variable itself.

[8]As mentioned before, in Santorio's (2014) system concept generators are values of a dedicated index on DPs and PRO rather than overt variables.

(22)



where G_i an acquaintance-based concept generator as defined in (13) and x_j an individual variable.

By (23), PRO presupposes that for any daughters G_i and x_j of PRO, G_i applied to x_j maps to f_{self} defined in (24), which is the relation holding between centered worlds and their individual centers. (Note that we could also think of f_{self} as the *de me* instantiation of *de se*.)

(23) If $g(i)(g(j)) = f_{self}$, $[\![[_{\text{PRO}}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$,
else undefined.

(24) $f_{self} = \lambda \langle w, x \rangle .x$[9]

With these assumptions in place, we can derive the semantics of subject-controlled PRO, where the relevant *de se* relation is the *de me* relation f_{self} holding between a centered world and its individual center.

Example derivation

Let me start with a remark on the compositional mechanism I assume. Note that, instead of a world parameter, I assume expressions to be evaluated against a parameter c, which is a pair $\langle w, x \rangle$ of a world w and its individual center x (i.e., a centered world c).[10]

(25) For any semantic expression,

a. $[\![\alpha]\!]^{c,g}$ is the semantic value of α at c. (EXTENSION)

b. $\lambda c.\ [\![\alpha]\!]^{c,g}$ (abbreviated: $[\![\alpha]\!]^{g}_{¢}$) is the function that assigns to any centered world c the extension of α in c. (INTENSION)

I assume concept generator variables G to be of type $\langle e, ce \rangle$, in line with the type canonically assigned to them. The definition of concept generators is repeated in (26).

[9] Equivalently, using the abbreviated type c for centered worlds, $f_{self} = \lambda c.\ \text{center}(c)$.

[10] c can easily be extended to include two or more individuals, i.e., it could be used as a *multiply*-centered world. This possibility will be exploited to account for *de te* readings.

(26) G of type $\langle e, ce\rangle$ is an *acquaintance-based concept-generator for individual* x in w iff

a. $\text{Dom}(G) = \{y : x \text{ is acquainted with } y \text{ in } w\}$

b. For all y in $Dom(G)$, if $G(y) = R$, then:

(i) R is an acquaintance relation

(ii) x bears R uniquely to y in w (i.e., $G(y)(\langle w, x\rangle) = y$)

(iii) for all centered worlds $\langle w', x'\rangle$ in x's doxastic set at w, the center x' bears R uniquely to $G(y)(\langle w', x'\rangle)$ in w'.

However, this type creates a certain technical problem: Since the centered-world argument c is not the innermost argument, c cannot a priori be targeted and shifted under Intensional Functional Application. As a fix for this issue, I posit a dedicated interpretation rule for concept generator variables G (27) that effectively switches the order of arguments by way of abstracting over G's e-type argument. The merits of this rule will become apparent in the derivations to follow.[11]

(27) Interpretation rule for concept generators $G_{\langle e,ce\rangle}$ (short: **ICG**)

a. $[\![G_i]\!]^{c,g} = \lambda x.g(i)(x)(c)$ (EXTENSION)

b. $[\![G_i]\!]^{g}_{\mathfrak{c}} = \lambda c.\lambda x.g(i)(x)(c)$ (INTENSION)

In what follows I provide a sample derivation of the Obligatory Control construction involving *want* in (29).[12] The semantics assumed for *want* builds upon the semantics for attitude predicates in P&S (2003a) such as (15). As a technical innovation, I suggest to replace the abstractor λG_i over the concept generator variable G_i by a binder index on the embedding verb itself, as shown in *want*^{i}. The interpretation of *want*^{i} and its propositional complement containing G_i is regulated by a syncategorematic entry $[\![\text{want}^i\ \phi]\!]$ in (28).[13]

[11]Thanks to Irene Heim (p.c.) for help with this issue.

[12]I omit the CP layer of the PRO clause as it is not crucial for our current purposes.

[13]The motive behind this adjustment is a technical complication that would otherwise be raised by the type of *want* in relation to its complement: An entry (i) of type $\langle\langle ece, ct\rangle, et\rangle$ would be closer to P&S's denotation; however, composition of *want* in (i) with the embedded clause, whose extension would be of type $\langle ece, t\rangle$ due to lambda abstraction over G would not be within the domain of Intensional Functional Application. Replacing lambda abstraction over G with a binder index for G directly on the embedding verb resolves this problem. Thanks to Irene Heim (p.c.) for help with this solution.

(i) $[\![\text{want}]\!]^{c,g} = \lambda P_{\langle\langle ece,ct\rangle,\langle e,ct\rangle\rangle}.\lambda x.\exists G$ for x in world(c) s.t. $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c) $\Rightarrow P(G)(\langle w', x'\rangle)$]

(ii) $[_{\text{TP}}$ Mary$_3$ $[_{\text{T'}}$ wants$_{\langle\langle ece,ct\rangle,\langle e,ct\rangle\rangle}$ $[_{\langle ece,t\rangle}$ λG_2 $[_{\text{TP}_t}$ $[_{\text{PRO}_e}$ $G_{2\langle ece\rangle}$ $x_{3\langle e\rangle}$] to win the compe-

(28) $[\![\text{want}^i\ \phi]\!]^{c,g} = \lambda x.\exists G$ s.t.

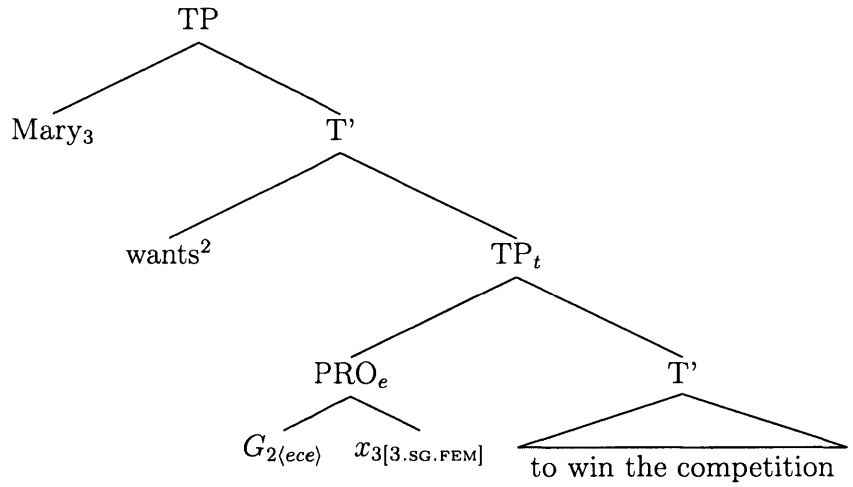
(i) G is an acquaintance-based concept-generator for x in world(c) &

(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &

(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c)

$\Rightarrow [\![\phi]\!]_{¢}^{g^{i\to G}}(\langle w', x'\rangle)]$

(29)



(30) a. If $g(2)(g(3)) = f_{self}$, $[\![[_{\text{PRO}}\ G_2\ x_3]]\!]^{c,g} = g(2)(g(3))(c)$, (by ICG)
else undefined.

b. $f_{self} = \lambda\langle w, x\rangle.x$

(31) $[\![\text{Mary}_3\ \text{wants}^2\ [_{\text{PRO}}\ G_2\ x_3]\ \text{to win the competition}]\!]^{c,g}$

$= \lambda x.\exists G$ s.t. (by rule (28))

(i) G is an acquaintance-based concept-generator for x in world(c) &

(ii) $[\![[_{\text{PRO}}\ G_2\ x_3]\ \text{to win the competition}]\!]^{g^{2\to G}}$ is defined &

(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c)

$\Rightarrow [\![[_{\text{PRO}}\ G_2\ x_3]\ \text{to win the competition}]\!]_{¢}^{g^{2\to G, 3\to \text{Mary}}}(\langle w', x'\rangle)]$

(Mary)

(32) $[\![(29)]\!]^{c,g} = 1$ iff $\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for Mary in world(c) &

(ii) $G(\text{Mary}) = f_{self}$ & (by (30-a))

(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with Mary's desires in w

$\Rightarrow G(\text{Mary})(\langle w', x'\rangle)$ wins the competition in w']

---

tition]]]]

What is the significance of the existence statement about concept generators in a PRO construction, where PRO presupposes a specific value for the concept generator variable applied to its sister – namely, that it map to the f_{self}-function defined in (30-b)?

Note that by my interpretation rule for *want* in (28), the existential statement contains a conjunction of conditions, including the condition that its complement ϕ be defined. In the case of a PRO complement, ϕ is only defined if the presupposition contributed by PRO is satisfied. Inclusion of this condition has the effect of local accommodation, similar to Beaver & Krahmer's (2001) A-operator: If the presupposition is satisfied, it is accommodated; if the presupposition is not satisfied, the sentence is predicted to be false.

Let us consider what happens when the former holds and the presupposition is satisfied. The presupposition of PRO requires the concept generator variable applied to its sister (here: *G(Mary)*) to map to a specific value, f_{self}. Therefore, for the existential statement to be true, f_{self} is the only possible value for G(Mary). This in turn means that existential quantification is rendered trivial. As long as we replace G(Mary) with f_{self} in conjunct (iii), we can eliminate the existential statement from the truth conditions. The crucial meaning component that remains is the universal statement expressing the desire. This is shown in (33) below.

(33) $[\![(29)]\!]^{c,g} = 1$ iff
(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with Mary's desires in $w \Rightarrow$ $\underline{f_{self}}(\langle w', x'\rangle)$ wins the competition in w']

$\ldots = 1$ iff (iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with Mary's desires in $w \Rightarrow x'$ wins the competition in w']

Let me illustrate how the above entry correctly rules out non-*de se* uses of Control constructions. Consider example (34): This scenario described in (34-a) cannot be described by the Subject Control construction in (34-b). This conflict is derived as follows: Mary does not have a particular desire for herself to be on the task force. This means that, for all we know, being an x that does not join the task force is compatible with Mary's desires. Thus there are tuples $\langle w, x\rangle$ among Mary's desire worlds of which it is *not* the case that x joins the task force, i.e., of which the consequent is false.

How does this play out formally in my semantics, where *de se* is secured by way of a presupposition? In the non-*de se* scenario below, the presupposition introduced by PRO is failed. This means that conjunct (ii) in the existential statement – that ϕ be defined – is false and, consequently, and everything else being equal, the existential

statement is false. (The truth conditions are repeated in (35) below.) Again, we thus achieve a similar result as we would using an A-operator.

Is the prediction of falsity in a non-*de se* context adequate? Let us look at an example and consider the PRO construction in (34) uttered in the described non-*de se* scenario. Intuitions as to the nature of the oddity – is it falsity or rather infelicity? – are somewhat blurry. Barring evidence to the contrary, for now I thus stick with my analysis.

(34) a. Scenario: *Mary, not realizing that she is reading her own CV, says "This woman sounds great and should be selected as part of the task force on climate change". (We do not know about Mary's conscious, i.e., de se desires regarding herself.)*

b. */#Mary wants to be part of the task force on climate change.

(35) $[\![(34\text{-b})]\!]^{c,g} = 1$ iff $\neg\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for Mary in world(c) &

$\boxed{\text{(ii) } G(\text{Mary}) = f_{self}}$ &

(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with Mary's desires in w $\Rightarrow G(\text{Mary})(\langle w', x'\rangle)$ wins the competition in w'

Consequences for the (un)interpretability of ϕ-features

The analysis of PRO as a complex unit has exciting ramifications for a theory of ϕ-features: As foreshadowed in chapter 3, the proposed analysis allows us to challenge the claim represented by Kratzer (1998), Stechow (2003), Schlenker (2003), Heim (2008) whereby ϕ-features on bound pronouns are invisible to the semantic component.

Recall that an analysis of PRO as a semantically empty element made the assumption of semantically inert ϕ-features à la Kratzer (1998) inevitable. However, under the current proposal, this assumption (albeit consistent) is no longer needed given that the ϕ-features on PRO and any variables bound by PRO sit *inside* the argument of the concept generator. As a result, the features are interpreted exclusively outside the attitude context, as presuppositions on the DP controller binding the variable (e.g., *Mary* in example 2), cf. condition (ii) below.

(36) PRO in (29): If $g : [3 \rightarrow \text{Mary}]$

(i) $g(2)(g(3)) = f_{self}$ &

(ii) $g(3) \neq (\textit{speaker} \vee \textit{addressee})$ & $g(3)$ is a female,

$[\![[_{\text{PRO}}\ G_2\ x_{3[3.\text{SG.FEM}]}]\!]^{c,g} = g(2)(g(3))(c)$,

else undefined.

This property of my analysis is in line with recent proposals that have called into question the existence of purely phonological features: Spathas (2010) shows that cases involving focus alternatives (cf. *Only I did my homework*), which have been used as a central motivation in the introduction of PF features (see Heim 2002), are amenable to a "semantic" account of ϕ-features on bound variables. Moreover, Bassi & Longenbaugh (2018) claim that a semantic alternative is in fact superior to a PF account, citing as evidence a novel type of examples involving donkey pronouns in focus contexts. The feasibility of associating PRO's ϕ-features with semantic content could be viewed as another piece of data to corroborate the view that ϕ-features on bound variables are no different from ϕ-features on referential pronouns.

Some desirable predictions

First I would like to revisit two types of cases brought up in section 3.1.2 that could not be accounted for under a property ("empty PRO") analysis of Control complements. Then I will return to conclude Charlow & Sharvit's (2014)argument for a concept generator approach and demonstrate its success in dealing with multiguise readings.

The first type of case concerns *de re* readings of local anaphors in the PRO clause. We noted that (37) has a true reading in a context where Palin, after reading an article written by a politican, says to Bill " I want to vote for this politician", unaware that she herself wrote the article.

(37) Palin promised Bill to vote for herself.

Under a property analysis, *herself*, which is locally bound by PRO, is necessarily interpreted *de se*, and (37) is predicted to be false in the described scenario.

A complex PRO analysis, on the other hand, offers the option of assigning to *herself* a variable G_7 different from G_3 inside PRO, as shown in (38)[14]: In contrast to G_3, the reference of G_7 is contextually determined and not constrained by a presupposition that it map to the *self*-relation; G_7 in the given example maps Palin to the relation holding between Palin's belief worlds and the individual whom Palin

[14]See also Landau (2018), who suggests a similar solution.

believes to have written the article.[15,16]

(38) $[\![\text{Palin}_1 \text{ promised}^{3,7} \text{ Bill } [[_{\text{PRO}} \text{ G}_3\ x_1] \text{ to vote for } [G_7 \text{ herself}_1]]]\!]^{c,g} = 1$ iff $\exists G, \exists G'$ s.t.

(i) G, G' are acquaintance-based concept-generators for Palin in w_c &

(ii) $G(\text{Palin}) = f_{self}$ &

(iii) $\forall \langle w', x', y' \rangle \in \text{PROMISE}_{w_c, Palin, Bill} : G(\text{Palin})(\langle w', x', y' \rangle)$ votes for $G'(\text{Palin})(\langle w', x', y' \rangle)$ in w']

A second case of interest regards gender features on pronouns bound by PRO: As Schlenker (2003) points out, *Alice wants PRO$_i$ to buy herself$_i$ a car* is a truthful report about Alice, a transsexual, announcing "I want to become a man and buy myself a car". As discussed in section 3.1.2, under a Chiercia style analysis of PRO clauses the gender feature [FEM] on *herself$_i$* must be uninterpretable: If [FEM] were visible at LF, the presupposition it imposes on PRO (which in Chierchia's analysis binds *herself*) would result in semantic ill-formedness. (Recall that the presupposition would confine the property of buying oneself a car to individuals that are female. Given that Alice's desire attitude does not contain worlds where she is female, we would end up with a modal *want* with an empty restrictor.)

Under the current approach, however, the bound variable marked with [FEM] forms the argument of the concept generator. This means that the presupposition associated with the FEM feature (that the referent of the bound variable be a female) will not be reflected in the attitude denoted by the PRO clause.

(39) Alice$_3$ wants to become a man and

[15]For now I abstract away from the fact that the presence of more than one concept generator in a given clause requires that attitude verbs quantify over *sequences* of concept generators. This ultimately inevitable assumption has been worked out by Charlow & Sharvit (2014); the adjusted denotation is presented below (cf. (43)) in the context of the closely related problem posited by Charlow & Sharvit's (2014) multiguise reading.

[16]Sharvit (2011) labels the grammaticality of *herself* under the targeted reading an "unexpected BT effect". However, Sharvit raises this concern in a property analysis of Obligatory Control complements; while it would seem that the use of concept generators could significantly remedy that concern, Sharvit dimisses a corresponding approach based on certain objections. Landau (2018) succinctly responds to these objections; in particular, he points out that Sharvit's probably gravest objection – the ungrammaticality of a synonymous LF where the *de re* pronoun is bound directly by *Palin*, cf. (i) – may be remedied by an econonmy principle, first suggested as *Rule I* in Grodzinsky & Reinhart (1993) and "quite general and demonstrably operative in BT effects", whereby A-binding is preferred over coreference.

(i) Palin$_1$ promised Bill to vote for her$_1$.

[she$_3$ wants^5 [[PRO G_5 $x_{3[3.\text{SG.FEM}]}$] to buy [G_5 herself$_{3[3.\text{SG.FEM}]}$] a car]]

(40) If $g : [3 \rightarrow \text{Alice}]$

(i) $g(4)(g(3)) = f_{self}$ &

(ii) $g(3) \neq (speaker \vee addressee)$ & $g(3)$ is a female,

$[\![[\text{PRO } G_5\ x_{3[3.\text{SG.FEM}]}]\!]^{c,g} = g(5)(g(3))(c)$,

else undefined.

(41) $[\![(39)]\!]^{c,g} = 1$ iff $\forall\langle w', x'\rangle \in \text{DESIRES}_{w_c,Alice} : x'$ becomes a man in w' & x' buys a car for x' in w'

Finally, let us return to Charlow & Sharvit's (2014) argument for P&S approach to *de re*: Recall from section 5.2.1 that neither an approach building on QR, nor an analysis taking the *res* to constitute the internal argument of a relational verb *believe*^{re} seemed capable of deriving the so-called *multiguise* reading illustrated in (42) while at the same time not generating any unattested readings.

A concept generator approach offers the following solution: The targeted reading is associated with the LF in (42), which assigns distinct concept generator variables G_4 and G_5 to the QP and its bindee. This way we are able to capture the fact that John is acquainted with each of the female students in two different guises. Returning to our original scenario, given a pair of photos $\langle \text{Alice}_1, \text{Alice}_2\rangle$ showing Alice in two different guises, there are, among others, the following two suitable concept generators G_4, G_5 s.t. $g(4)(\text{Alice}_1)$ maps to $[\lambda\langle w, x\rangle.$ the z s.t. x in w sees a photo of z showing z as a painter], and $g(5)(\text{Alice}_2)$ maps to $[\lambda\langle w, x\rangle.$ the z s.t. x in w sees a photo of z wearing a ski suit] (where Alice$_1$ and Alice$_2$ correspond to the subject trace t_1 and the bound variable her$_2$, respectively); similar for the other involved female students. (Note that for the sake of simplicity and legibility, and parallel to my denotation for *want* in previous examples, the concept generator variables are bound by the attitude verb directly rather than by mediating lambda abstractors in the LF below. However, nothing hinges on this assumption.)

(42) $[\![$[every female student] [λ_2 [John [believes^{4,5} [[G_4 t_2] likes [G_5 her$_2$] mother]]]]$]\!]^{c,g}$ $= 1$ iff $\exists G, \exists G'$ s.t.

(i) G, G' are acquaintance-based concept-generators for John in w_c &

(ii) $\forall\langle w', x'\rangle \in \text{DOX}_{w_c,John}$: $[\forall y : y$ is a female student in $w_c \Rightarrow G(y)(\langle w', x'\rangle)$ likes in w' the mother of $G'(y)(\langle w', x'\rangle)]$

Note that, since multiguise readings involve multiple distinct concept generators, attitude verbs must correspondingly be taken to quantify over *sequences* of concept generators, rather than over single variables. As Charlow & Sharvit (2014) illustrate,

this can be implemented by way of a type-flexible semantics for attitude verbs along the following lines.

(43) a. $[\![\text{believe}^{\text{FGC}}]\!]^{c,g}(w)(p)(x)$ is defined only if for all $S(= \langle G_1^S \ldots G_n^S \rangle)$ in $\text{CON}(c)_{x,w,n}$ such that $Dox_{x,w} \subseteq \{w' \in D_S : p(G_1^S) \ldots (G_n^S)(w')$ is defined$\}$.[17]

b. When defined, $[\![\text{believe}^{\text{FGC}}]\!]^{c,g}(w)(p)(x) = 1$ iff there is an $S(= \langle G_1^S \ldots G_n^S \rangle)$ in $\text{CON}(c)_{x,w,n}$ such that $Dox_{x,w} \subseteq \{w' \in D_S : p(G_1^S) \ldots (G_n^S)(w') = 1\}$

One last note is in place: Charlow & Sharvit (2014) point out that the current theory is not completely flawless and overgenerates readings if a concept generator takes as its argument a variable bound by a *de dicto* expression. For a lack of alternatives that fare better in an overall respect, this argument does not seem to threaten their preference for the current account. However, since overgeneration was used to argue against alternative accounts, it would be appropriate to examine the predictions made by the current account more closely in order to ensure that the same stigma attached to competing approaches cannot also be attributed to the current approach.

Conclusion

Let me conclude. In section 3 I reviewed evidence that PRO bears ϕ-features using data from English as well as Korean. In the context of this observation, I argued against a common analysis of PRO as a semantically vacuous element: An analysis of this type has difficulty accounting for agreement between PRO and its controller. Moreover, I showed that PRO's features must be uninterpretable for the purposes of LF in such an analysis, if we want to successfully account for the range of attested (and unattested) meanings.

In this section I demonstrated that the presence of the concept generator variable as another daughter of PRO allows us to derive the second property of jussive PRO (also present in regular PRO), to wit, the obligatoriness of a *de se* interpretation. Moreover, the motivation for the existence of concept generators has been argued to extend beyond PRO: Assuming Charlow & Sharvit (2014) are correct, the existence of concept generators is required for independent reasons, in order to describe the availability of multiguise readings arising in attitude contexts where a quantifier binds a pronominal variable read *de re*.

[17] $\text{CON}(c)_{x,w,n}$ is a non-empty set of n-long sequences of concept-generators supplied by context c that are suitable for x in w.

5.2.3 Jussive PRO in context

To understand my analysis of PRO in embedded jussives, it is necessary to take a step back and identify some of the other building blocks and their contribution in embedded jussives. I will start by sketching the LF I assume to underlie jussive reports. The structure in (47) exemplifies the LF of an embedded promissive in Korean. The structure of Mongolian jussives is assumed to be identical, modulo overt PRO and other phonological exponents.

Korean jussives as well as their Mongolian counterpart are introduced by a complementizer. I take the complementizer to have a purely syntactic function and be semantically empty.

The jussive clause contains two crucial functional projections below the CP, JussP and TP. Crucially, I separate jussive force from jussive morphology. Jussive force is located in JussP and contributed by a silent modal JUSSIVE heading the phrase. Note that I take the same modal to be present in all jussive clauses, i.e., in voluntative and imperative clauses in Mongolian, and in promissive, imperative, and exhortative clauses in Korean. This means that, despite morpholgical diversity, the same modality is taken to underlie all jussive clauses. I take JUSSIVE to be a desire modal. The exact semantics of JUSSIVE will be discussed in a later section.

Jussive morphology, on the other hand, is expressed in TP, for example, by way of the promissive particle *-ma* in T in (47). Importantly, the jussive morpheme in T makes no semantic contribution in my analysis. Rather, it is considered a reflex of agreement with the PRO subject in SpecTP, specifically, with PRO's [VOL/PROM/IMP/EXH] feature. Moreover, in order to derive the dependence of jussive morphology on the presence of the JUSSIVE modal, I assume T in jussive clauses to be marked with another uninterpretable feature, viz., [uJUSS], which is checked by a corresponding interpretable feature [JUSS] on the JUSSIVE modal. The lexical entry for promissive T might thus be rendered as (44).

(44) $\mathrm{T}_{[\mathrm{UPROM}][\mathrm{UJUSS}]} \rightarrow$ *-ma*

The [VOL/PROM/IMP/EXH] features on PRO are crucial in a semantic respect as well: Given that modality is uniform across jussives, the only semantic difference between morphologically distinct jussive clauses is induced by these features on PRO – which, as will be shown later, correlate with different presuppositions.

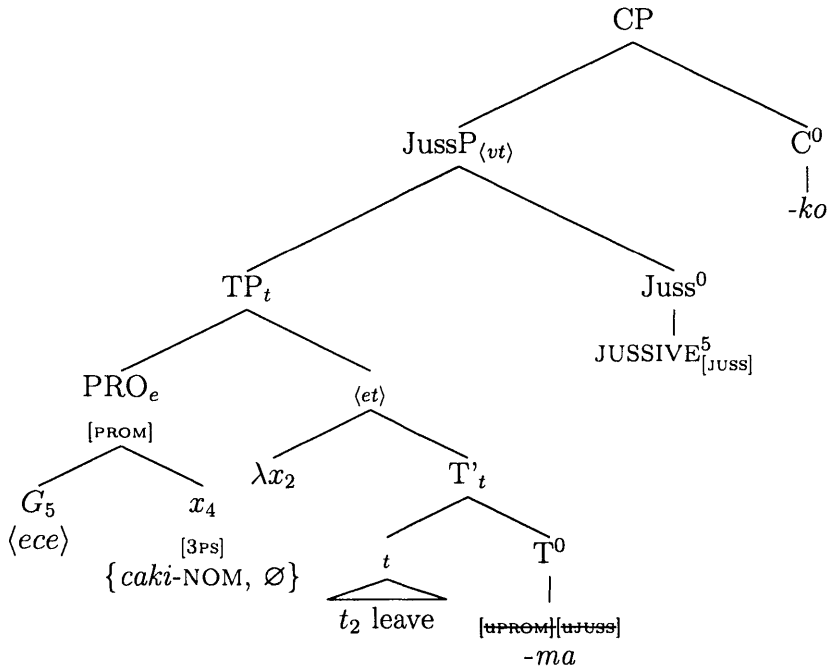
In addition to "jussive" features, PRO bears ϕ-features, cf. [3PS] in (47). PRO agrees in ϕ-features with its controller in the higher clause. Note that these features determine the shape of overt PRO in Korean; PRO marked [3PS], for example, surfaces as *caki*. The lexical entry for Korean PRO, which may alternatively be silent,

is given in (45). In combination with the lexical entries for general pronouns, which includes (46), we can derive the form of jussive PRO in Korean.

(45) $[_{[\text{PROM/IMP/EXH}]}\ G\ \alpha\ ] \rightarrow \{[\text{overt pronoun with features of } \alpha], \varnothing\}$ (Korean)

(46) $[\text{3PS}] \rightarrow$ *caki* (Korean)

(47) John$_4$ told Mary ...



5.3 The JUSSIVE modal

5.3.1 Semantic background: attitudes as events with content

I adopt an event semantics for attitudes and speech events, following Kratzer (2006), Moulton (2009), Elliott (2016). In such a semantics, the meaning of attitude verbs is pared-down: Attitude verbs merely denote a set of corresponding attitude states, for example, the set of belief states in the case of *believe* and *think*, cf. (48). The attitude itself is introduced by the complement as the *content* of the attitude state. This means that, rather than being empty, the complementizer makes a semantic contribution: *that* takes a propositional argument p and denotes a set of eventuali-

ties[18] whose content is p, cf. (49). Consider the different denotations of a *that*-clause in an event-based view (50-a) vs. a propositional view (50-b). Note that I assume that an event only exists in one world.

(48) $[\![\text{believe}]\!] = \lambda e.\ \text{belief}(e)$

(49) $[\![\text{that}]\!] = \lambda p_{\langle st \rangle}.\lambda e.\mathcal{F}_{cont}(e) = p$

(50) $[\![\text{that Mary will win}]\!]$

a. $\lambda e.\mathcal{F}_{cont}(e) = \lambda w.$ Mary will win in w

b. $\lambda w.$ Mary will win in w

Given that attitude verbs and their clausal complement both describe eventualities, composition of the two proceeds via predicate (event) modification rather than functional application. A *believe* predicate including its clausal complement (51) would be assigned the following representation.

(51) $[\![\text{believe that } \phi]\!] = \lambda e.\ \text{belief}(e)\ \&\ \mathcal{F}_{cont}(e) = \phi$

Let me provide some background on the view just introduced. An approach to clausal complements as properties of events makes one central assumption, to wit, that certain types of individuals and eventualities have propositional content.

The idea of entities having propositional content has been inspired, to an important extent, by the existence of so-called *content nouns* such as *story* or *rumor*, and their ability to take clausal complements (52).

(52) the rumor that Petra is innocent

By Kratzer (2006), content nouns describe a specific type of individuals, namely, individuals that define accessible worlds. Thus, a particular story or rumor in the actual world can, for any possible world, determine whether that world is compatible with the rumor or story (Moulton 2009:26). The set of compatible worlds then forms the content of the rumor or story.

Moulton (2009:27). adopting Kratzer's idea, formalizes this notion of content by way of a function $\mathcal{F}_{cont}$ (53): $\mathcal{F}_{cont}$ maps (contentful) individuals x onto a set of possible worlds w compatible with the content of the individual. ($\mathcal{F}_{cont}$ can be thought of as a conceptual primitive, analogous to thematic roles such as AGENT, GOAL, etc.) *that*-clauses are analyzed as sets of contentful individuals, cf. the entry

[18] I do not distinguish between states, events, and eventualities on a semantic level. When talking about entities of this category, most of the time, I use the notion *event*. I employ v as the semantic type of events, and by default use e as a variable ranging over events.

for *that* in (54).

(53) $\mathcal{F}_{cont}(x) = \{w\text{: } w \text{ is compatible with } x\}$

(54) $[\![\text{that}]\!] = \lambda p.\lambda x_c.\mathcal{F}_{cont}(x_c) = p$

(Moulton 2009:27, following Kratzer 2006)[19]

(55) $[\![\text{the rumor that Petra is innocent}]\!] =$
$\iota x\text{: rumor } (x) \,\&\, \mathcal{F}_{cont}(x) = \lambda w'.$ Petra is innocent in w'

An analysis of *that*-clauses as properties of (contentful) individuals creates the foundation for a unified treatment of content nouns and their verbal counterparts. Elliott (2016) works out such a treatment: Elliott expands the class of potentially contentful individuals and assumes it to contain not only abstract objects such as facts and ideas, but also attitude states such as belief states (cf. (51)) and, crucial for our purposes, saying events. Using a Neo-Davidsonian approach, where DP arguments are introduced by functional heads such as AGENT and GOAL (type $\langle et, eet\rangle$, with e ranging over individuals and eventualities), Elliott assumes the following meaning for the vP of a basic speech report.

(56) $[\![[_{vP}$ Abed AGENT said that Shirley is upset$]]\!] =$
$\lambda e.\ agent(e) =$ Peter & saying(e) & $\mathcal{F}_{cont}(e) = \lambda w'.$ Shirley is upset in w'

Note that Elliott (2016) subsumes both individuals and eventualities under the same type e, for *entities*. I remain open to the possibility of a shared semantic type, however, for the purposes of my analysis, I stick to the practice of differentiating between individuals (type e) and eventualities (type v). For me, the crucial innovation in Elliott's proposal is that CP complements of verbal predicates, *including speech predicates*, denote properties of eventualities rather than sets of worlds.

A precedent for the idea that events are semantically more complex than we might assume can be found in Hacquard (2006), who argues that speech events and attitude states have content and suggests to recast conversational backgrounds as being anchored to events rather than worlds; cf. also Anand & Hacquard (2008).

The framework presented in this section provides the basis for my treatment of the JUSSIVE modal, whose semantics I begin to outline in the following section.

[19]Moulton uses x_c to stand for the subclass of individuals that carry content.

5.3.2 A preliminary semantics for the JUSSIVE modal

As anticipated in earlier parts of this work, I pursue a modal analysis of jussives in Mongolian and Korean, thus following a line of analysis of imperatives developed, crucially, in Kaufmann (2012, among others). In my view, jussive clauses in Mongolian and Korean contain a silent universal modal JUSSIVE, which contributes their special non-assertive force. JUSSIVE is taken to project its own functional phrase, JussP, as illustrated in (47). I tentatively assume JUSSIVE to be bouletic in nature: Besides a circumstantial modal base, it involves a prioritizing ordering source drawing on a set of desires, akin to English *want*.[20] The presence of the same bouletic modal across (morphologically distinct) jussive clauses guarantees a uniform semantics for the different jussive forms.

Recall that the different verbal markers found in jussive clauses are dissociated from jussive semantics in my analysis, hence not constituting classical mood markers. As noted before, I attribute the markers (*-iy* and *∅/-Aree* in Mongolian, *-ma, -la, -ca* in Korean) to T and view them as semantically empty agreement with the jussive subject.

In this chapter, I focus on those semantic properties of the JUSSIVE modal that interact in a crucial way with the PRO subject and its two central properties: its dependency on a controller, and the obligatoriness of a *de se* interpretation. There are many pressing questions raused by an analysis of non-assertive speech acts as modal propositions, including the right characterization of the modality involved, and the question as to how we can derive the performative nature of all clauses containing JUSSIVE and exclude descriptive uses. However, I will put these questions aside for now.

Let me outline the general semantic structure of JUSSIVE: In correspondence with an event-based view of attitude and speech reports, I take jussive clauses to denote events of a contentful type. The content of the described events, $\mathcal{F}_{cont}(e)$, is assumed to correspond to a universal statement, which may be thought of as representing a command (in the case of imperatives), an intention (in the case of Mongolian voluntatives and Korean promissives), or a prompt (in the case of Korean exhortatives).

Different from Moulton's (2009) & Elliott's (2016) analyses of standard attitude and speech reports, I assume that it is JUSSIVE itself rather than the complementizer

[20]Though it is common to explain the ambiguity found in most standard modal predicates by way of syntactic decomposition into at least a quantifier and a restrictor component (cf. Kratzer 1991, Heim & von Fintel 2011), nothing in my current analysis would motivate a corresponding assumption for the JUSSIVE modal, which is why I stick with an analysis of JUSSIVE as a syntactically simple element.

which introduces the content of the speech report. Though both Mongolian and Korean embedded jussives do feature a complementizer, the complementizer plays no semantic role.

By composing with the embedding predicate – such as *say* (most commonly), but also *promise, order* etc. – by way of predicate modification, the set of events denoted by the jussive clause comes to be identified as a set of saying (promising, ordering etc.) events.

In a Neo-Davidsonian semantics, arguments are introduced by functional heads denoting the various thematic roles, rather than by the predicate itself. This includes propositional arguments such as attitudes and contents of utterances, which are introduced by the clausal complement. However, since attitudes and contents of utterances are typically relative to another argument, i.e, the attitude holder or, in the case of speech reports, the speaker, the question arises as to how this argument may be accessed.

Recall that in my analysis it is the JUSSIVE modal that introduces the (bouletic) attitude expressed by voluntatives, imperatives, etc. The reported attitude is typically that of the reported speaker, e.g., John in the promissive report (47). How can we connect the attitude to its holder in the absence of a predicate that introduces both arguments? To resolve this issue, I take JUSSIVE to be equipped with a presupposition calling for the denoted events to have an agent and a goal. This presupposition, which is satisfied by the presence of a speaker and a (possibly covert) hearer argument in the matrix clause, grants the embedded clause access to the matrix arguments: Concretely, the JUSSIVE entry (57) references the (expressed-)desire worlds of *agent*(e) as the restrictor of the universal statement.[21] Note that the strategy of recovering an attitude holder via an eventuality argument is not new and has been employed in Anand & Hacquard (2008) and Moulton (2009:156).

Not all events can be assumed to have propositional content. To ensure that the set of events denoted by the jussive clause, moreover, is of a contentful type, I extend the presupposition carried by JUSSIVE by a condition whereby the denoted events, besides an agent and goal, also have content.

Below I sketch a preliminary semantics for the JUSSIVE modal that comprises the components discussed above. To summarize, according to (57) a JussP with JUSSIVE as its head denotes a set of events, which are presupposed to have an agent, a goal, and content; he agent and goal presuppositions are satisified by the reported speakear and the reported hearer of the jussive, for example, by *John* and *Mary* in

[21] I assume that thematic roles are uniquely assigned. In other words, I hold the view that any agent of some event is the unique agent of this event, and, likewise, this is the case for other thematic roles.

the promissive report (47), *John told Mary leave*$_{\text{PROM}}$. The JussP asserts that the content of the described events, $\mathcal{F}_{cont}(e)$, is a set of worlds in which the agent of e (claims to) want(s) $[\![\text{TP}]\!]$; e.g.. for (47), a set of worlds in which $agent(e)$ claims to want that $g(4)$ (= John) leaves.

(57) $[\![[_{\text{JussP}}\ [_{\text{TP}}\ x_4 \text{ leave-PROM}]\ \text{JUSSIVE}]]\!]^{w,g} = \lambda e$:

a. e has an *agent*, a *goal*, and a *content* of type $\langle st \rangle$. (PRESUPPOSITION)

b. $\mathcal{F}_{cont}(e) = \lambda w'.\ \forall w''\ [w''$ is compatible with the expressed desires of $agent(e)$ in $w' \Rightarrow g(4)$ leaves in $w'']$[22] (ASSERTION)

The LF in (47) and the meaning of the JussP (57) is simplified and falls short of a complete semantics for jussive clauses in the following respects: Crucially, the given meaning does not account for the *de se* attitude holding between the reported speaker and the jussive subject. Relatedly, the structure of the jussive subject (47) is reduced to a plain variable rather than more complex $[_{\text{PRO}}\ \text{G}_i\ \text{x}_j]$. I will successively move towards a more complete account in the next sections.

5.3.3 Reconciling concept generators with an event-based semantics

The "jussive" attitude of the reported speaker is introduced in the jussive clause as part of the contribution of the JUSSIVE modal. The simplified semantics for JUSSIVE above correctly encodes the bouletic modality characterizing jussive propositions, but disregards the fact that the attitude is necessarily *de se*: recall that we cannot use a promissive report *John said to Mary [leave*-VOL*]* in Korean, for example, to report a situation where John says to Mary "I want this guy to leave our team", unaware that he is pointing at his own picture.

In section 5.2.2 I presented an analysis of *de se* attitudes in Control constructions. My analysis relies on Chierchia's (1989) proposal to describe *de se* relations as relations between sets of centered worlds $\langle w, x, (y, \ldots)\rangle$ (tuples of a world and one or more individuals, short c) rather than between simple sets of worlds. In my implementation of this idea I drew on Percus & Sauerland's notion of concept generator variables G inside DPs. I assumed that PRO is a semantically and structurally

[22] I interpret meta-language *agent*, marked by italics, as a function of type $\langle v, e\rangle$:

(i) $agent_{\langle ve\rangle} = \lambda e.\iota x : x$ is the agent of e

The presupposition on e could thus, more formally, be stated as follows: $e \in (\text{dom}(agent)\ \&\ \text{dom}(goal)\ \&\ \text{dom}(\mathcal{F}_{cont}))$.

complex expression containing such a G, and showed how the *de se* component can be derived via a presupposition on G carried by PRO.

The semantics used for Control PRO constitues one of the pieces that goes into a more complete analysis of jussive clauses. However, there is another component of my analysis which has been developed in parallel: This is the view that predicates denote properties of events, and that attitudes and reported utterances can be seen as contents of events. Hand in hand with this goes a Neo-Davidsonian semantics in which arguments are selected by separate thematic heads and composition of the predicate and its arguments proceeds via multiple instances of modification. The section at hand confronts the task of bringing together these two strands of my analysis.

Let us consider the implications of such a view for the JUSSIVE modal: According to the preliminary entry in (57), the JUSSIVE modal introduces the desire attitude. However, it lacks direct access to the holder of this attitude, i.e., the external argument in the higher clause.

Recall that concept generators (26) were defined as concept generators *for an individual* x, corresponding to the attitude holder. However, as the JUSSIVE modal does not take an attitude holder as its argument, a concept generator introduced by JUSSIVE cannot be defined as a concept generator *for some attitude holder* x.

A way to overcome this circumstance was anticipated in the last section and the entry for JUSSIVE in (57): We can exploit the fact that JUSSIVE selects for an event argument and access the attitude holder as one of the participants of the event. Note that the event referenced in the definition of the concept generator will eventually be identified with the event denoted by the matrix speech/attitude predicate. In the case of jussive reports, this is the reported speech event, in other words, the event of uttering the jussive. Crucially, the individual we need to access – the holder of the desire and *de se* attitude(s) – corresponds to the agent of this event. Taking advantage of this coincidence, we can rephrase concept generators as concept generators *for some event* e, defined as shown in (58). According to this definition, the domain of a concept generator G for e is the set of individuals *agent(e)* is acquainted with in the world where e takes place. Note that the definition I provide makes employs *doubly*-centered worlds, i.e., triplets of type $\langle s, e, e\rangle$ containing two individuals, rather than simply-centered worlds. This move is necessary to capture *de te* attitudes, which arise in Object Control constructions including imperative reports, in addition to *de me* in Subject Control constructions.

(58) Given an event e with an *agent* and a *goal*, G of type $\langle e, ce\rangle$ is an acquaintance-based concept-generator for e iff

a. $Dom(G) = \{z$: $agent(e)$ is acquainted with z in the world w of e $(= w_e)\}$
b. For all z in $Dom(G)$, if $G(z) = R$, then:
   (i) R is an acquaintance relation
   (ii) $agent(e)$ bears R uniquely to z in w_e (i.e., $G(z)(\langle w_e, agent(e), goal(e)\rangle) = z$)
   (iii) for all doxastic alternatives $\langle w', x', y'\rangle$ of *agent(e)* in relation to *goal(e)* in w_e, x' bears R uniquely to $G(z)(\langle w', x', y'\rangle)$ in w'.[23]

5.3.4 The JUSSIVE modal as quantifier over concept generators

In section 5.2.2 I presented an analysis of the Control verb *want* as a quantifier over concept generators, which enabled us to derive the characteristic *de se* interpretation of Obligatory Control constructions.

In the current section, I complete my analysis of the JUSSIVE modal, drawing on the meaning developed for *want* in 5.2.2, repeated in (60) below. Specifically, I demonstrate how we can reconcile quantification over concept generators with the tentative meaning for JUSSIVE in (57), repeated in (59). The revised meaning for JUSSIVE is compatible with the presuppositional analysis of PRO introduced in section 5.2.2 and allows us to derive the *de se* property of jussive reports in a similar fashion as shown for regular Control constructions in section 5.2.2.

(59) $[\![\text{JUSSIVE}]\!]^{w,g} = \lambda p_{\langle st\rangle}.\lambda e$: e has an *agent*, a *goal*, and a *content* of type $\langle st\rangle$. $\mathcal{F}_{cont}(e) = \lambda w'.\ \forall w''$ [w'' is compatible with the expressed desires of $agent(e)$ in $w' \Rightarrow p(w'')$]

Recall that for technical reasons, I assumed *want* to incorporate a binder index for concept generator variables, cf. $want^w$ in (60), rather than positing a separate binder in the complement of *want*. The semantics of $want^i$ was given in the form of a syncategorematic entry $want^i\ \phi$ (60) governing the interpretation of *want* and its PRO-complement.

(60) $[\![\text{want}^i\ \phi]\!]^{c,g} = \lambda x.\exists G$ s.t.
   (i) G is an acquaintance-based concept-generator for x in world(c) &

[23]Defining doubly-centered worlds $\langle w', x', y'\rangle$ that are doxastic (or any attitude) alternatives for some participant of an event e is tricky if we cannot make reference to the specific nature of the event. If we assume that being a goal implies being addressed in some way by the agent, the most specific we can get is to say that $\langle w', x', y'\rangle$ are doxastic alternatives for *agent(e)* in relation to *goal(e)* in w iff "it is compatible with the beliefs of *agent(e)* to be x' addressing y' in w'".

(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &

(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c) $\Rightarrow [\![\phi]\!]^{g^{i\to G}}_{\mathfrak{c}}(\langle w', x'\rangle)$]

I transfer these aspects of the semantics of *want* to JUSSIVE, however, maintaining the view that jussive clauses form properties of events rather than propositions (in conformance with (59)): The meaning of JUSSIVE^i ϕ in (61) is a function from events to truth values. Correspondingly, as reflected in condition (i) in (61)), we now refer to concept generators relative to an event e (58) (as opposed to P&S's original notion of concept generators for an individual x).

JUSSIVE^i ϕ^i denotes a set of events e for which there is an appropriate concept generator G. The crucial innovation compared to (59), apart from the integration of concept generators, consists in the relativization of truth values to centered worlds. This update is reflected in two places in the entry below: first, in the content of the denoted events, $\mathcal{F}_{cont}$, which is a property of centered worlds and, second, in the desire expressed by the jussive, which is similarly described as a condition on sets of *centered* worlds. Note that the entry makes reference to *doubly*-centered worlds $\langle w, x, y\rangle$, with y corresponding to the addressee of x, instead of pairs $\langle w, x\rangle$: this extension is necessary to represent *de te* attitudes found, among others, in imperative reports.

(61) $[\![\text{JUSSIVE}^i\ \phi]\!]^{c,g} = \lambda e : e$ has an *agent*, a *goal*, and a *content* of type $\langle ct\rangle$. $\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for e &

(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &

(iii) $\mathcal{F}_{cont}(e) = \lambda\langle w, x\rangle.\ \forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world(c) $\Rightarrow [\![\phi]\!]^{g^{i\to G}}_{\mathfrak{c}}(\langle w', x', y'\rangle)$]

The implication in the above entry that jussive clauses contain a *de se* component in two places might be unexpected based on what we have heard so far: While I have made it clear that an imperative report of a desire proposition is only felicitous if the original speaker's desires were about the subject of the imperative *de te*, I have not explained why the content $\mathcal{F}_{cont}(e)$ should similarly be relativized to world-individual pairs. I make up for this in section 5.5.2.

However, I would like to clarify already at this point what it means for the content $\mathcal{F}_{cont}$ of an event to be a set of centered worlds $p_{\langle se,t\rangle}$. Recall from section 3.1.1 Chierchia's property analysis of *de se* attitudes and the interpretation assigned to attitude verbs with such complements: Crudely, x *wants* P is true *iff* x self-ascribes

P in x's desire worlds.

A similar principle helps elucidate the notion of $\mathcal{F}_{cont}(e)$. By (61), a sentence JUSSIVE ϕ identifies the content of the jussive event $\mathcal{F}_{cont}(e)$ with the centered-world proposition $[\![\phi]\!]$ (more explicitly, $\lambda\,\langle w, x\rangle\,.[\![\phi]\!](\langle w, x\rangle)$).

To understand these truth conditions, certain implicit components are pivotal: First, e (which can be an attitude state or speech event) is anchored to an agent (secured by a presupposition); it is *agent*(e)'s attitude or utterance that is at stake.

Moreover, we need to settle the interpretation of x in $\langle w, x\rangle$. Our goal is to identify x with *agent(e)*. To that end, I suggest an interpretation principle whereby $\langle w, x\rangle \in \mathcal{F}_{cont}(e)$ *iff* *agent*(e) wants/believes/asserts etc. to be x in w. Therefore, $\mathcal{F}_{cont}(e) = \lambda\,\langle w, x\rangle\,.\,[\![\phi]\!](\langle w, x\rangle)$ is true *iff* the agent of e wants/believes/asserts to be x in w and that $[\![\phi]\!](\langle w, x\rangle) = 1$, or – to bridge the gap to Chierchia's analysis – *iff* the agent self-ascribes $[\![\phi]\!]$ along the relevant dimension (whose nature – beliefs, desires, what has been said, or something else – is determined by the matrix predicate and mediated through e).

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We now have most of the tools required to derive jussive reports in Mongolian and Korean. In the following section I discuss the remaining ingredient: the semantic difference between PRO in different jussive clauses; note that this diversification has the central function of deriving the observed correlation between different jussive forms and the specific type of Control associated with them.

5.4 Flavors of jussive PRO

The analysis of *de se* adopted in this work crucially relies on the assumption that PRO is a complex constituent $[_{\text{PRO}}\ G_i\ x_j]$, which presupposes a specific value for $[\![G_i]\!]^g([\![x_j]\!]^g)$

We have seen already how a presuppositional semantics for PRO plays into the meaning of a standard Subject Control construction. Let us now consider the specific nature of PRO in jussive clauses (*aka* "jussive PRO").

I showed that there is corelation between jussive forms and different types of Control. Table 5.1 summarizes this correlation.

Recall from section 5.2.3 that jussive PRO is marked with a feature representing the type of jussive, such as [VOL] in voluntatives and [IMP] in imperatives. I argue that the feature on PRO is the *sole* difference between the LFs of different jussive types, i.e., between voluntative, imperative etc. clauses. The correlation between

TYPE OF CONTROL	JUSSIVE FORM
Subject Control	voluntative (Mongolian), promissive (Korean)
Object Control	imperative (Mongolian, Korean)
Split Control	exhortative (Korean)

Table 5.1: Correlation between jussives and types of Control

jussive forms and types of Control is derived in the semantics as a result of the variation in PRO's features.

PRO in jussives is marked with one of [VOL]/[PROM]/[IMP]/[EXH]. Syntactically, these features check an uninterpretable counterpart [uVOL]/[uIMP] etc. on T and, thereby, indirectly determine the spell-out of T.

What is the semantic import of these features? As alluded to above, each flavor imposes a slightly different presupposition on PRO or, more precisely, its constituents. The denotations for the various flavors of PRO are provided in (62) below.

I collapse the semantics of the $\text{PRO}_{[\text{VOL}]}$ subject of Mongolian voluntatives and $\text{PRO}_{[\text{PROM}]}$ in Korean promissives. Likewise, the subject of imperatives is assumed to be the same item $\text{PRO}_{[\text{IMP}]}$ in Mongolian and Korean. PRO marked with the feature [EXH], on the other hand, is specific to Korean. The different presuppositions are rendered as functions f from doubly-centered worlds to individuals, cf. (63). They may be viewed as versions of the f_{self}-relation presupposed by Subject Control PRO.

Though difficult to see at this point, in a felicitous jussive report the individual centers x and y in (63) will be identified with the speaker and the addressee of the jussive and their respective doxastic alternatives. Roughly, we hence derive the Control relations in 5.1 by virtue of making voluntative and promissive PRO map to x (the speaker), imperative PRO to y (the addressee), and exhortatives to the plurality $x \oplus y$: the different outputs will lead to (Subject) Control and the corresponding *de me* attitude, addressee (Object) Control and the corresponding *de te* attitude, and Split Control associated with a *de nobis* attitude, respectively.

(62) Denotation of jussive PRO(s)

a. If $g(i)(g(j)) = f_{prom/vol}$, $[\![[\text{PRO}_{[\text{PROM/VOL}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined.

b. If $g(i)(g(j)) = f_{imp}$, $[\![[\text{PRO}_{[\text{IMP}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined.

c. If $g(i)(g(j \oplus k)) = f_{exh}$, $[\![[\text{PRO}_{[\text{EXH}]}\ G_i\ x_{j \oplus k}]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined. (specific to Korean)

(63) a. $f_{prom/vol} = \lambda \langle w, x, y \rangle . x$[24]
b. $f_{imp} = \lambda \langle w, x, y \rangle . y$
c. $f_{exh} = \lambda \langle w, x, y \rangle . x \oplus y$

In the next section, I demonstrate in more detail how the variation in the semantics of jussive PRO conspires with the other ingredients, including concept generators as defined in (58), to yield the Control relations in table 5.1, as well as, indirectly, determines an appropriate matrix DP as the binder of the individual variable inside PRO.

5.5 Deriving the semantics of jussive reports

5.5.1 Example derivation: Korean imperative report

I will illustrate how the various parts of my analysis in the analysis of jussive reports using the example of an imperative report in Korean, (64). (65) provides the LF underyling the sentence.

My main focus has been on the interpretation of jussive subjects. Recall that the central semantic properties of embedded jussive subjects we were striving to capture concerned, first, its dependence on a matrix DP controller and, secondly, the obligatoriness of a *de se* attitude between the reported speaker and the jussive subject. As we have seen already, in imperative reports these two properties manifest themselves in the following ways: The subject is dependent on the reported addressee as its controller. Moreover, the reported speaker has a *de te* attitude towards the embedded subject.

The semantics derived below reflects both these properties.

[24]This entry disregards the fact that voluntatives and promissives can both have a 1EXCL subject. A more appropriate entry might be (i).

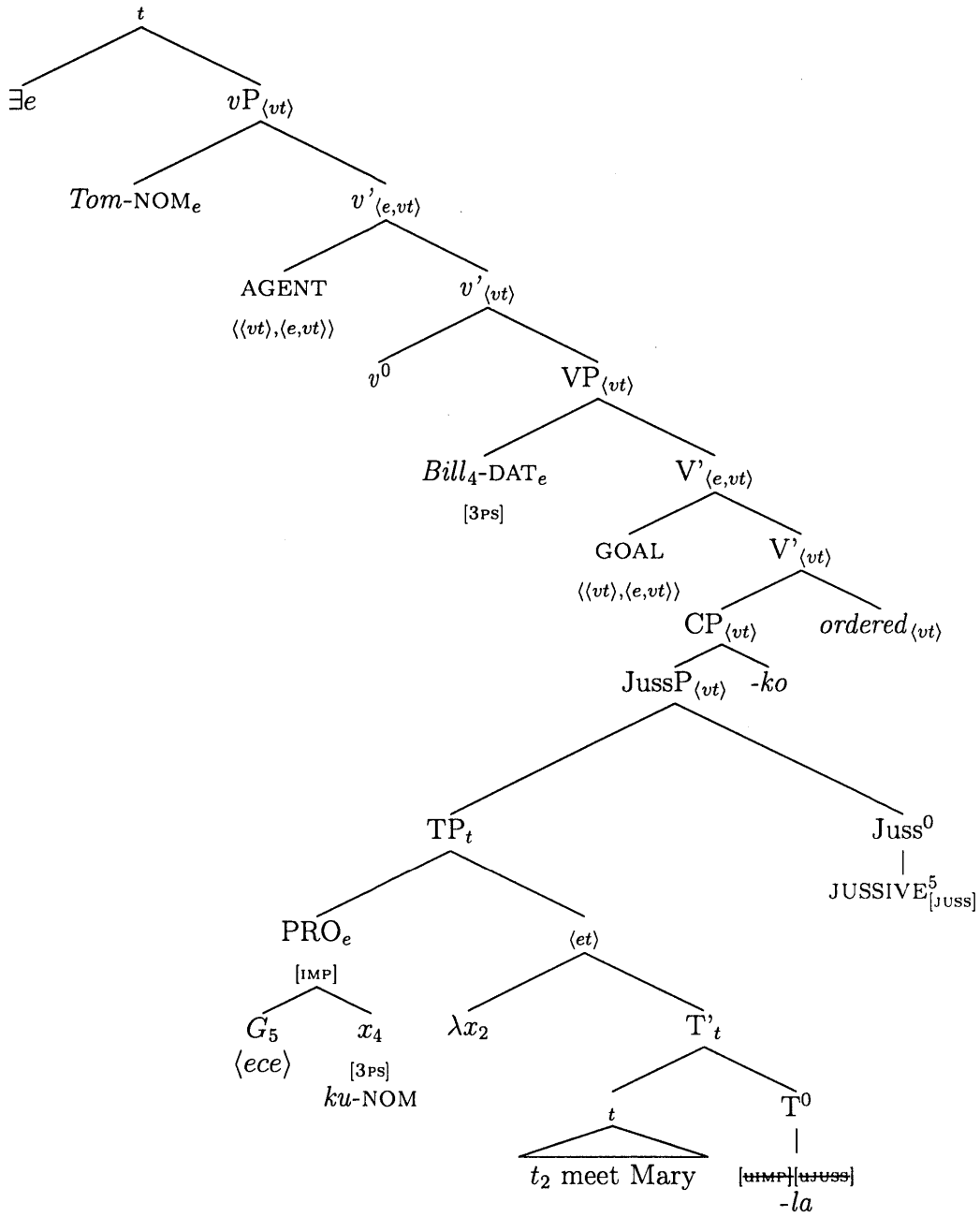
(i) $f_{prom} = \lambda \langle w, x, y \rangle : \exists! z$ salient in the context s.t. $x \subseteq z . \iota z$ salient in the context s.t. $x \subseteq z$

As for the distribution of promissives and exhortatives in Korean, note that the salient plural individual presupposed by f_{prom} never includes y (the goal argument), i.e., split control semantics seems incompatible with promissives. This could be an implicature from the availability of a competing item $\text{PRO}_{[\text{EXH}]}$ connected to exhortatives in Korean, which presupposes an acquaintance relation f_{exh} that creates exactly such an individual $x \oplus y$.

On the other hand, it is questionable if it is really impossible for PRO in imperatives (and exhortatives) to pick out a larger plurality including y (or $x \oplus y$). If this is a possibility, the asymmetry suggested by my entry is unprincipled (Irene Heim, p.c.).

(64) Tom-i Bill-eykey$_4$ [ku-ka$_4$ Mary-lul manna-la-ko] myenglyenghay-ss-ta.
Tom-NOM Bill-DAT he-NOM Mary-ACC meet-IMP-C order-PST-DECL
'Tom ordered Bill$_i$ PRO$_i$ to meet Mary.' (Park 2018:307)

(65) LF of imperative report (64) (Korean)



Lexicon

(66) $[\![t_2 \text{ meet Mary}]\!]^{c,g} = g(2)$ meets Mary in world(c)

(67) (= (62-b))

a. If $g(i)(g(j)) = f_{imp}$, $[\![[\text{PRO}_{[\text{IMP}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined.

b. $f_{imp} = \lambda\langle w, x, y\rangle . y$

(68) *-la* in T: semantically vacuous

(69) *-ko* in C: semantically vacuous

(70) $[\![\text{order}]\!]^{c,g} = \lambda e.$ order (e)

(71) a. $[\![\text{AGENT}]\!]^{c,g} = \lambda f_{\langle vt\rangle}.\lambda x.\lambda e.\ agent_(e) = x\ \&\ f(e)$

b. $[\![\text{GOAL}]\!]^{c,g} = \lambda f_{\langle vt\rangle}.\lambda x.\lambda e.\ goal_(e) = x\ \&\ f(e)$

Calculation

(72) $[\![\text{TP}]\!]^{c,g^{4\to\text{Bill},5\to G}} =$

$= \lambda z.\ [\![\text{T'}]\!]^{c,g^{2\to z}}\ ([\![[\text{PRO}_{[\text{IMP}]}\ G_5\ x_4]]\!]^{c,g^{4\to\text{Bill},5\to G}})$

$= G(\text{Bill}) = f_{imp} : [\lambda z.\ [\![\text{T'}]\!]^{c,g^{2\to z}}](G)(\text{Bill})(c)$

$= G(\text{Bill}) = f_{imp} : [\lambda z.\ z$ meets Mary in world$(c)](G)(\text{Bill})(c)$

$= G(\text{Bill}) = f_{imp} : 1$ iff $G(\text{Bill})(c)$ meets Mary in world(c)

(73) $[\![\text{JUSSIVE}^5\ \text{TP}]\!]^{c,g^{4\to\text{Bill}}} =$ (by JUSSIVE rule (61))

$= \lambda e : e$ has an *agent*, a *goal*, and a *content* of type $\langle ct\rangle$. $\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for e &

(ii) $[\![\text{TP}]\!]^{g^{4\to\text{Bill},5\to G}}$ is defined &

(iii) $\mathcal{F}_{cont}(e) = \lambda\langle w, x\rangle . \forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow$ $[\![\text{TP}]\!]^{g^{4\to\text{Bill},5\to G}}_{\mathbb{c}}(\langle w', x', y'\rangle)]$

$= \lambda e : e$ has an *agent*, a *goal*, and a *content* of type $\langle ct\rangle$. $\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for e &

(ii) $G(\text{Bill}) = f_{imp}$ &

(iii) $\mathcal{F}_{cont}(e) = \lambda\langle w, x\rangle . \forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow f_{imp}(\langle w', x', y'\rangle)$ meets Mary in w']

$= \lambda e : e$ has an *agent*, a *goal*, and a *content* of type $\langle ct\rangle$.

(i) & (ii) $f_{prom}(\langle w_e, agent(e), goal(e)\rangle) = \text{Bill}$ & (by (58-b-ii))

(iii) $\mathcal{F}_{cont}(e) = \lambda\,\langle w, x\rangle\,.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow y'$ meets Mary in w']

(74) $[\![$Tom ordered Bill$_4$ $[[_{\text{PRO}_{[\text{IMP}]}}\ G_5\ x_4]$ meet Mary IMP JUSSIVE^5 *-ko*$]]\!]^{c,g} =$
$= 1$ iff $\exists e$: order(e) & $agent(e) =$ Tom & $goal(e) =$ Bill &
(i) & (ii) $f_{imp}(\langle w_e, agent(e), goal(e)\rangle) =$ Bill &
(iii) $\mathcal{F}_{cont}(e) = \lambda\,\langle w, x\rangle\,.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow y'$ meets Mary in w']

$= 1$ iff $\exists e$: order(e) & $agent(e) =$ Tom & $goal(e) =$ Bill &
(iii) $\mathcal{F}_{cont}(e) = \lambda\,\langle w, x\rangle\,.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow y'$ meets Mary in w']

Roughly, the final meaning of the imperative report can be paraphrased in the following way: It asserts the existence of an ordering event with Tom as its agent (i.e., the one issuing the order), Bill as its goal (the addressee of the order), and a specific content[25] – namely, the set of centered worlds $\langle w, x\rangle$ where it is true that x wants any y who x does not mind being his addressee, to meet Mary.[26] As explained for the first time in the context of standard Control under *want* (see section 5.2.2), the existence statement about concept generators is rendered trivial in PRO clauses as only one acquaintance relation – in the above case f_{imp} – satisfies the presupposition carried by PRO. Consequently, we are left with the content of the jussive event – the universal statement, which assimilates the JUSSIVE to a desire statement – as the main meaning component.

In the following subsection I provide a brief discussion of the two ways in which

[25]Recall that the *content* of a speech (e.g., order) event is defined as the set of (centered) worlds that are compatible with was said (ordered).

[26]The semantics above is imprecise in a certain respect: I take the complement of T^0 to be of type t. I aside the fact that at some point lower in the phrase, we must have dealt with a property of events $\langle vt\rangle$, whose event argument must have been saturated first to yield a t type constituent. If we assume predicates in jussive clauses to be closed by an existential operator below the JUSSIVE modal similar to root predicates, a more complete semantics would reflect this in the consequent of the universal statement, for example, along the following lines.

(i) $(65)^{c,g} = 1$ iff $\exists e$: order(e) & $agent(e) =$ Tom & $goal(e) =$ Bill &
$\mathcal{F}_{cont}(e) = \lambda\,\langle w, x\rangle\,.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow \exists e'$ in w' s.t. e' is an event of y' meeting Mary]

jussive reports are *de se*, together with some examples showing how the denotation above enforces the required attitude in a given scenario.

5.5.2 Breaking down *de se* in jussives

There are two respects in which jussive reports are necessarily *de se*: The desire must be recognized as one's own desire, and the individual targeted by the desire (assumed to be jussive PRO) must be recognized as the target of one's desires. This is reflected in the use of centered worlds in two different spots in the truth conditions of a jussive report. Let me illustrate this by means of the imperative report analyzed above, whose denotation is repeated in (75). The relevant parts are underlined.

(75) $[\![\text{Tom ordered Bill}_4\ [\text{PRO}_{[\text{IMP}]}\ G_5\ x_4 \text{ meet Mary IMP JUSSIVE}^5\ ko]]\!]^{c,g} = 1$
iff $\exists e$: order(e) & $agent(e)$ = Tom & $goal(e)$ = Bill &
$\mathcal{F}_{cont}(e) = \underline{\lambda\,\langle w, x\rangle}.\underline{\forall\langle w', x', y'\rangle}$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world(c) $\Rightarrow$ y' meets Mary in w']

So far, I have spoken exclusively about the second respect in which jussive reports are *de se*, and this is the attitude I demonstrated to be obligatory for Mongolian and Korean in sections 2.3 and 4.3.3, respectively. Let me repeat what this attitude amounts to. The above imperative report is inapproproate if we want to describe a scenario in which Tom says to Bill *I want Bill to meet Mary* thinking that he is talking to Joe. The infelicity is derived as follows: Worlds w' in which Tom is x' and addresses a y' who is Joe are compatible with Tom's expressed desires, hence such triplets $\langle w', x', y'\rangle$ are among the restrictor-worlds of the universal quantifier. At the same time, for all we know based on Tom's utterance, it is compatible with Tom's desires that Joe does not meet Mary (Tom's desire is for *Bill* to meet Mary) – which means there are antecedent worlds $\langle w', x', y'\rangle$ where y' *does not* meet Mary, i.e., of which the consequent is false. Therefore, the report in (75) would be ruled out as false in such a scenario.

The same requirement holds for the other jussive forms, e.g., voluntatives and promissives, which express desires that are about the speaker himself: The reported speaker *John* in the promissive report *John*$_i$ *told Mary PRO*$_i$ *leave*-PROM, for example, must be aware that he himself is the target of the expressed desire, i.e., that the desire statement he made is about *himself* leaving (*de me*).

However, the desire attitude is not the only *de se* attitude in jussive reports, albeit so far I have remained silent about this second manifestation.[27] Suppose Alice says

[27]Thanks to Irene Heim (p.c.) for bringing this to my attention.

to Bob "The head of the department wants you to file a report", unaware that she herself is the head of the department. It would be infelicitous to use an imperative report *Alice said to Bob$_i$ PRO$_i$ file*-IMP *a report* to describe this event in Mongolian or Korean. Notice that this holds even though the desire attitude in this scenario is – appropriately – *de te.* (I.e., Alice is obviously aware that her addressee is the individual targeted by the request, given that she addresses Bob as *you.*) What we observe here is that a jussive report is a report of wanting something *oneself.* The denotation assumed for JUSSIVE captures this condition in that the content of the jussive event (e.g., the ordering-event in (75)) is represented as a property of centered worlds $\langle\langle se\rangle, t\rangle$ (cf. the first underlined portion in the denotation of (75)) rather than a simple proposition $\langle st\rangle$.

5.5.3 Deriving controller choice

I have established that voluntatives and promissive subjects are controlled by the clause-external subject (agent), and imperative subjects by the clause-external object (goal). I encoded the control relation by means of co-indexing the individual variable inside PRO and its DP controller. Note that in my current system, however, there is no syntactic mechanism that ensures the right type of Control. To give an example, nothing guarantees that the voluntative subject in (76) shares an index with the higher subject (76-a) rather than the object (76-b). How can we enforce Subject Control and rule out Object Control for PRO$_{[\text{VOL}]}$? A similar question arises for the subject of imperatives, PRO$_{[\text{IMP}]}$, and exhortatives, PRO$_{[\text{EXH}]}$.

(76) a. John$_3$ told Mary [[PRO$_{[\text{VOL}]}$ G_2 x_3] leave-VOL]
b. *John told Mary$_3$ [[PRO$_{[\text{VOL}]}$ G_2 x_3] leave-VOL]

Let me state the problem more formally. Given a concept generator G for e, the identity of the individual argument x of G has no direct semantic effect as it does not appear in the assertion part of G. Thus supplying G_2 in the voluntative (76-b) with a variable co-indexed with the matrix object, *Mary*, is presupposed to return the same function $\lambda\langle w', x', y'\rangle.x'$ for PRO$_{[\text{VOL}]}$, as G_2 applied to a variable co-indexed with the desired controller, *John* as in (76-a).

I argue that the semantic system we have set up is sufficient to derive the observed correlation between jussive type and identity of the controller (Subject/Object/Split Control) shown in table 5.1. Let me demonstrate this using the case of the voluntative report in (76).

The crucial ingredients are, on the one hand, condition (58-b-ii) of the definition of concept generators and, on the other, the presupposition PRO carries, cf. (78) for

$\text{PRO}_{[\text{VOL}]}$.

By (58-b-ii), given G for an event e, for any $z \in Dom(G)$, *agent(e)* stands in the relation $G(z)$ to z in the centered world associated with the event $\langle w_e, agent(e), goal(e)\rangle$. Thus, G_2 must be s.t. $[\![G_2]\!]^g(\text{Mary})(\langle w_e, agent(e), goal(e)\rangle)$ returns Mary.

At the same time, by the presupposition on $\text{PRO}_{[\text{VOL}]}$ in (78), $[\![G_2]\!]^g(\text{Mary})$ is f_{vol}, hence $[\![G_2]\!]^g(\text{Mary})(\langle w_e, agent(e), goal(e)\rangle)$ is $agent(e)$. It follows that Mary must be $agent(e)$. However, $agent(e)$ is in fact John in both (76-a) and (76-b)! Therefore (76-b) is ruled out. More formally,

(77) Assume an acquaintance-based concept generator G for e as defined in (58).

a. Suppose $G(z) = f_{vol}$

b. Assume for any $\langle w, x, y\rangle$, $f_{vol}(\langle w, x, y\rangle) = x$ (=(78-b))

c. By (77-a) & (77-b), for any z, $G(z)(\langle w_e, agent(e), goal(e)\rangle) = agent(e)$

d. By (58-b-ii), for any z, $G(z)(\langle w_e, agent(e), goal(e)\rangle) = z$

e. Then, by (77-c) & (77-d), for any $z, z = agent(e)$.

(78) a. If $g(i)(g(j)) = f_{vol}$, $[\![[_{\text{PRO}_{[\text{VOL}]}}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined.

b. $f_{vol} = \lambda\,\langle w, x, y\rangle\,.x$

5.6 Predictions and remarks

5.6.1 Locality

Most instances of *de re* and *de se* attitudes must be attributed to the local attitude holder. This includes Obligatory Control PRO, which cannot be controlled long-distance. Put differently, in stacked attitude contexts, the *de re/de se* attitude introduced by an expression in a more deeply embedded clause must be connected to the predicate selecting the clause and an attitude holder associated with it, rather than to a higher attitude holder.

The potential for overgeneration is a well-known problem of aproaches that take concept generators to be variables in the syntax: As Santorio (2014) points out, nothing more being said, we cannot explain the apparent unavailability of a reading created by long-distance binding of the concept generator associated with Ortcutt (79-b).

(79) a. Ralph believes that Ramona believes that Ortcutt is a fly guy.

b. LF: *Ralph believes that [λG_1. G_1(Ramona) believes that [λG_2. $\mathbf{G_1}$(Ortcutt) is a fly guy]]

The truth conditions of (79-b) under the assumed co-indexing, as paraphrased by Santorio, are roughly that *Ralph believes that Ramona believes that some individual that Ramona thinks about under the acquaintance relation that Ralph uses to think of Ortcutt is a fly guy.* That this is not an attested reading is indicated by the fact that the sentence is perceived as false in a scenario satisfying these truth conditions such as (80).

(80) *Ortcutt and Shortcutt.* Ralph and Ramona see Ortcutt perform. Ralph is impressed and says "That guy is a fly guy"; Ramona is unimpressed and says "That guy is not a fly guy". Ralph also thinks that Ortcutt, who is exceptionally short, is the shortest fusion drummer that they have ever seen. Ramona disagrees: "You're wrong. *Shortcutt* is the shortest fusion drummer we've ever seen, and he, differently from that guy, is fly." (Santorio 2014)

The same point can be made for jussive subjects and their controllers. Consider the Mongolian equivalent of example (81), where the imperative subject (by way of x_4) is bound long-distance by the matrix goal Mary, and the connected G_2 is bound long-distance by JUSSIVE^2 in the higher clause. The proposed indexing would yield the following reading: *John told Mary that he would tell Bob that he (John) wants the matrix agent's (John's)* tu, *i.e., Mary(!), to leave.* A corresponding reading is unavailable in Mongolian.

(81) John$_1$ told Mary$_4$ [JUSSIVE^2 [PRO$_{[\text{VOL}]}$ G_2 x_1] tell-VOL Bob [JUSSIVE^3 [PRO$_{[\text{IMP}]}$ $\mathbf{G_2}$ x_4)] leave-IMP]]

I am agnostic about the grammaticality of corresponding jussive constructions in Korean. There is, however, evidence that Korean PRO clauses marked with *keyss*, whose meaning closely resembles that of voluntatives, do indeed disallow long-distance binding. This is shown by Madigan's (2008:111) example (82).

(82) Inho$_1$-ka Jwuhi$_2$-ka PRO$_{2+/*1+}$ yeses-si-ey moi-keyss-ta-ko
Inho-NOM Jwuhi-NOM PRO six-hour-at gather-VOL-DECL-C
yaksok-ha-yess-ta-ko sayngak-ha-yess-ta.
promise-do-PST-DECL-C think-do-PST-DECL
'Inho$_1$ thought that Jwuhi$_2$ promised PRO$_{2+/*1+}$ to gather at 6.'

Locality does not fall out naturally under my current analysis. For now, an extra condition requiring concept generator variables to be bound by the closest abstractor would do the trick.[28] Santorio (2014) capitalizes on this shortcoming of

[28]One may wonder if the locality of Control falls out independently from binding requirements of

syntactic approaches à la P&S (2003a); his proposal to handle concept generators by way of an additional assignment parameter on the evaluation function seems to draw much of its motivation and appeal from its capacity to circumvent this problem.

5.6.2 Accounting for different modes of presentation

I analyzed *de se* as a special instance of *de re* assuming a P&S style account of *de re* attitudes. The problem addressed in this section concerns *de re* reports in finite complements. As so far, my discussion of predicates as sets of events has been limited to non-finite complementation, this requires me to say a few words about the application of an event view to finite complements. Maintaining the assumption that attitudes are introduced in the complement, I take the complementizer *that* to function the way attitude predicates do in P&S's original account (or *want* in (28)), and view *that* as an existential quantifier over concept generators. Its meaning is assumed to be regulated by a syncategorematic entry (83), which is modeled after the interpretation rule for JUSSIVE introduced earlier.

(83) $[\![\text{that}^i\ \phi]\!]^{c,g} = \lambda e.\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for e &
(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &
(iii) $\mathcal{F}_{cont}(e) = [\![\phi]\!]^{g^{i\to G}}_{¢}$

However, this entry is characterized by a certain shortcoming in the analysis of *de re* attitudes: It is not sensitive to the choice of lexical item that the actual speaker uses for a *de re* description of an individual that is the subject of someone's attitude.

To give an example, in using (83), my account attaches the same truth conditions to all three variants of the sentence in (84) regardless of the form of the embedded subject, which may be *Leonard Bernstein*, or a free pronoun *he* that maps to Leonard Bernstein (imagine the speaker pointing at Leonard Bernstein), or a definite description *the composer of West Side Story.*

(84) Context: *Sue sees Leonard Bernstein conduct a concert on TV but mistakes him for Herbert von Karajan.*
Sue believes that[5] [G_5 *Leonard Bernstein/he*$_2$*/the composer of West Side*

pronouns in cases where they are used to spell out PRO in Korean. This does not seem to be the case: Apart from the fact that overt realization of PRO is never obligatory, relevant items are not actually subject to locality; *caki*, for example, can be a long-distance reflexive in non-PRO position, but must be bound locally when surfacing as a PRO subject. Indexical pronouns, which also occur in PRO postion, similarly do not require local binding outside PRO clauses.

Story] is a world-famous German conductor.

While this equivalence is innocent in the above case, my account fails to distinguish certain readings in other cases and may even lead to the attribution of inconsistent beliefs. Let me illustrate this:

Sometimes instances of *e*-type expressions that occur in the same clause and denote the same individual can map to different acquaintance relations. This can be two instances of the same lexical item as in (85-a) (from Percus & Sauerland 2003b), or two different lexical items with the same extension, as in (88). Recall that we have encountered such "multiguise" readings before, in particular, in the context of Charlow & Sharvit's (2014) claim that they are critical as an argument for P&S's analysis, against competing approaches to *de re*.

(85) Context: *John, who has a granddaughter named Liz, dreams he is Elvis.*
  a. John dreamed that *his* granddaughter was marrying *him*.
  b. Paraphrase: *In John's dream, Liz marries Elvis, who is John's dream-self.*

My account, where $that^i$ introduces only one binder over concept generators as shown in the LF (86), cannot yet derive this reading: To capture the targeted reading, the variable he/his_2 needs to be mapped to two different acquaintance relations, the relation the attitude holder (or his alternatives) bears to the constant John (87-a) (for he_2) and the reflexive relation, which holds between the attitude holder (or his alternatives) and himself (87-b) (for his_2). (Note that in the adopted account, each DP in attitude contexts is accompanied by a G variable. Therefore, simply omitting the first G in (86) is not an option.)

(86) John_2 dreamed that^5 $[G_5\ his_2]$ granddaughter was marrying $[G_5\ him_2]$.

(87) a. $\lambda\langle w, x\rangle . \text{John}$
  b. $\lambda\langle w, x\rangle . x$ (= *self*-relation)

Santorio (2014) illustrates the same problem by way of example (88).

(88) a. Scenario: *Ralph is acquainted with Ortcutt under two guises, as the mayor and as a virtuoso fusion drummer. When appearing as a drummer, Ortcutt goes under the pseudonym 'Tuc Trot'. Ralph is not aware that the mayor and the virtuoso fusion drummer are the same person.*
  b. Ralph thinks that Ortcutt is not Tuc Trot.

The desired reading makes reference to two different acquaintance relations, shown in

(90). However, as yet the only LF I can generate is (89), where both G are bound by the only binder available, *that*$_4$. Since a given concept generator maps an individual *uniquely* to an acquaintance relation, and *Ortcutt* and *Tuc Trot* do denote the same individual, Ortcutt and Tuc Trot can either both be mapped to (88) or to (90-b) – in the context of the sentence either option leads to the attribution of inconsistent beliefs to Ralph.

(89) Ralph thinks that^4 [G_4 Ortcutt] is not [G_4 Tuc Trot].

(90) a. $\lambda \langle w, x \rangle$. the mayor in w
b. $\lambda \langle w, x \rangle$. the virtuouso fusion drummer in w

Recall that this problem, however, can be overcome in a rather straightfoward way suggested by Charlow & Sharvit (2014): We need to allow for attitude verbs to quantify over *sequences* of concept generators using a type-flexible semantics for attitude verbs (provided in (43)).

Note that Santorio's (2014) framework, on the other hand, has been designed with the presence of multiple guises in mind: Given that Santorio assumes concept generator variables to receive their values from a dedicated, elevated assignment, in multiguise scenarios the e-type expressions are simply assigned distinct elevated indices.

To resolve the issue in the context of an event semantics, we have to extend the meaning of *that*^{i} along the lines of Charlow & Sharvit's semantics for *believe*. I leave the task of working out the technical details of this solution for future work.

5.6.3 Restrictions on overt PRO

As demonstrated in section 5.5.3, by using concept generators in conjunction with a presupposition on the acquaintance relation associated with PRO, we are able to derive Obligatory Control of the right type – provided the presupposition contributed by PRO is specific enough. As a result, we can confirm (76-a), and rule out (76-b) as ungrammatical. However, a well-formed LF does not entail a well-formed PF. Let me review some of the lexical restrictions on PRO in the target languages and beyond.

As we know, a large number of languages does not allow for phonological realization of PRO in canonical PRO constructions. Moreover, we saw that languages may limit the option of spelling out jussive PRO as well, Mongolian being one example. Last but not least, even in Korean the range of permitted jussive subjects is only a subset of the set of DPs coreferent with the controller; for example, Korean does not allow for examples along the lines of (91), where the controller DP is repeated

to spell out PRO. It is obvious that something else needs to be said to account for the attested range of realizations of PRO.

(91) John told Mary [[$\text{PRO}_{[\text{PROM}]}$ G_2 (*John)] leave-PROM]

(91) with *John* as a subject might be relatively easy to rule out once we take it for granted that only variables allow for *de se* readings and that R-expressions like *John* cannot function as variables. In other words, (91) might be bad for the same reason that explains the unavailability of a *de se* reading for (92).

(92) Context: *John to Mary: "I want to leave."*
??John told Mary that John wanted to leave.

As for the absence of overt jussive subjects in Mongolian in general, a simple and descriptively adequate solution would be to associate any flavor of Mongolian jussive PRO with the null output, see (93-a); of course, this would leave open the question as to what underlies the difference between Mongolian and Korean PRO. In a sense, I have started walking down a lexical route already in account of Korean overt PRO in jussives: Recall that I explicitly associate Korean PRO with overt pronouns, cf. (93-b); full DPs are not included as a possible spell-outs.

(93) a. Mongolian: $[_{[\text{VOL/IMP}]}\ G\ \alpha\ ] \rightarrow \varnothing$
b. Korean: $[_{[\text{PROM/IMP/EXH}]}\ G\ \alpha\ ] \rightarrow \{$[overt pronoun with features of α], $\varnothing\}$

To derive the restrictions observed in languages like English, where PRO is always covert, we may invoke a general condition that disallows overt subjects in non-finite clauses.

5.6.4 Korean jussive PRO: a refinement

The presence of jussive features on PRO can be exploited to encode a possibly dialectal restriction on Korean overt PRO reported by Park (2018) and mentioned in section 4.3.4: Park notes that the 3PS anaphor *caki* can realize jussive PRO (provided PRO also bears a [3PS] feature) in Subject though not in Object Control constructions. In jussive terminology, this means that *caki* can be the subject of voluntative but not of imperative clauses in Park's (2018) dialect. (Madigan (2008) and Park (2011) do not have this restriction.)

The representations I assume to underlie jussive PRO offer a convenient way of encoding this constraint: Corresponding dialects may be taken to distinguish between

full pronouns on the one hand, and anaphors such as *caki* on the other in the spell-out of jussive PRO. While regular pronouns (as opposed to anaphors) can be inserted for any type of PRO (VOL/IMP/EXH) given agreement in ϕ-features, cf. (94-a), there would be a separate entry for voluntative [3PS] PRO, (94-b), which allows the output to be either an agreeing pronoun or an agreeing anaphor, thus including anaphors such as *caki*. (The addition of [3PS] is necessary to capture the unavailability of *caki* as a lexicalization of $\text{PRO}_{[\text{VOL}]}$ marked with [1/2PS].) The principle of selecting the most specific entry ensures that (94-b) is chosen over its competitor (94-a) in the case of $\text{PRO}_{[\text{PROM}][3\text{PS}]}$.[29]

(94) a. $[_{[\text{PROM}]/[\text{IMP}]/[\text{EXH}]}\ G\ \alpha\ ] \rightarrow \{$[overt pronoun with features of α], $\varnothing\}$
b. $[_{[\text{PROM}]}\ G\ [3\text{PS}]\ ] \rightarrow \{$[overt pronoun or anaphor with [3PS] feature], $\varnothing\}$

5.7 Motivating a Neo-Davidsonian approach to jussive reports

The analysis offered in this work exploits a Neo-Davidsonian framework, see e.g. Parsons (1990) and Lasersohn (1995): Predicates denote sets of events. Arguments are "severed" from the predicate and introduced by separate functional heads that denote thematic roles, such as AGENT or GOAL. A thematic head AGENT, for example, is assumed to have the following denotation; mutatatis mutandis for other thematic roles.

(95) $[\![\text{AGENT}]\!]_{\langle vt,\langle e,vt\rangle\rangle} = \lambda f_{\langle vt\rangle}.\lambda x.\lambda e.\ agent_{(}e) = x\ \&\ f(e)$[30]

[29]Interestingly, the long-distance reflexive *caki* only accepts subject antecedents even in dialects that accept *caki* controlled by object DPs; for example, *caki* used as a long-distance anaphor in (i) does not permit an object antecedent in either dialect. This divergence between uses as a subject of jussives versus all other uses could be construed as an argument in favor of the two being underlyingly different phenomena, in line with a PRO analysis and against a view of jussive subjects as bound pronouns.

(i) Chelswu$_1$-ka Yengswu$_2$-eykey caki$_{1/*2}$-ka kong-ul tenci-ess-ta-ko
Chelswu-NOM Yenswu-DAT self-NOM ball-ACC hit-PST-DECL-that
mal-ha-yess-ta.
tell-do-PST-DECL.
'Chelswu$_1$ told Yengswu$_2$ that he$_{1/*2}$ hit the ball.' (Madigan 2008:242)

[30]Recall that I take meta-language *agent*, *goal* etc. to be functions $\langle ve\rangle$. For example,

Clausal complements denote the content $\mathcal{F}_{cont}$ of an event, and are selected by a functional head in the embedded clause such as *that* or, in the case of jussives, the JUSSIVE modal. Embedded clauses are of type $\langle vt \rangle$ and compose with the matrix predicate in the same fashion as matrix DP arguments, to wit, via predicate modification.

On the one hand, my approach contrasts with a Hintikkan semantics of attitudes in that attitudes are designated by a functional head in the embedded clause, rather than by the embedding verb. (I.e., it is the clausal head by means of the JUSSIVE modal that introduces the desire attitude denoted by a jussive clause, and not the jussive embedding predicate *say, promise*, etc.) This assumption is, of course, necessary in a Neo-Davidsonian framework.

However, we might ask whether there are any reasons for adopting a Neo-Davidsonian semantics in the first place, rather than a standard selectional semantics, in which the matrix predicate itself introduces the propositional complement.[31] I do not claim that my analysis is technically necessary. However, I argue that a Neo-Davidsonian semantics is theoretically preferable in that it reflects more aptly the semantics of jussive embedding in languages like Korean, where jussive embedding is not confined to unmarked speech predicates like *say*: As shown in section (27), Korean promissives also occur under *promise*, and imperatives can be embedded under *order* and *require*, among others, beside *say*. Importantly, though, the meaning of Korean promissives under *yaksok-ha*, lit. 'promise-do', for example, is not captured if we assign to the embedding verb the semantics of English *promise*, given my analysis of jussives as desire statements: To wit, (96) does not mean that "the mother promises the child that she wants to go to the park".

(96) Eme-nim-kkeyse ai-eykey [kongwen-ey ka-ma-ko]
mother-HON-NOM child-DAT park-LOC go-PROM-C
yaksok-ha-si-yess-ta.
promise-do-HON-PST-DECL
'The mother$_i$ promised the child PRO$_{i(+)}$ to go to the park.'

Rather than a promise of having a particular desire, such a sentence seems to denote

(i) $agent_{\langle ve \rangle} = \lambda e.\iota x : x$ is the agent of e

[31]Note that as long as attitudes are encoded in the complement, a non-Davidsonian entry such as (i) would be equally successful in capturing the various uses of verbs like *say*, which allow for both attitude complements (potentially of various types) and non-attitude complements.

(i) $[\![\text{say}^i\ \phi]\!]^{c,g} = \lambda x.\exists G$ for x s.t. x made an utterance in world(c) whose content is $[\![\phi]\!]^{g^{i \to G}}$

a simple speech event whose content is a desire statement. However, to distinguish *promise* from unmarked *mal-ha* 'say(-do)', I tentatively suggest that Korean *yaksok-ha* 'promise' incorporates the meaning of *say* along with an additional semantic component modifying the meaning of *say*. Though I am agnostic as to the exact nature of this additional component contributed by *promise*, for the sake of the argument, let us assume that Korean *promise* adds to the meaning of *say* that the speaker, *agent*(e), *takes on a commitment.*

Note that Korean *promise* consists of a nominal expression *yaksok* 'promise, appointment' and a light verb *ha* 'do'. The proposed semantic components can thus be taken to have syntactic counterparts. I propose a decompositional analysis along the following lines.[32] (I assume that *ha*, when combined with certain nouns such as *yaksok*, denotes an act of speaking, along the lines of *say*, rather than a simple action *do*.[33])

(97) $$\left[\!\!\left[\begin{array}{c} \mathrm{V}_{\langle vt \rangle} \\ \mathrm{N}_{\langle vt \rangle} \quad \mathrm{V}_{\langle vt \rangle} \\ | \qquad\quad | \\ \text{yaksok} \quad \text{ha} \end{array} \right]\!\!\right] = \lambda e.\ [\![\text{ha}]\!](\text{e})\ \&\ [\![\text{yaksok}]\!](e) = \lambda e\text{: } e \text{ has an } \textit{agent}.\ \text{say}(e)\ \&\ \textit{agent(e)} \text{ takes on a commitment}$$

Assuming that a description of the contribution of nominals in light verb constructions as instances of modification is appropriate, a Neo-Davidsonian framework allows for modification much more transparently than alternative views; note that in an approach that assigns to speech predicates selectional properties, we would need to resort to additional mechanisms such as Chung & Ladusaw's (2003) *predicate restriction* to allow for modification of the above type.

5.8 The problem of identifying jussive embedding environments

Only a small set of predicates has been found to embed jussives in Korean and Mongolian, with the class of jussive embedding predicates being slightly larger in Korean than in Mongolian: While in Mongolian, *say* accounts for the vast majority of instances of jussive embedding, Korean jussives are also featured under the verbs 'promise', 'order', 'persuade', 'propose', a.o, though most of them are limited to

[32]Thanks to Martin Hackl, p.c., for stimulating discussion and help spelling out this idea.

[33]Of course, this raises the question as to what the contribution of *ha* is in the case of *mal-ha* 'speech-do, say'.

embedding one type of jussive (i.e., promissive, imperative, or exhortative).[34], This poses the question as to what determines whether a predicate is able to embed jussives? Note that this question is not specific to the languages investigated in this work and similarly arises for other languages that have been found to permit embedded imperatives.

Given that JUSSIVE as proposed in my analysis comes with certain presuppositions on the events it denotes, the unavailability of jussives under certain predicates such as *believe*, *regret*, *realize* could be viewed as a consequence of presupposition failure due to the lack of a goal argument. However, other CP-embedding predicates such as *explain*, *write to* do supply a goal argument, and yet are incompatible with jussive complements.

Stegovec & Kaufmann (2015) addresses the limited distribution of embedded imperatives in Slovenian adopting Kaufmann's (2012) approach: Kaufmann (2012) observes that imperatives can only be used felicitously in contexts that result in performative uses of a modal verb; she implements this restriction in terms of presuppositions triggered by the imperative. Though an analysis along these lines is sure to eliminate certain environments from the list of candidates for jussive embedding, it does not seem to provide a complete account of the observed distribution: On the one hand, there are hard-to-explain differences between languages; consider, for example, the fact that the verb for 'promise' selects for promissive/voluntative complements in Korean but not in Mongolian.[35] On the other hand, also within a language there is variation that seems to defy purely semantic or pragmatic explanations: For example, it is hard to come up with a reason that explains why *say* but not *write to* can select for jussive complements. This suggests that only by adding certain lexical stipulations we will be able to achieve descriptive adequacy regarding the distribution of embedded jussives. The question where to encode such restrictions – in the entries for verbs or in the entry for JUSSIVE – would then seem especially relevant in my account, which attributes more power to the PRO clause (by letting it impose presuppositions on the matrix event and, crucially, decide controller choice) than standard accounts. For now, I remain agnostic as to the right response to this question.

[34]As mentioned before, I do not, however, claim that the list of jussive embedding predicates cited in this work is exhaustive.

[35]Of course, for this argument to be complete, we would ultimately have to show that promissive and voluntative carry comparable sets of presuppositions and, moreover, that the verb 'promise' is similar in all relevant respects in the two languages.

5.9 Unembedded jussives

My analysis has been developed as an analysis of embedded jussives, however, as I argue, it can be used to inform our understanding of unembedded jussives as well. The section at hand explores this idea and shows how my analysis can be enhanced to also yield an account of root occurrences of jussives.

Recall that in my analysis, jussive phrases JussP – which in embedded contexts are wrapped in a semantically empty CP – constitute properties of events $\langle vt \rangle$. In embedded contexts, jussive clauses compose with the speech predicate of which they are a complement via predicate modification, yielding a modified set of events. This set of events is subject to the same subsequent mechanism as other declarative clauses, which I take to involve existential closure at the Aspect level.

I have not addressed the question as to what happens if a jussive clause stands in a matrix environment. I suggest to exploit a line of thought found in Speas & Tenny (2003), Hacquard (2006), Miyagwa (2017), Baker (2017), a.o., and propose that a speech event is represented syntactically via an event pronoun e^* at the root of a sentence.[36] The speech event pronoun e^* has the crucial function of saturating the open event argument of unembedded jussives.[37]

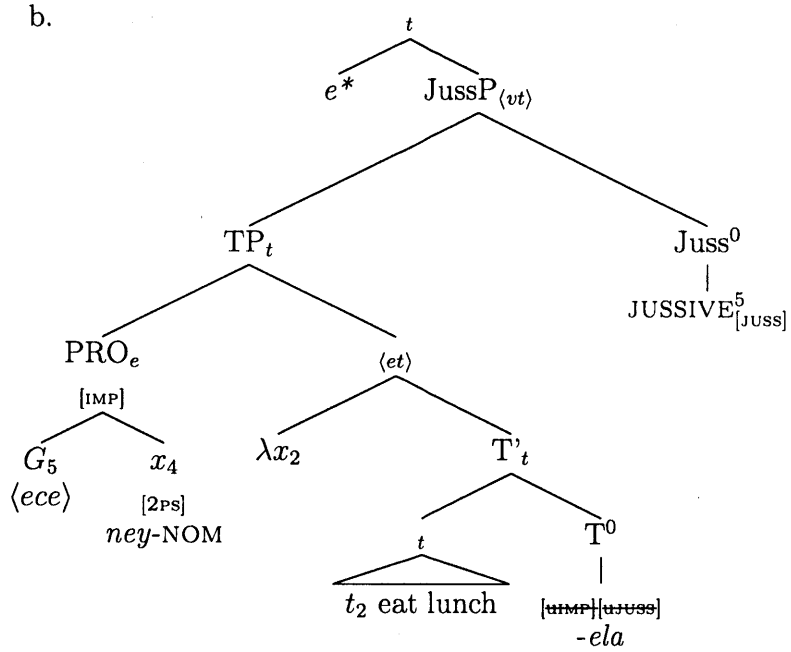
The remaining structure is identical to the structure of embedded jussives. A representative LF of a Korean matrix imperative is provided in (98-b).

(98) a. Ney-ka cemsim-ul mek-ela.
you.SG-NOM lunch-ACC eat-IMP
'Eat lunch!'

[36]Note that these authors associate speech events with their own syntactic projection, which also contains representations of the discourse participants. The assumption of a speech act projection has been motivated by pragmatic and discourse phenomena with morphosyntactic reflexes such as evidentiality, allocutive agreement, indexical shift, among others. In many implementations, the head of the speech act projection is assigned a clause-typing function: Depending on the assumed typology of sentences, it may mark a clause as one of several sentence types, such as declarative, interrogative, jussive, a.o. In Hacquard (2006), illocutionary force is provided by the speech event pronoun e^*. I do not commit myself to any specific assumptions regarding the clause-typing role of e^*. Morevover, I remain agnostic as to the existence of a full-fledged speech act phrase, and the range of processes it may be involved in.

[37]Cf. Hacquard (2006:144f.) for a similar assumption of a default speech event e^*, which binds free event variables in its scope.

b.



Analogous to embedded jussives, complex PRO contains a concept generator variable G, which is bound by the JUSSIVE modal, as well as a variable of type e. This individual variable is left free in matrix jussives, unlike in embedded cases, where it is bound by the controller DP. Crucially, my semantics, by virtue of the feature on PRO, ensures the right reference for this variable: The same mechanism that allows embedded PRO to determine its controller forces the free variable inside matrix PRO to refer to the speaker in voluntatives and promissives, to the hearer in imperatives, and to the unit of hearer and speaker in exhortatives; any other way of resolving its reference woud lead to a contradiction.

This is illustrated below for the imperative in (98-b): The definition of a concept generator G for e^* requires that the agent(e^*) stand in the acquaintance relation $G(g(4))$ to $g(4)$ in w_{e^*} (see first box). Moreover, the presupposition on $\text{PRO}_{[\text{IMP}]}$ presupposes that G map its free variable sister to f_{imp} (see second box). Taken together, the two equations yield that $g(4)$ is *goal(e*)*, i.e., the addressee of the jussive utterance.

Recall that Korean matrix jussives, similar to embedded jussives, allow for PRO to be overt. In such cases, the free variable and its features predictably surface as a 1PS pronoun in promissives and exhortatives, and as a 2PS pronoun in imperatives.

(99) $[\![(98\text{-b})]\!]^{c,g} = 1$ iff e^* has an *agent*, a *goal*, and a *content* of type $\langle ct \rangle$.

$\exists G$ s.t. G is an acquaintance-based concept-generator for e^*

$(\Rightarrow \boxed{G(g(4))(\langle w_{e^*}, agent(e^*), goal(e^*)\rangle) = g(4)})$

& $\boxed{G(g(4)(\langle w_{e^*}, agent(e^*), goal(e^*)\rangle = goal(e^*)}$

(by presupposition on $\text{PRO}_{[\text{IMP}]}$ that $G(g(4)) = f_{imp}$)

& $\mathcal{F}_{cont}(e^*) = \lambda\langle w, x\rangle.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow [\![\text{TP}]\!]_{¢}^{g^5 \to G}(\langle w', x', y'\rangle)]$

$= 1$ iff $\mathcal{F}_{cont}(e^*) = \lambda\langle w, x\rangle.\forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world$(c) \Rightarrow y'$ eats lunch in w'

Regarding the presupposition contributed by JUSSIVE, part of it is straightforwardly satisfied given the nature of speech events: Any speech event e^* has an *agent* – the actual speaker, and *content* – in the case of jussives, the proposition expressed by JussP. Moreover, assuming that a jussive can be felicitously directed at oneself, in such contexts the speaker would satisfy the *goal* and *agent* presuppositions simultaneously. Though I am ignorant as to the actual distribution and felicity of self-directed jussives in Korean and Mongolian, note that my theory predicts the different jussive forms to be subject to free variation in such contexts: As the agent and goal would both map to the speaker, the various forms would be identical in meaning.

The semantics provided above raises one obvious question: It is no different from the type of meaning assigned to declaratives and could be read as an assertion *that the content of my speech act is that I want you to eat lunch.* In other words, the derived semantics and illocutionary force resembles that of descriptive modal statements and falls short of accounting for the necessarily performative nature of imperatives. The following chapter addresses this shortcoming: Following Kaufmann (2012), I enhance the semantics of the JUSSIVE modal by a set of presuppositions whose role is to limit jussives to performative uses.

Before closing this section, let me briefly address the role of e^* outside jussives, specifically, in declarative sentences[38]: I take event predicates in declarative clauses to be closed existentially on the level of AspP, located between vP and TP. In contrast to matrix jussives, declaratives hence do not have an open argument slot for e^* to fill. I remain agnostic as to any other functionse^* may have in the semantic derivation of declaratives.

[38]Discussion of other clause types such as interrogatives is outside the scope of my work.

5.10 Conclusion

The first part of this chapter was devoted to an analysis of the jussive subject in Mongolian and Korean, which I took to be a version of PRO. Recall that my objective was to account, above all, for three facts about jussive subjects observed in embedded environments: (i) Embedded jussive subjects have an antecedent in the higher clause, whose identity, defined in terms of its thematic role, is relative to the form of the embedded jussive. (ii) Jussive subjects are interpreted *de se*. (iii) Jussive subjects exhibit ϕ-features in Korean, where they can be overt.

My analysis of PRO is a take on Percus & Sauerland's (2003) analysis of *de re* DPs in attitude contexts and adopts the idea found in Anand (2006), Santorio (2014) of analyzing *de se* as a special case of *de re*. In P&S account, DPs in attitude contexts are always accompanied by a concept-generator variable G (of type $\langle e, ce \rangle$ in my implementation), which maps individuals onto acquaintance relations. The semantics of attitude verbs is adjusted correspondingly, and attitude verbs are viewed as existential quantifiers over concept generators G. In section 5.2.1 I reviewed these assumptions including the definition of concept generators and showed how they successfully account for *de re* readings in belief reports.

Given this background, section 5.2.2 turned to the derivation of *de se* attitudes as a special instance within the general domain of *de re* attitudes. I assimilated the jussive subject to standard PRO and overt *de se* pronouns as analyzed in Anand (2006) and Santorio (2014): All of them were assumed to consist of an individual variable x along with a concept generator variable G. Addressing property (iii) as well as part of property (i) above, I took x inside PRO to be bound by a DP – its "controller" – in the matrix clause. Like regular pronouns, x carries ϕ-features and agrees in those features with its matrix binder. I showed how *de se* on PRO (as on other pronouns) can be derived via a presupposition on $G(x)$: $G(x)$ must map to the *self*-acquaintance relation holding between a centered world and its individual center.

In section 5.3 I added context to jussive PRO: I introduced the JUSSIVE modal as the carrier of jussive semantics, along with the idea that the same modal (and hence modality) is present in all jussive subtypes. The first task confronted in this section was caused by my view that attitude and speech predicates are sets of events, and that attitudes are introduced inside the complement clause as the content of these events: A reduction of attitude predicates to sets of events required reformulating P&S's concept generators from concept generators for individuals to concept generators for events. I showed what such a reformulation may look like.

The subsequent discussion centered on the JUSSIVE modal as the silent modal

operator that provides all jussives with their illocutionary force. JUSSIVE takes the role canonically assigned to attitude verbs. Fitted into P&S's framework, this means that JUSSIVE is an existential quantifier over concept generators and also introduces the "jussive" attitude – which I take to be bouletic.

The difference between the jussive subtypes – voluntatives (or promissives in Korean), imperatives, and (in Korean) exhortatives, I claimed, is limited to a difference in features on PRO: Different features presuppose subtly different acquaintance relations as the value of $G(x)$, which ultimately translates to different Control relations: Subject (speaker), Object (hearer) or Split (speaker $\oplus$ hearer) Control. Section 5.4 outlined the three different flavors of jussive PRO needed to derive this variation.

A full derivation of an imperative report in section 5.5.1 was followed by a demonstration in section 5.5.3 of how the presupposition on jussive PRO leads to Control being of the right type.

Finally I turned to the question of matrix jussives. To reconcile the proposed analysis with matrix jussives, I argued for the presence of a speech act projection SaP at the root of the sentence with the following make-up: Silent SP* and HR* arguments represent the discourse participants, and an event pronoun e^* stands for the utterance event. The event pronoun e^*, I suggested, saturates the open event predicate denoted by the jussive clause; SP* or HR*, moreover, fulfills the function of the controller and binds the variable inside PRO.

Chapter 6

Refining the modal analysis of jussives

6.1 Introduction

Jussives are performative speech acts: Intuitively, by uttering a jussive, the speaker changes what the world (or, on a narrower level, the utterance context) is like. A complete theory of jussives thus cannot stop at a denotational semantics for jussives: It also needs to specify how this denotation is used to update the context (see von Fintel & Iatridou 2017 for a concise summary of the desiderata involved in analyzing imperatives). Different theories of imperatives vary primarily in the assumed division of labor between semantics and pragmatics: How much of the meaning and performative function of imperatives is encoded semantically, and how much of it is derived in the pragmatic component?

Two major lines of approaches can be distinguished: In "semantic" approaches, the meaning and force of imperatives is largely a product of their denotation. Schwager (2006); Kaufmann (2012), representing this line of inquiry, derives the specific force of imperatives from a covert modal whose presuppositions ensure a performative use of imperative clauses. In "pragmatic" approaches, on the other hand (cf. Portner 2004, 2007), imperatives are assigned a rather minimal denotation and obtain their distinguishing force from the specific type of contextual update they perform: Imperatives update the *To-Do-List* of the addressee, while other speech acts update other discourse components.

As laid out in previous chapters, I opt for a modal analysis of imperatives and other jussive forms in Mongolian and Korean, in line with Kaufmann: Jussive force is associated with a covert modal JUSSIVE, which is uniformly present across jussive

clauses. My choice was determined, to a large extent, by the fact that a modal approach seems better fit to deal with embedded occurrences of imperatives than an alternative pragmatic approach. Crnič & Trinh (2009) and Stegovec & Kaufmann (2015) demonstrate the compatibility of a modal analysis with embedded imperatives in English and Slovenian, respectively.

Note that the semantic treatment given to jussives in the preceding chapter, so far, fails to encode their performativity: In my analysis, jussive clauses merely make an assertion about the jussive speaker's desire state. In the chapter at hand, I confront this shortcoming and attempt to enhance the semantics of the JUSSIVE modal with the ingredients necessary to derive the performative effect of both matrix and embedded jussives. Following Crnič & Trinh (2009) and Stegovec & Kaufmann (2015), I adopt the approach developed in Schwager (2006); Kaufmann (2012), who ties the performativity of jussives to a set of presuppositions introduced by the covert modal.

My analysis relies, to a large extent, on the properties characterizing prototypical imperatives across languages. Though I do address a few data points regarding Mongolian voluntatives, in general, the elicited data is insufficient to draw detailed conclusions about the nature of the modality and force associated with Mongolian jussives. Moreover, addressing the details of Korean jussive modality would exceed the scope of this work. Hence, my focus will mainly be on outlining the predictions as well as the limitations of a presuppositional approach to jussive force when combined with my analysis.

Recall that I assume imperatives and other jussive forms to involve a uniform modal JUSSIVE. A crucial challenge will therefore be to phrase the presuppositions carried by JUSSIVE in a way that would be suitable for both voluntatives and imperatives.

I conclude this chapter with a review of an alternative, pragmatic approach to imperatives as offered by Portner (2004, 2007). After outlining the central properties of Portner's analysis, I address the problems his view faces in the analysis of embedded occurrences of imperatives.

6.2 Some background on a modal analysis of imperatives (Schwager 2006, Kaufmann 2012)

Schwager (2006); Kaufmann (2012) compares imperatives to priority modals used performatively. Formalizing this idea, she assumes that all imperative clauses are characterized by the presence of a covert modal operator OP_{Imp}, which contributes

the specific force of imperatives. As imperatives typically express directives, Kaufmann suggests that, among modal expressions, the universal priority modals *should* and *must* most closely approximate the meaning of imperatives.

However, while modal verbs can be used descriptively as well as performatively, imperatives are limited to the latter option.

Descriptive modality is connected to assertions: Sentences containing descriptive modals describe what the world is like with respect to what is permitted or commanded (Kaufmann 2012).

(1) DESCRIPTIVE MODALITY (Kaufmann 2012: 58)

a. Peter may come tomorrow. (The hostess said it was no problem.)
b. You should do the shopping today (as far as I know).

Performative modality, on the other hand, is associated with non-assertoric utterances. Intuitively, utterances with performative modals change rather than describe what is permissible or required. (In (2) through (4) I have replaced *must* in Kaufmann's (2012: 58) original examples with *should*, which seems more amenable to a performative reading.)

(2) PERFORMATIVE MODALITY

a. Okay, you may come at 11. (Are you satisfied now?)
b. You must call me!

The analogy drawn between performative modals and imperatives is backed by certain parallels in behavior. For one, the truth value of performatively used modals and imperatives seems to be inaccessible, i.e., doesn't seem to be up for discussion.

(3) a. A: You shoud really empty the trash! B: #No, that's not true.
b. A: Empty the trash! B: #No, that's not true.

Moreover, performative modals and imperatives alike are at odds with the speaker expressing a definite belief as to whether the prejacent is true or false.

(4) a. Sam should really go to confession (#but he is not going to/ #and he will).
b. Go to confession (#but I know you won't go/ #and I know you will).

Performative modals and imperatives both seem to require the speaker to endorse the prejacent ϕ, in the sense of the speaker assenting to the proposition that *it is advisable that* ϕ.

(5) a. Sam should really call Mary (#but in fact I don't think that's advisable).
b. Call Mary! (#but I don't want you to do that).

The alternation between descriptive and performative uses of modals may be conditioned by contextual factors. Imperatives, on the other hand, seem to *only* be felicitous in contexts that would give rise to the performative reading of a modal. To account for this limitation, Kaufmann suggests that imperatives by way of OP_{Imp} come with certain presuppositions which ensure that the context is of the right type. In the next section, I present a reduced version of her presuppositional analysis and consider the modifications necessary to reconcile it with the event-based view adopted in this work.

6.3 A presuppositional analysis of the JUSSIVE modal

Syntactically embedded jussives in Mongolian are also semantically embedded: In jussive reports, jussive force is interpreted relative to the reported context rather than the actual context.

As evidence that jussive reports assert the occurrence of a performative speech act rather than forming performative speech acts of their own, recall that embedded jussives can occur in matrix questions; in fact, *wh*-dependencies between the embedded clause and a matrix question operator were used as one of the main diagnostics to ensure the syntactically embedded status of jussives. The compatibility of embedded jussives with interrogative semantics is a clear sign that the illocutionary force of embedded jussives modifies the reported context, not the actual context: Interrogative semantics was shown to be at odds with the force of voluntatives in Mongolian at the very beginning of this work, cf. (6); though I have no positive evidence, I take the same to hold for imperatives.

(6) *Bi gata togl-iy-üü?
I outside play-VOL-Y/N
Intended: 'Do I want to play outside?/ Shall I play outside?'

An adequate analysis thus needs to be able to relativize the performativity of jussives to the reported context.

As noted above, the availabla data is too sparse to allow for definite and detailed conclusions about the nature of jussive force in Mongolian. Therefore as a null hypothesis, which is consistent with the collected data, I take Mongolian imperatives to share the core properties of imperatives across languages, including the properties illustrated for English in the previous section. I discuss the presuppositions Schwager

(2006); Kaufmann (2012) develops to address these properties (also adopted by Crnič & Trinh 2009) and review ways to implement these presuppositions into my analysis of jussive clauses as sets of events. I also address the question as to what these presuppositions amount to in the context of voluntatives.

Suppose Mongolian voluntatives and imperatives are like English in that their truth value is not up for discussion and their truthfulness hence cannot be disputed (shown for English in (3)). Kaufmann (2012) captures this effect by a presupposition EPISTEMIC AUTHORITY: It is shared belief between speaker and hearer of an imperative event that the speaker has a privileged epistemic position regarding the conversational background used to interpret the imperative. In other words, it is agreed upon that whatever the speaker believes to be the conversational background *is* in fact the conversational background.

What does this condition translate to in my entry for JUSSIVE? Recall that different from Kaufmann's (2012) semantics, where the conversational background is an argument of the imperative modal, the conversational background in my analysis is lexically specified as the set of propositions corresponding to the expressed desires of the speaker, i.e., as a kind of bouletic background (cf. the underlined portion in (7)). Though in the end a fixed conversational background could well turn out to be overly simplistic, I stick with the assumption for the remainder of this work. As Kaufmann, however, points out, a bouletic background is naturally "speaker-authoritative" by virtue of describing a non-realistic attitude state of the speaker. Note that for my analysis this hence means that a corresponding presupposition becomes obsolete in the case of JUSSIVE: EPISTEMIC AUTHORITY of the speaker comes for free given the proposed denotation.

(7) $[\![\text{JUSSIVE}^i\ \phi]\!]^{c,g} = \lambda e : e$ has an *agent*, a *goal*, and a *content* of type $\langle ct \rangle$.
$\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for e &
(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &
(iii) $\mathcal{F}_{cont}(e) = \lambda\langle w, x\rangle.\ \forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is <u>compatible with the expressed desires of x in world(c)</u> $\Rightarrow [\![\phi]\!]^{g^{i\to G}}_{c}(\langle w', x', y'\rangle)$]

The fact that the speaker of an imperative must be epistemically open to both outcomes regarding the prejacent (illustrated for English in (4)) is implemented as a presupposition of EPISTEMIC UNCERTAINTY in Kaufmann (2012). Let us consider a simplified version of this presupposition, given in Stegovec & Kaufmann (2015), (8).

(8) EPISTEMIC UNCERTAINTY(c):

Given an imperative utterance 'OP_{Imp} (you) P' in context c,
before the utterance of the imperative, both $[\![P]\!]^c(A_c)$ and $\neg[\![P]\!]^c(A_c)$ are epistemic possibilities for S_c,
where S_c and A_c are speaker and addressee in context c.

What does this presupposition translate to in my entry for JUSSIVE? I propose the following semi-formal formulation. In Kaufmann's (2012) original formulation, uncertainty regarding the prejacent holds of a pre-context c' immediately preceding the utterance context c. Crnič & Trinh (2009), who constitute a precedent for a presuppositional analysis of imperatives in an event-based semantics, translate Kaufmann's pre-context to pre-*event*, i.e., the event immediately preceding the imperative event. I adapt their proposal by relativizing uncertainty to the jussive event e itself – uncertainty is taken to hold at the immediately preceding e; however, I remain agnostic as to the precise formalization of this circumstance.

(9) EPISTEMIC UNCERTAINTY(e):[1]
$[\![\text{JUSSIVE}^i\ \phi]\!]^{c,g} = \lambda e :$
$\exists\,\langle w', x', y'\rangle\ \exists\,\langle w'', x'', y''\rangle$: being x' in w' addressing y' and being x'' in w'' addressing y'' is compatible with $agent(e)$'s beliefs in $world_e$ at the time right before e & $[\![\phi]\!]^{g^{i\to G}}_{¢}(\langle w', x', y'\rangle)$ & $\neg\ [\![\phi]\!]^{g^{i\to G}}_{¢}(\langle w'', x'', y''\rangle)$. $(\ldots)$

Crucially, my version of EPISTEMIC UNCERTAINTY does not distinguish between voluntatives and imperatives. This means that I predict voluntatives to share a property typical for imperatives: By my analysis, a voluntative *Let me leave!* or *Let's leave!* is only felicitous if, before the utterance, the speaker is uncertain as to whether she or her group would leave or stay. Note that the infelicity of the following Mongolian voluntatives could be taken as preliminary evidence in favor of the prediction that EPISTEMIC UNCERTAINTY extends to voluntatives: A voluntative about becoming president (10) is infelicitous if uttered by someone under 18, as the speaker is expected to know that she cannot and won't become president at that age. Similarly, the speaker of (11) of course knows that she cannot and won't fly; her utterance is infelicitous as it violates EPISTEMIC UNCERTAINTY.

(10) Bi jurongxilogch botl-iy
I president become-VOL
'Let me become president.'
a. OK *I am an eligible candidate announcing that I will run for president.*

[1] In (9) as well as (18), I abstract away from how to achieve binding between G introduced by $\exists$ in the assertion part of JUSSIVE and G in the presupposition.

b. *#I am under 18.*

(11) #Bi nis-iy
I fly-VOL
#'Let me fly.'

Let us continue and explore the relevance of the third observation made for performative modals and imperatives in English in the previous section: (5) showed that the speaker has to be willing to affirm the prejacent for an imperative utterance to be felicitous. Note that, in my analysis, this property seems to be entailed by the desire proposition asserted by JUSSIVE ϕ. I argue that an additional presupposition encoding this restriction would therefore be redundant.

Importantly, the felicity conditions discussed above are all anchored to the agent (speaker) of the jussive event and her attitudes. In other words, they are not sensitive to the target (subject) of the jussive, which, as we know, varies across jussive forms. We can hence think of these conditions as general conditions on JUSSIVE clauses.

Do the above conditions fully capture the specific force of jussives? I would like to address two additional properties characterizing voluntatives and (directively used) imperatives.

First, the speaker of a jussive does not simply express a desire: By uttering a voluntative, the speaker seems to commit herself to the realization of the prejacent ϕ; analogously, by uttering an imperative, the speaker imposes an obligation on (i.e, seems to commit) the addressee to the realization of ϕ.

Secondly, the prejacent ϕ has to be a possible course of action for the target of the jussive. This is not the same as the prejacent being an epistemic or circumstantial possibility: An event may be epistemically and circumstantially possible but not under the control of its main participant; unaccusative predicates describe events of that kind. To illustrate, talking to a twelve-year old boy, it may be compatible with my beliefs and the circumstances that as an adult, he will be six feet tall. Moreover, addressing a friend who always plays in the lottery, it should indeed be compatible with my beliefs and the circumstances that he wins. Still corresponding directives are infelicitous: Becoming six feet tall or winning the lottery is not an action the addressee can opt to take.

(12) a. #Become six feet tall!
b. #Win the lottery!

The same two properties seem to hold for Mongolian voluntatives. While the infelicity of a voluntative about becoming president (13) in context (10-b) could be captured by EPISTEMIC UNCERTAINTY, we cannot yet explain its infelicity in scenario (13-b)

where I simply have no concrete plan to act on my proposal.

(13) Bi jurongxilogch botl-iy
I president become-VOL
'Let me become president.'
a. OK*I am an eligible candidate announcing that I will run for president.*
b. #*I have no intention to act correspondingly.*

Furthermore, the prejacent must correspond to an action the target of the voluntative can choose to realize. This is exemplified by the infelicity of (14): It is not within the power of the speaker to achieve the result of winning in the lottery.

(14) #Sugalaa khoj-iy
lottery win-VOL
#'Let me win the lottery.'

I suspect that imperatives in Mongolian are subject to the same two constraints.

Note that these constraints are not accounted for given my current semantics for JUSSIVE, which assigns to it the meaning of a bouletic modal: The bouletic modal suffix *-meer* in Mongolian as well as English *would like to* (though, interestingly, not *want*) freely combine with the propositions that were infelicitous as prejacents in the imperatives and voluntatives above, cf. (15).

(15) a. OKbi nis-meer baina
I fly-DESID COP
'I feel like flying.' (...that's how good I feel)
b. I would like to take off and fly.
c. I would like to win the lottery.

How can we capture the commitment to realize the prejacent that is imposed on the target of a jussive, and what explains the limitation of jussives to prejacents whose realization is within the power of the jussive target? To account for these properties in the context of imperatives, we can refer to a presupposition proposed in Stegovec & Kaufmann (2015): Stegovec & Kaufmann, following Kaufmann (2012), assume that imperatives in context c presuppose ADDRESSEE PRACTICALITY of c, defined in (16) and split into multiple subconditions.[2]

(16) ADDRESSEE PRACTICALITY(c):

[2]Kaufmann (2012, 2014) uses a more elaborate version of this presupposition labeled ORDERING SOURCE RESTRICTION.

(i) c is A_c-practical,
(ii) c has decisive modality[3], and
(iii) $[\![P]\!]^c(A_c)$ provides an answer to the salient decision problem for α, $\Pi^{\Delta}_{c,\alpha}$ (i.e., it eliminates at least one cell of $\Pi^{\Delta}_{c,\alpha}$).

(17) A context c is *α-practical* iff
(i) Π_c is a decision problem for α, written $\Pi^{\Delta}_{c,\alpha}$ (each cell: a future course of events that α could choose);
(ii) g_c is prioritizing (specifies rules, preferences, or goals).

Let us focus on two of the three subconditions in (16), (i) and (iii): By (i), c is practical for the target – the addressee A_c – of an imperative in c, and by (iii) the prejacent $[\![P]\!]^c(A_c)$ addresses a decision problem for A_c, in other words, (by (ii) in (17)), $[\![P]\!]^c(A_c)$ selects one action out of a set of possible actions for A_c.

The imperatives in (12) fail this presupposition in that becoming six feet tall, winning the lottery, or flying do not correspond to any future courses of events whose coming about the addressee (in principle) has control over (as required by (i)) and, hence, do not narrow down any decision problem the addressee is faced with (as required by (iii)). We thus derive the limitation to choosable actions. I argue that the same presupposition simultaneously accounts for the commitment component of imperatives; however, I postpone a demonstration of this point and provide the relevant argument below, where I discuss ways of generalizing the presuppoition to apply to both voluntatives and imperatives.

Note that the restrictions observed for English imperatives (12) and Mongolian voluntatives (10) and (14) are restrictions on the attitude or capabilities of the *target*

[3] A context c has *decisive modality* iff c is α-practical for some agent α and CS_c entails that f_c and g_c jointly characterize the modality considered relevant to resolve $\Pi^{\Delta}_{c,\alpha}$. The authors explicitly omit a definition of what it means for f and g to jointly characterize the decisive modality, but offer some conditions that are entailed by it, stated in (i) below.

(i) If f_c and g_c jointly characterize the modality considered relevant to resolve $\Pi^{\Delta}_{c,\alpha}$, this entails that
a. If α is S or A, then for any $q \in \Pi^{\Delta}_{\alpha}$, α tries to find out if $\Box^{f,g}q$.
b. If α is S or A, then α will try to realize q if α believes that $\Box^{f,g}q$.
c. If S (or A) believes that $\Box^{f,g}q$, then it is not the case that S (or A) wants that $\neg q$.

According to Stegovec & Kaufmann (2015), a context is a septuple $c = \langle S, A, w, CS, \Pi, f, g\rangle$, with S_c the speaker, A_c the addressee, w_c the world in which the context is situated, CS_c the *context set* (the set of possible worlds compatible with mutual joint belief for purposes of ongoing conversation of all actual participants, Stalnaker 1978), Π_c the *question under discussion*, represented as a possibly trivial partition of CS_c, f_c the salient modal base, and g_c the salient ordering source.

of the jussive – which is the addressee in the case of imperatives, but the speaker in the case of voluntatives. Crucially, ADDRESSEE PRACTICALITY as defined above is anchored to the addressee and its scope thus confined to imperatives. As I surmise that the infelicity of the voluntatives in (14), however, is of a similar nature as the infelicity of the English imperatives in (12), it would be desirable to weaken the presupposition and turn it into a more inclusive condition of PARTICIPANT PRACTICALITY holding for both jussive forms at the same time; a more general presupposition would also be in accordance with the underspecification of JUSSIVE regarding its target.

Let me consider such a reformulation. I propose that JUSSIVE presupposes the PARTICIPANT PRACTICALITY of the events it denotes, as defined in (18). Different from the original presupposition, however, PARTICIPANT PRACTICALITY leaves the individual subject to the decision problem open between *agent(e)* and *goal(e)*. The presupposition is split into three subconditions, which correspond, roughly, to the three subconditions of Stegovec & Kaufmann's (2015) ADDRESSEE PRACTICALITY(c) above (referenced in parentheses in (18)). Since the conversational background of JUSSIVE is lexically specified as bouletic, decisive modality (Stegovec & Kaufmann's (2015) (ii)) can be shortened to a condition that bouletic modality is suitable to resolve the decision problem ((ii) below).

(18) PARTICIPANT PRACTICALITY(e):
$[\![\text{JUSSIVE}^i\ \phi]\!]^{c,g} = \lambda e:$

(i) $\exists \Pi^{\Delta}_{e,\alpha}$ of type $\langle c, \langle ct \rangle \rangle$ s.t. $\Pi^{\Delta}_{e,\alpha}$ is a decision problem in *world*(e) for α and α is *agent(e)* or *goal(e)* (each cell: a future course of events whose coming about α (in principle) has control over), (Stegovec & Kaufmann 2015: c is A_c-practical)

(ii) f characterizes the modality relevant to resolve $\Pi^{\Delta}_{e,\alpha}$
(for any $\langle w, x, y \rangle$, $f(\langle w, x, y \rangle) := \lambda \langle w', x', y' \rangle$. being x' in w' and addressing y' is compatible with the expressed desires of x in world(c)),
(Stegovec & Kaufmann 2015: c has decisive modality)

(iii) $[\![\phi]\!]^{g^{i \to G}}_{\mathbb{c}}(\langle$*world(e), agent(e), goal(e)*$\rangle)$ is an answer to $\Pi^{\Delta}_{e,\alpha}$.
(Stegovec & Kaufmann 2015: answerhood)

The merits of subcondition (ii) in (18) can only be appreciated once we understand what it means for a conversational background to resolve a decision problem. Stegovec & Kaufmann (2015) mention several things that are entailed by this notion (see fn. 3); I focus on two of them: If α is *agent(e)* or *goal(e)*, by (19-a), α tries to find out, for any possible answer ψ to α's decision problem, if ψ is desirable, i.e., if

$\Box^f\psi$. If α believes that $\Box^f\psi$ is the case, by (19-b), α *will try to realize* ψ.

(19) If f characterizes the modality considered relevant to resolve $\Pi^{\Delta}_{e,\alpha}$, this entails that

a. If α is *agent(e)* or *goal(e)* then for any $\psi \in \Pi^{\Delta}_{\alpha}$, α tries to find out if $\Box^{f,g}\psi$.

b. If α is *agent(e)* or *goal(e)*, then α will try to realize ψ if α believes that $\Box^{f,g}\psi$.

The last part is important and explains the commitment imposed on the target of a jussive. Let me illustrate this for imperatives. I assume that, in the case of an imperative event, it is the addressee of the imperative (the *goal(e)*) who is faced with a decision problem.[4] The addressee will believe that the prejacent ϕ of the imperative is necessary (recall that the truth of the desire statement made by an imperative is not up for discussion). Hence, by (19-b), the addressee will try to realize ϕ. I propose that this captures the fact that the addressee is subjected to an obligation if an imperative is uttered.

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My proposal raises a general question: What exactly is the semantic structure of events, and how rich can we assume it to be? While it is relatively uncontroversial to associate events with participants such as *agent* and *goal*, this is less clear for my assumption that events also specify a *decision problem* (viz., a question under discussion); note that the latter is typically a property of contexts. I put this question aside as an issue to address in future work.

[4]This is a presupposition in Stegovec & Kaufmann's (2015) account (by way of (16)(ii) in conjunction with (17)(i)). As I would like to retain a general JUSSIVE semantics, I cannot set α to *goal(e)* (corresponding to the jussive addressee) in the presupposition. However, it seems that in many cases assigning to α the alternative value *agent(e)* would lead to failure of a different presupposition, namely, condition (iii) in (18), upon utterance of an imperative: Suppose the decision problem at e is whether *agent(e)* will go home or not. It seems infelicitous to utter an imperative *Go home!* – which would target the *goal(e)* – in this scenario. Can we correctly predict the infelicity? I argue that we can: An imperative *Go home!* would violate condition (18)(iii), which requires that the proposition *goal(e) go home* (the meaning computed for $[\![\phi]\!]^{g^{i\to G}}_{¢}(\langle agent(e), goal(e), world(e)\rangle)$ in the context of the imperative sentence) address the decision problem whether the speaker will go home – which it fails to do. Therefore, the presupposition is failed and *Go home!* is correctly predicted to be infelicitous in this context.

However, Irene Heim (p.c.) points out that (19) may still be too permissive: Suppose the speaker's decision problem is whether or not to invite the hearer, and he utters the imperative 'Be invited by me!'. This imperative seems infelicitous, but the above hypothesis fails to make this prediction.

6.3.1 The projection behavior of the performativity presuppositions

We have seen that sentences containing an embedded jussive clause do not constitute performative speech acts of their own, but have the properties of declarative clauses. The analysis put forward above is in accordance with this fact as long as we allow for the presuppositions on e to be locally accommodated below the existential closure operator at the root of the clause. Granted local accommodation, the presuppositions become part of the operator's nuclear scope and are asserted as properties holding of the jussive event. This is shown below.

(20) $[\![\text{Tom ordered Bill [meet Mary IMP JUSSIVE]}]\!]^{c,g} = 1$ iff
$\exists e : \underline{\text{EPISTEMIC UNCERTAINTY}(e) \ \& \ \text{PARTICIPANT PRACTICALITY}(e)} \ \&$
$\text{order}(e) \ \& \ \ldots$

Root jussives, however, are performative speech acts. The analysis developed in the preceding chapters was incomplete insofar as it was not able to derive this component and did not distinguish imperative utterances from descriptive modal statements. The presuppositions proposed in this chapter are devised to add the missing piece.

Recall that root jussives were taken to be statements about the actual utterance event. Compositionally, this involved the assumption of a covert speech act projection SaP, with one of its constituents a silent pronoun e^* representing the utterance event. e^* was taken to saturate the open argument position of JUSSIVE. Given this background, the newly introduced presuppositions will apply to the utterance event e^* and, through mediation by e^*, to the discourse participants *agent(e*)* and *goal(e*)*. Should the presuppositions be failed, the jussive will be rendered infelicitous.

(21) $[\![e^* \text{ meet Mary IMP JUSSIVE}]\!]^{c,g} = 1$ iff
$\underline{\text{EPISTEMIC UNCERTAINTY}(e^*) \ \& \ \text{PARTICIPANT PRACTICALITY}(e^*)} \ \&$
$\mathcal{F}_{cont}(e^*) = \ldots$

6.3.2 Summary

Let me summarize the conclusions reached in this section. I enhanced the semantics of JUSSIVE with two additional presuppositions EPISTEMIC UNCERTAINTY and PARTICIPANT PRACTICALITY, building on proposals in Kaufmann (2012) and Stegovec & Kaufmann (2015): By EPISTEMIC UNCERTAINTY, $[\![\phi \text{ JUSSIVE}]\!]$ presupposes that, before the jussive event, both $[\![\phi]\!]$ and $\neg[\![\phi]\!]$ are epistemic possibilities for the speaker

of the jussive. Moreover, by PARTICIPANT PRACTICALITY, roughly, the jussive prejacent must address a decision problem (a question under discussion) tied to e. On the one hand, PARTICIPANT PRACTICALITY guarantees that the jussive is about an action whose coming about can be controlled by the target of the jussive – a property that holds, for example, for *playing in the lottery* but not for *winning the lottery.* On the other, PARTICIPANT PRACTICALITY also derives the commitment to act that a jussive imposes on its target.

The updated JUSSIVE entry is provided below.

(22) $[\![\text{JUSSIVE}^i\ \phi]\!]^{c,g} = \lambda e :$

a. **Presupposition:** e has an *agent*, a *goal*, and a *content* of type $\langle ct \rangle$ & EPISTEMIC UNCERTAINTY(e) & PARTICIPANT PRACTICALITY(e).

b. **Assertion:** $\exists G$ s.t.

(i) G is an acquaintance-based concept-generator for e &

(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &

(iii) $\mathcal{F}_{cont}(e) = \lambda\langle w, x\rangle.\ \forall\langle w', x', y'\rangle$ [being x' in w' and addressing y' is compatible with the expressed desires of x in world(c) $\Rightarrow$ $[\![\phi]\!]^{g^{i\to G}}_{¢}(\langle w', x', y'\rangle)$]

In the next section, I review the main features of an alternative, semantically minimal analysis of imperatives as offered by Portner (2004, 2007) and briefly describe the difficulties it has handling jussives in embedded environments.

6.4 Against a minimal semantics for jussives

As pointed out in the introduction to this chapter, analyses of imperatives vary in the degree to which imperative force is attributed to their semantics as opposed to post-semantic processes. As discussed in detail above, Kaufmann's modal approach to imperatives, which is the approach adopted in this work, assumes a rather rich semantics for imperatives: Imperative force is the contribution of a silent modal operator together with a set of presuppositions it comes with, which ensure the performative use of the modal. On the other end of the spectrum is Portner's (2004, 2007) analysis: Semantically, imperatives constitute mere properties. Their distinct illocutionary force is the result of the specific pragmatic mechanism properties (as opposed to other semantic entities) are subjected to.

6.4.1 Portner's (2004; 2007) analysis of jussives

Let me outline some of the details of Portner's proposal. The proposal is based on the assumption that a Discourse Context C is universally comprised of (at least) three discourse components: the Common Ground CG (a set of propositions), the Question Set Q (a set of sets of propositions), and the To-Do List function T (a function from individuals to sets of properties). To-Do-Lists record for each discourse participant the set of properties they are publicly committed to attaining; not behaving accordingly is judged as irrational (cf. Kaufmann 2014 on Portner 2007).[5] A plain imperative *Sit down!* expresses the property of sitting down. The target of the imperative, which is the addressee, is encoded as a presupposition on the individual argument.

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

Imperatives ϕ_{imp} are associated with the pragmatic function (Kaufmann (2014) calls it a *condition of use*) in (24), which adds $[\![\phi_{imp}]\!]$ to the To-Do-List of the addressee, $T(\text{addressee})$.[6]

(24) Where C is a context of the form $\langle CG, G, T\rangle$,
$C + \phi_{imp} = \langle CG, Q, T[\text{addressee}/(T(\text{addressee}) \cup \{[\![\phi_{imp}]\!]\})]\rangle$

A similar rule can be devised for jussives with targets other than the addressee: As Portner (2004) explains, a promissive, for example, would be taken to denote a property presupposed to hold of the speaker and, correspondingly, would modify the To-Do-List of the speaker (or else lead to infelicity).[7]

[5]Specifically, the role of To-Do Lists is to impose an ordering on the worlds compatible with the Common Ground, (i). This ordering determines what actions an agent is committed to taking, by the principle in(ii). (Portner 2007:358)

(i) *Partial ordering of worlds:*
For any $w_1, w_2 \in \cap CG$ and any participant $i, w_1 <_i w_2$ iff for some $P \in T(i), P(w_2)(i) = 1$ and $P(w_1)(i) = 0$, and for all $Q \in T(i)$, if $Q(w_1)(i) = 1$, then $Q(w_2)(i) = 1$.

(ii) *Agent's commitment:*
For any participant i, the participants in the conversation mutually agree to deem i's actions rational and cooperative to the extent that those actions in any world $w_1 \in \cap CG$ tend to make it more likely that there is no $w_2 \in \cap CG$ such that $w_1 <_i w_2$.

[6]Note that this is a simplified version: Portner's (2007) final rule involves an additional parameter h as the salient selection function in a context C. h provides the conversational background for the interpretation of jussives.

[7]Portner is not explicit as to whether he assumes other jussive forms such as promissives to be

6.4.2 Embedded jussives in Portner's (2007) analysis

Are embedded occurrences of imperatives and other jussives amenable to Portner's analysis? Portner (2007), addressing Korean embedded jussives, argues that they are. He proposes a syncategorematic treatment of jussives embedded under verbs of saying. For example, imperatives embedded under *say* are subject to the interpretation rule in (25): The contextual update initiated by an imperative under *say* applies to a context C compatible with the content of the reported speaker S's utterance to hearer H. The condition on the resulting context is a proposition, which can be used to update the CG component of C. (Updating CG is the canonical function Portner assigns to declaratives as sets of propositions.)

(25) $[\![S \text{ say to } H\ \phi_{imp}]\!] = \{w\text{: } C \text{ is a context representing what } [\![\text{S}]\!] \text{ says to } [\![\text{H}]\!] \text{ in } w \ \&\ C + [\![\phi_{imp}]\!] = C\}$

Let me make a few remarks regarding this treatment of embedded jussives. First, a potentially problematic feature of the rule in (25), as noted by Kaufmann (2014), is the fact that *say* acts like a monster and induces a shift to the reported context to update To-Do-Lists there. As she points out, we therefore lose access to the actual context, which would be needed to interpret strict indexicals. This is a relevant concern for jussive-embedding languages where no or only selected indexicals can shift. Korean, Mongolian, and Slovenian, among others, are all of that type: They lack indexical shift yet their compatibility with embedded jussives needs to be accounted for.

One of my main tenets was to capture the *de se* interpretation of embedded jussive subjects. In its current form, Portner's analysis does not account for this component. Let me try to illustrate this point. In discussing the connection between performative modal statements and imperatives, Portner (2007) remarks that *must* used performatively adds a property to (someone's) TO-DO-LIST.[8] Assuming that *must* can have that function also with respect to TO-DO-LISTS for third person subjects, then if A (thinking he is talking to C) says to B, "B must sit down", the property of sitting down should become part of B's TO-DO-LIST. Although it is not entirely clear to me how to read the rule in (25), my understanding of Portner's analysis is that *A said to B [sit-*IMP *down]* should be intended to be true by this rule (in other words, the proposition denoted by this imperative report should be part of

regulated by a separate rule. It seems desirable to ultimately have a uniform rule that covers all cases.

[8]Though according to Portner, updating a TO-DO-LIST is never the *sole* function of an overt modal, i.e., performative modals are not functionally equivalent to imperatives.

the Common Ground) since, given the reported Discourse Context C, the reported addressee's TO-DO-LIST $T(addressee_C)$, which corresponds to T(B) in our example, would indeed contain the property [$\lambda x.$ x sits down] (i.e., $C + [\lambda x : x$ is $addressee_C.x$ sits down$] = C$ would be true).

Taking a step back, Portner's interpretation rule for imperatives makes reference to "what the reported speaker said to the reported hearer" but not to the reported speaker's attitude. In the current set-up, establishing the truth of an imperative report mostly involves looking at the TO-DO-LIST of the reported hearer $T(addressee_C)$ and checking whether or not the update of $T(addressee_C)$ with, for example, the property of sitting is reflected in the reported Discourse Context C "representing what the reported speaker said to the reported hearer". It seems that under this approach, the only way to prevent imperative reports from felicitously reporting non-*de se* attitudes would be at the level of the original utterance: In the case of an original utterance "B must sit down" of A to B, the update of B's TO-DO-LIST itself would need to be blocked given that the speaker relates to his addressee as a third person. To sum up, it appears that in Portner's current model significant additions would be necessary if we were to take a shot at encoding the *de se* property of imperative reports.

Another point of criticism regards the limitation of the current rule to the predicate *say*. As Portner (2007) already indicates by providing a separate rule for imperatives under *order* (which he takes to make the additional semantic contribution of specifying the selection function as deontic), we would supposedly need multiple rules to interpret jussives under different embedding predicates.

Finally, the rule in (25) seems technically deficient: C in this rule is an unbound variable. It is unclear if it corresponds to Portner's Discourse Context index C, and what the relationship is between C and worlds w in this rule.

Based on the difficulties an analysis à la Portner has in dealing with embedded jussives and given the preliminary success of a modal analysis in handling them, I conclude that choosing the latter is in the interest of our theory. Ultimately, of course, a fair and complete comparison would need to pay more attention to the derivation of the illocutionary force of imperatives in a modal analysis: The presuppositional account laid out in this chapter is but a tentative sketch, which would need to be solidified and proven to be fully workable before we can declare the matter settled.

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In the preceding discussion I have ignored so-called "weak" uses of imperatives expressing acquiescence (26-a) or indifference (26-b).

(26) von Fintel & Iatridou 2017

a. A: It's getting warm. Can I open the window?
B: Sure. Go ahead. Open it!

b. Go left! Go right! I don't care.

Imperatives in such uses resemble possibility statements. Their existence therefore creates obvious problems for analyses that tie imperatives to an underlying necessity modal. At the same time, such uses seem suggestive of approaches that leave imperative force unspecified by assigning to them a minimal, non-modal semantics. While in the past, weak imperatives have indeed been used as an argument against a modal approach and in favor of a minimal semantics for imperatives, Oikonomou (2016) shows that this argument may be flawed and demonstrates that imperatives whose modal force fluctuates are in fact amenable to a modal treatment provided one crucial innovation: The modal associated with imperatives must have *existential* force. To account for the default, obligation reading of imperatives, Oikonomou (2016) proposes to resort to pragmatic strengthening by way of exhaustification.

Oikonomou's (2016) argument carries over to my analysis: Nothing in my account hinges on the JUSSIVE modal being a *universal* operator. Therefore, the same innovation could be used to save my modal account should we encounter weak uses of jussives. I currently lack knowledge regarding the availability of weak readings of jussives in Korean and Mongolian. Attempts to elicit judgments for Mongolian imperatives uttered in contexts that are characterized by speaker acquiescence or indifference remained inconclusive. However, as weak uses are cross-linguistically common, it appears important to point out that my analysis can, in principle, be reconciled with such uses.

6.5 Conclusion

In this chapter, I addressed the illocutionary force of jussives in English and Mongolian, and dicussed possible ways of deriving their force under a modal approach to imperatives. I hypothesized that Mongolian voluntatives and imperatives behave similar to English imperatives, and suggested that their performativity can be broken down to, at least, the following five properties: (i) Their truth value is not up for discussion, (ii) they require the speaker to be uncommitted before the utterance as to whether or not the prejacent is true, (iii) they are at odds with the speaker expressing a lack of approval regarding the prejacent, (iv) they are limited to propositions whose coming true can be effected by the jussive target, and (v) they impose an obligation (a commitment to act) on the jussive target.

Given that these properties are not inherent to the semantics of a regular modal, Kaufmann (2012) adds them in the form of presuppositions contributed by the imperative. Adopting her proposal, I proposed two presuppositions EPISTEMIC UNCERTAINTY(e) and PARTICIPANT PRACTICALITY(e), which JUSSIVE imposes on its event argument. EPISTEMIC UNCERTAINTY was taken to account for property (ii), and PARTICIPANT PRACTICALITY for property (iv) and (v) above. Property (i) was argued to follow automatically from the fact that the speaker, as the holder of a bouletic attitude, is an authority on the truth of the asserted modal proposition. Moreover, property (iii) – the desirability of the prejacent – seems to be entailed by the semantics of JUSSIVE and therefore does not require a separate presupposition.

In the final part of this chapter, I outlined some of the features of Portner's (2004, 2007) pragmatic approach to imperatives. I discussed his treatment of embedded occurrences of imperatives and pointed out several shortcomings, which led me to dismiss his analysis in favor of a modal analysis.

More work would need to be done both in the empirical and the analytical domain to complete the analysis started in this chapter. On the one hand, the collected Mongolian data is too sparse to allow for in-depth conclusions about the semantics and specific usage conditions pertaining to Mongolian jussives. More research would be necesary to fill this gap and test whether the proposal put forward in this chapter in fact makes the right predictions. By adding Korean jussives to the picture, we could create a further benchmark against which to test and potentially refine the proposed analysis. A more thorough investigation of the semantics and use of Korean promissives and exhortatives would, furthermore, help us settle the question as to whether the parallel drawn between those forms and Mongolian voluntatives is indeed warranted.

From an analytical point of view, several issues omitted in my sketch would need to be addressed by a fuller version of my account: First, note that my proposal makes heavy use of the event argument of JUSSIVE, and attributes to events a rather rich internal structure. The presuppositions were stated as presuppositions on events as opposed to contexts in Kaufmann's original proposal. The semantics assigned to JUSSIVE made it necessary to tie to events most of the components that are typically associated with contexts. Apart from the rather uncontroversial assumption that events have participants, I thus also made the more contentious claim that events may be connected to a question under discussion (a decision problem). Substantiating this claim by way of independent evidence would be desirable.

A more rigorous discussion would, further, have to fix a technical imprecision in the representations of the added presuppositions and show how to achieve binding of the concept generator variable G mentioned in the presupposition, whose binder

is introduced in the assertion component of the JUSSIVE modal.

Chapter 7

Previous accounts of embedded jussives: Korean and beyond

I characterize approaches to jussives and their embedded occurrences along three dimensions, to wit, (i) the syntactic and semantic properties associated with the jussive subject, (ii) the derivation of jussive force, and (iii) the properties of the embedding context and how it interacts with the semantics of the lower clause.

Regarding the first dimension, relevant questions concern the interpretation of the subject – crucially, while in Korean, the subject is dependent on the embedded context, this is not obviously the case in Slovenian –, its featural make-up, and the derivation of its *de se* semantics.

As for the second dimension, we have seen in the preceding chapter that approaches to jussive force roughly split into two classes: Semantic approaches to jussive force take jussives to be covert modal elements. Stegovec & Kaufmann (2015) follow this route in their analysis of Slovenian, from which my work has drawn important insights. Pragmatic approaches, on the other hand, couple a reduced semantics for jussives with more specific assumptions about their illocutionary force, commonly framed as their context update potential. An application can be found in Pak et al.'s (2008b) and Park's (2011) analysis of Korean.

7.1 Korean

I discuss two proposals addressing Korean jussives and their embedded occurrences, to wit Pak et al. (2008b), and Park (2011); though Park (2011) closely follows Pak et al. there are some differences in her implementation, which are worthwhile spending some time on.

7.1.1 Pak et al. (2008a,2008b)

Covert subjects in jussives are analyzed as silent indexical pronouns equipped with corresponding features [1PS] or [2PS], respectively. Features constrain the domain of the pronoun by way of a presupposition à la Heim & Kratzer (1998).

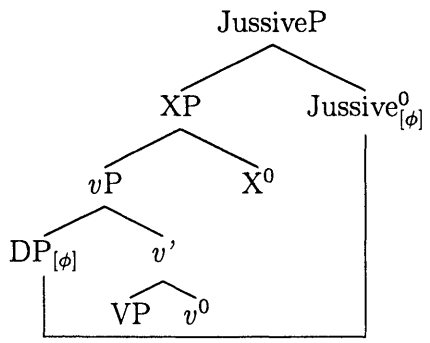
Jussive subjects enter into an agreement relation with a dedicated functional head Jussive, which carries the ϕ-features of a shiftable indexical. Different features are spelled out by the three familiar jussive particles, cf. (1).

(1) a. $\text{Jussive}^0_{[shiftable:1]} \rightarrow$ /-*ma*/
b. $\text{Jussive}^0_{[shiftable:2]} \rightarrow$ /-*la*/
c. $\text{Jussive}^0_{[shiftable:1+2]} \rightarrow$ /-*ca*/

The only difference between promissives, imperatives, and exhortatives consists in the person features associated with them. As outlined earlier (section 4.2), Pak et al. justify a unified view of jussives based on behavioral parallels in various domains, including identity in the marking of negation, incompatibility with evaluative and evidential particles as well as with temporal marking, and the ability for different jussives to undergo coordination. (Recall that my decision to treat Korean jussives as different forms of the same underlying category was inspired by Pak et al.'s argument to that effect.)

Jussive subjects are taken to enter into an agreement relation with the Jussive head, as shown below. (XP stands for any functional projection that may intervene, such as Aspect or negation.)

(2)



Recall that Korean jussives allow for both overt and covert subjects. A central claim is that covert but not overt indexicals are shiftable in Korean. This derives the distribution of overt subjects in embedded jussives (see section 4.3.4 for details):

Even in the presence of matching person features, in embedded jussives an overt indexical such as *nay*, marked as [*unshiftable*:1], is compatible with a Jussive head [*shiftable*:1] only if the referent of Jussive coincides with the referent of the strict first person indexical. This is because [*shiftable*:1] refers to the reported speaker, while [*unshiftable*:1] refers to the actual speaker. Hence either the reported speaker *is* the actual speaker, or the result is semantically inconsistent. In matrix jussives, the difference between shiftable and unshiftable features is taken to be semantically obsolete.

Pak et al. follow Portner (2004, 2007) in assuming that jussives form one of three clause types, along with declaratives and interrogatives. The force of jussives is tightly connected to their clause type status as a separate clause type. Recall from section 6.4.1 that Portner (2004, 2007) assumes that a Discourse Context is made up of three discourse components: the Common Ground (a set of propositions), the Question Set (a set of sets of propositions), and the To-Do-List function (a function from individuals to sets of properties). The illocutionary force associated with a clause type is defined by the way it manipulates the Discourse Context C: Declaratives, which are propositions, update the Common Ground, interrogatives – sets of propositions – update the Question Set, and jussives, taken to denote properties, update the To-Do-List of a discourse participant. As alluded to earlier, the person features in jussive clauses dictate whose To-Do-List this update is performed on by imposing a presupposition on the individual argument of the property denoted by the jussive: For example, a Jussive head marked with a first person feature (i.e., what we called a 'promissive') restricts the individual argument to the speaker.

Zanuttini (2012:1265) provides a formalization of the property semantics assumed by Pak et al. (2008b): The Jussive head is viewed as an abstraction operator, which binds the argument it agrees with (the jussive subject), reminiscent of Chierchia's PRO.[1], A JussiveP in a promissive clause, for example, will have the following meaning.

(3) $[\![\text{Jussive}_{[1\text{PS}]3}\ [_{v\text{P}}\ \textit{pro}_{[1\text{PS}]3}\ \ldots]]\!]^{g,c} = \lambda x : x = \text{speaker}_c.\ [\![v\text{P}]\!]^{g[3\rightarrow x],c}$

Conditions of use, which are post-semantic rules, regulate the update process for each clause type. As discussed in section 6.4.2, the interpretation of embedded jussives is derived via a syncategorematic interpretation rule.

I formulated my critique of Portner's framework and how it handles embedded jussives in section 6.4.2. As all points of criticism also apply to jussive embedding in Korean, among other languages, I refer the reader to that section for further

[1]This idea is already alluded to in Pak et al. 2004, but never fully worked out.

discussion of the proposal.

Moreover, by treating the jussive subject as a regular pronoun, Pak et al. are forced to assume a new category of covert indexicals that can shift. As I have made clear before, such a move seems undesirable.

7.1.2 Park (2011)

Park, following Portner (2007) and Pak et al. (2008b), takes jussive subjects to enter into an agreement relation with a Jussive head that carries person features. Jussive clauses involve obligatory abstraction over the subject and consequently denote properties; the person features carried by the Jussive head impose presuppositions on these properties.

Park's (2011) analysis differs from Pak et al. (2008b) in how she derives the dependent interpretation of jussive subjects: Putting forward a proposal made by Baker (2008), Park holds that first and second person pronouns (overt as well as covert) receive their interpretation through binding by a Speaker or Addressee operator OP_{Sp} and OP_{Adr} in a Perspectival/Speech Act projection Sp/AdrP located between CP and JussP (or between CP and a corresponding functional projection in declaratives).

(4) $[_{\text{CP}}\ [_{\text{Sp/AdrP}}\ \textbf{OP}_{Sp_3}\ [_{\text{JussP}}\ [_{\text{TP}}\ \textbf{\textit{pro}}_{[1\text{PS}]3}\ \text{T}^0\ ]\ \text{Juss}^0_{[1\text{PS}]}]\ \text{Sp/Adr}^0]\ \text{C}^0]$

The following assumptions are made to account for the dependent interpretation of jussive subjects: (i) The Speech Act projection Sp/AdrP projections can occur in embedded position. (ii) Sp/AdrP varies in the operators it contains, and embedding verbs can select for a specific variant (regardless of the intervening CP). (iii) First and second person pronouns are bound by the closest operator matching their features, in line with Baker's (2008) Person Licensing Condition (5-c).[2]

(5) *Person Licensing Condition (PLC)*

a. A DP/NP is first person only if it is locally bound by the closest c-commanding S [= OP_{Sp}], or by another element that is first person.

b. A DP/NP is second person only if it is locally bound by the closest c-commanding A [= OP_{Adr}], or by another element that is itself second person.

[2]Baker introduces this condition to account for optional indexical shift in Amharic, Zazaki, and obligatory shift in Slave, a.o. Optionality is taken to be apparent and arises if an embedding verb has both a context-shifting and a non-shifting lexical variant.

c. Otherwise, a DP/NP is third person. (Baker 2008:126)

However, though much attention is paid to the derivation of the right antecdent for the jussive subject, its *de se* property remains unaccounted for in Park's analysis.

Different jussive embedding verbs select for different Speech Act projections, cf. (6); this derives the selectional restrictions of predicates regarding the jussive forms they may embed. In cases such as *say*, which allows for jussive complements of all three types (6-d), the flavor of Sp/AdrP is taken to be contextually determined.

(6) a. Verbs of commitment (e.g., *yaksokha-* 'promise'): select for $\{\text{OP}_{Sp}\}$
b. Directive verbs (e.g., *meynglyengha-* 'order'): $\{\text{OP}_{Adr}\}$
c. Verbs of suggestion (e.g., *ceyanha-* 'propose'): $\{\text{OP}_{Sp} \oplus \text{OP}_{Adr}\}$
d. Verbs of communication (e.g., *malha-* 'say'): $\{\text{OP}_{Sp}, \text{OP}_{Adr}, \text{OP}_{Sp} \oplus \text{OP}_{Adr}\}$

Park's (2011) hypothesis involves some unconventional assumptions: The Speech Act operators OP_{Sp} and OP_{Adr} themselves seem to require binding, unless they are in the root clause. They may either be bound by a higher DP, or the next-higher operator of their own type; the appearance of shifted indexicality arises if the highest link in the binding chain is a DP whose person features do not match the person features of the operator(s) it binds. Given that operators are not normally bindable, however, this approach raises the question what type of object these operators constitute.[3]

Some additional assumptions are necessary to derive the fact that overt indexicals are strict indexicals: Park adopts Pak et al.'s view that overt indexicals carry a feature [*unshiftable*], while covert indexicals are [*shiftable*]. It is implied that these features are able to determine further binding of the operator which itself binds the indexical, yet the details of this mechanism are not spelled out. The envisioned outcome is that shiftable indexicals allow for their antecedent operator to be bound by higher DPs of any person, while unshiftable indexicals are claimed to limit the binding operator to being bound by one or a chain of higher matching operator(s).

Park's (2011) analysis does not offer additional insights into the derivaton of jussive force. Moreover, although the *de se* interpretation is demonstrated to be a distinguishing property of jussive subjects, no attempts are made at capturing it semantically.

[3]Baker (2008) speaks about operators being *controlled* rather than bound by a higher operator or DP, and refers to Koopman and Sportiche (1989) and Adesola (2005), who deploy the concept of controlled logophoric operators to account for logophoricity in Abe and Yoruba, respectively.

7.1.3 Further accounts: Madigan (2008), Zu (2018)

Madigan (2008) focuses on providing a typology of Obligatory Control (OC) constructions in Korean, though his analysis remains largely syntactic. Madigan views jussive marking as an instance of mood marking, whose presence is characteristic of Korean OC complements: Korean is commonly taken to lack unmarked OC akin to infinitival OC (see also Park 2018). I do not provide the details of Madigan's account here, as this would exceed the scope of my work. However, ultimately, it would be worthwhile to explore to what extent my analysis can also handle non-jussive Control in Korean. I leave this as a task for future work.

Zu (2018), in her recent dissertation, provides a differentiated view of *de se* phenomena in a variety of languages, which includes a proposal for embedded and unembedded jussives in Korean. Parallel to my proposal, Zu's account assimilates jussive subjects to OC PRO under attitude verbs. Her analysis successfully derives both the featural make-up of jussive subjects and OC PRO, and their *de se* interpretation. However, the implementation is different: Zu assumes a feature geometrical approach, which involves a highly articulated left periphery. This includes a projection representing a perspectival center, dominated by a series of *Sentience* projections that mirror an implicational hierarchy of different types of semantic relations (knowledge, responsibility, and internal perspective) that may hold between the perspectival center and the reported event and its participants. The function of concept generators in my analysis is transferred to those Sentience projections. Unfortunately, the recency of Zu's thesis, published after large parts of my own work had already been written, prevents me from doing full justice to her account in this work.

7.2 Slovenian (Stegovec & Kaufmann 2015)

Slovenian (addressee-directed) imperatives[4] can be embedded under *say* (8), as well as in restrictive (9) and non-restrictive relative clauses.[5] Imperatives embedded under *say* are introduced by a complementizer *da*.

(7) *Pospravi* sobo!
tidy-up.IMP.2.SG. room!
'Tidy up your room!'

[4]Though Slovenian also has directive speech acts targeting the speaker ("first person imperatives" in Stegovec & Kaufmann 2015), Stegovec & Kaufmann's (2015) investigation is limited to addressee-directed imperatives.

[5]Imperative embedding in relative clauses is cross-linguistically rarer than in speech reports; Ancient Greek (Medeiros 2013) is another language allowing for imperatives in relative clauses.

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

(9) Na mizi so vsi clankii, ki jihi *preberi* do jutri.
on table.LOC are all papers.NOM that them read.IMP.2.SG by tomorrow
'All the papers that you should read by tomorrow are on the table.'

Slovenian embedded imperatives differ in one central respect from embedded jussives in Mongolian and Korean: The (covert) imperative subject remains anchored to the *actual* speech context rather than being relativized to the reported speech context.[6] This, of course, restricts the range of directive situations that can be featured in imperative reports: The actual addressee of an imperative report is always also the target of the original, reported directive, cf. (10). (Note that, as seen in (10), the reported directive can be a modal statement targeting a third person.[7]: As expected of genuine instances of indirect speech as opposed to quotes, faithful imperative reports may be mere paraphrases of the reported utterances.)

(10) *Context: Paul says to John, "George should really listen to you." John turns to the target of Paul's directive, George, and passes on Paul's directive.*
Paul mi je rekel, da me poslušaj!
Paul me.DAT is said that me.ACC listen.IMP.2.SG
'Paul said to me that you should listen to me!'

Unlike in Mongolian and Korean, the imperative subject in Slovenian may hence be a strict indexical $pro_{[2\text{PS}]}$, which is also the analysis Stegovec & Kaufmann (2015) opt for.

(11) $[\![pro_{[2\text{PS}]}]\!]^c = Addressee_c$[8]

At the same time, Slovenian resembles Mongolian and Korean in that the (performative) force of an embedded imperative is interpreted against the reported speech

[6]The same holds for all temporal and spatial indexicals in Slovenian.

[7]For example, the reported utterance could have involved an overt deontic modal:

(i) George bi te moral poslušati.
George would you.ACC should listen.INF
'George should listen to you!'

[8]Recall from the previous chapter that expressions are evaluated relative to contexts c, which are tuples designating a world, speaker, addressee, a variable representing mutual joint beliefs, a question under discussion, a salient modal base, and a salient ordering source.

context: In other words, imperative-reports are *assertions* of performative speech acts rather than performative speech acts of their own, and the deontic or bouletic attitude they express is an attitude of the reported and not the actual speaker. To illustrate, in (8) it is mom who wants the addressee to tidy up his/her room, and not the actual speaker.

The simultaneous dependence of embedded imperatives on two contexts creates a particular set of challenges for Stegovec & Kaufmann (2015).

Stegovec & Kaufmann (2015) follow a modal route to imperative meaning; their assumptions, based on Kaufmann (2012), have been reported in much detail in the preceding chapter. Recall that in their account, the imperative modal comes with a series of contextual presuppositions, which equip imperatives with their characteristic performative force.

The context targeted by the majority of presuppositions is the embedded context[9]: To wit, the relevant (shared) beliefs and questions (addressed by EPISTEMIC AUTHORITY and EPISTEMIC UNCERTAINTY) are tied to the reported discourse participants, and so are the deontic attitude and its conversational background. However, the subject as a strict indexical is evaluated against the actual context. The conclusion is that both the actual and the reported contexts must be accessible in the computation of the embedded imperative clause.

The pursued strategy can best be appreciated by considering the entry given to the imperative operator, which is a shiftable indexical at the same time as a universal modal quantifying over contexts i (type k); note how both the evaluation context c and a context argument i are available and deployed in saturating the different presuppositions. In embedded imperatives, these presuppositions are locally accommodated, in line with the non-performative nature of imperative reports.

(12) $[\![\text{OP}_{Imp}]\!]^c = \lambda i_k.\lambda p_{\langle k,t\rangle}$: EPISTEMIC AUTHORITY($i$) & EPISTEMIC UNCERTAINTY(i) & ANSWERHOOD(c) & DECISIVE MODALITY(i). $\forall h[w_i R^{f_i,g_i} w_h \Rightarrow p(h) = 1]$ (Stegovec & Kaufmann 2015: 633)

To grant embedded imperatives access to multiple contexts, Stegovec & Kaufmann (2015) adopt a modification of a proposal by Sudo (2012). I shall briefly summarize the involved components: Slovenian *say* (13), analyzed as an attitude verb, is a context shifter: Note that its accessibility relation is anchored to w_i rather than w_c. However, no expression ever overwrites the actual context as the evaluation parameter; this allows for the existence of strict indexicality in the scope of context

[9] An exception is ANSWERHOOD, i.e., the presupposition that the prejacent be a possible action for the addressee, which can be shown to hold of the actual context.

shifters. Instead, expressions take context arguments (as seen in (12) and (13)), and context shift is induced through binding of context pronouns.

(13) $[\![\textit{rekel}\text{ 'say'}]\!]^c = \lambda i_k.\lambda p_{\langle kt\rangle}.\lambda x.\forall j$ compatible with what x says in w_i: $p(j) = 1$ (ibid.:632)

Stegovec & Kaufmann (2015) stipulate that context shift only takes place through binding of context arguments by attitude predicates.[10] *say*, being an attitude predicate, hence qualifies as a context shifter and can bind the context argument of OP_{Imp}.[11] (14) illustrates the structure assumed to underlie imperative reports.

(14) [λh [John [say h] [λi that [[OP_{Imp} i] λj [$pro_{[2\text{PS}]}$ [listen j]]]]]]

7.2.1 Predictions and remarks

Stegovec & Kaufmann's (2015) semantics does not seem to enforce a *de te* attitude of the speaker towards the embedded subject: Though Slovenian *say* quantifies over contexts as complex entities which, among others, specify speaker and addressee, the jussive subject as a strict indexical only allows for a *de re* interpretation.

Consider the following non-*de te* scenario. Suppose Alice gets to talk to her employee Bob in person for the first time. Unaware that she is talking to Bob, she says to him: "Bob should contact Cesar". Stegovec & Kaufmann's (2015) semantics predicts that an eavesdropper could remind Bob of Alice's directive using an imperative report (15) – regardless of the fact that Alice as the reported speaker does not hold a *de te* attitude towards Bob as the imperative subject.

(15) Alice said to you [OP_{Imp} $pro_{[2\text{PS}]}$ contact Cesar]

Luka Crnič (p.c.) informs me that a corresponding usage is in fact ungrammatical. This indicates that Slovenian jussive reports impose the same *de se* requirement on the relationship between the speaker and the embedded subject as similar reports in Mongolian and Korean. In its current form Stegovec & Kaufmann's (2015) account fails to capture this fact.

I would like to raise another interesting case involving ignorance on the part of the reported speaker. Imagine the following situation: Alice believes that her employee

[10] In other words, whenever context pronouns are not bound by an attitude predicate, they are indexed to the top-most context binder.

[11] To rule out that OP_{Imp}'s context argument is indexed to the top-most binder when in the scope of *say*, Stegovec & Kaufmann (2015) hypothesize a ban on vacuous quantification or a more specific locality condition as in Percus (2000).

Cesar is sick and has stayed at home for the day. She is aware that some employee is currently in the break room having lunch and really needs someone to help her new employee Dora getting oriented (a task originally assigned to Cesar). She says to Bob, "The person in the break room should really help Dora". Alice is unaware that the person in the break room is in fact Cesar, who, contrary to her beliefs, has come into work. Note that *Alice wants Cesar to help Dora* is true of Cesar *de re* but not *de dicto* in this scenario. Would it still be felicitous for Bob to relay Alice's directive to Cesar in the following way?

(16) Alice said to me [OP_{Imp} $pro_{[2\text{PS}]}$ help Dora]

My interpretation of Stegovec & Kaufmann's (2015) account is that, again, we predict this report to hold true of the described scenario, though at first glance the scenario may appear to violate one of the presuppositions imposed on the reported context i by the imperative: To wit, by EPISTEMIC UNCERTAINTY(i), both the prejacent and its negation must be epistemic possibilities for the reported speaker ($Speaker_i$) before the imperative is uttered (see section 6.3 for a discussion of this presupposition). The prejacent is $pro_{[2\text{PS}]}$ *helps Dora*, which, given the strict reading of $pro_{[2\text{PS}]}$, translates to the actual addressee helping Dora.

Is it compatible with Alice's utterance that both the actual addressee helping Dora and the actual addressee not helping Dora are epistemic possibilities for Alice? It certainly seems so: The fact that Alice does not believe that Cesar *de dicto* should help Dora goes unnoticed in the given approach.

It would be important to know if the derived predictions are empirically adequate, or if the assumed *de re* semantics for the imperative subject needs to be changed and the subject made sensitive to doxastic alternatives after all, analogous to PRO.

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To conclude this chapter, let me add that the observed variation in the nature of the jussive subject generates an interesting question: Note that once we admit the possibility that imperatives have a pronominal subject in some languages (e.g., Slovenian), and a PRO subject in others (e.g., Mongolian and Korean), we need to examine how this distinction may be acquired. As far as we have seen, matrix imperatives do not betray which of the two structures is underlying. Evidence from embedded imperatives would consequently be pivotal for children to extrapolate the right analysis.

Chapter 8

Extending the analysis of jussives to canonical Obligatory Control constructions

In this chapter I propose that my analysis of jussive reports may also offer a new perspective on regular Obligatory Control (OC) constructions. I explore the question to what extent an analysis that parallels my account of jussive reports in all major respects is simultaneously able to capture the range of properties associated with OC constructions.

Recall that my analysis of jussive reports has the following crucial characteristics: (i) Jussive clauses have a structurally complex PRO subject. The *de se* interpretation of PRO and the choice of PRO's controller is secured by a presupposition on PRO. The variation in controller choice across jussive forms is the result of feature variation on PRO, which results in subtly different presuppositions. (ii) Jussive clauses involve an additional functional projection JussP above TP. JussP is headed by a modal JUSSIVE, which quantifies over concept generators G and binds the G variable inside PRO. (iii) Predicates, including predicates of speech, denote sets of events, and the desires expressed by jussive clauses constitute the content of those events. Composition of a predicate with its arguments proceeds via event modification.

I propose that the built of canonical OC contructions may be very similar: (i) Their PRO subject is complex and comes in at least two flavors, marked by features [SUBCON] and [OBJCON]. These features map to presuppositions, which simultaneously secure PRO's *de se* interpretation[1] and determine the choice of controller as

[1] As Landau (2018) points out, this statement needs to be qualified: Against common belief, there are instances of OC PRO under non-attitude verbs such as *start, be able to*, which lack the

the matrix agent ("Subject Control") or the matrix goal ("Object Control"). In analogy to jussive clauses, the choice of controller is thus relocated from the embedding verb (in traditional accounts) to the PRO complement. (ii) The attitude denoted by (intensional) OC complements is introduced inside the complement by a complementizer CONTROL in C, which maps events to their propositional content. Like JUSSIVE, CONTROL quantifies over concept generators and denotes a set of events whose content is expressed by the TP. Note that CONTROL is therefore reminiscent of *that* analyzed as a set of events with attitude content, which we discussed in earlier chapters. (iii) In keeping with a Neo-Davidsonian semantics, I take the Control verb to compose with the PRO clause (as well as with its other arguments) via event modification. In the course of my discussion, I will make certain refinements and additions to this inventory.

The OC phenomena addressed in this chapter are divided into two classes: The first part of this chapter 8.2 is devoted to OC verbs whose complement involves complex PRO and covers Subject and Object Control constructions, as well as so-called psychological causatives such as *convince* and *persuade*. The second part, section 8.3, introduces OC verbs whose complement can be argued to be smaller and lack a subject. In this section, I consider extensional Control verbs and how they fit in my analysis. Moreover, I offer a brief discussion of how their restructuring behavior speaks in favor of the proposed analysis.

As suggested by this division, a central goal of this chapter is to demonstrate that complex PRO as defended in this work is the only type of PRO subject across different types of OC: OC clauses either have this type of subject, or they lack a subject altogether (thus bringing us back to Chierchia's (1989) proposal).

The assumption that OC PRO is complex, and that its *de se* property derives from a presupposition on a concept generator inside the PRO clause is congruent with accounts of OC PRO found in Santorio (2014) and Landau (2018) and has been anticipated by Anand (2006). At the same time, my analysis differs from previous accounts of OC in its other assumptions: Both Santorio as well as Landau rely on a more traditional propositional (Hintikkan) semantics for attitude complements, where the attitude is selected by the embedding predicate and composition correspondingly proceeds via standard functional application. Though an account of this type, which combines the assumption of complex PRO with a Hintikkan semantics for Control verbs, has already been outlined in section 5.2.2, I will remind the reader of its detail in the next section.

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de se property. Landau's analysis is geared towards accommodating this difference. I ignore this complication in the main part of my analysis but will return to this issue in section 8.3.

8.1 Reminder: Obligatory Control in a Hintikkan semantics for attitudes

As discussed in detail earlier in this work, the joint appearance of two properties on OC PRO – its *de se* interpretation and the presence of ϕ-features – is an argument for analyzing PRO constructions as a special case of *de re* reports in the manner of Percus & Sauerland (2003a). Before I outline my novel take on OC constructions, let me recap how OC would be analyzed in a Hintikkan semantics for attitude reports using the example of Subject Control *want* in (1) (corresponding to the derivation of (29) in section 5.2.2).[2]

(1) $[_{\text{TP}}$ Mary$_3$ $[_{\text{T'}}$ wants^2 $[_{\text{TP}_t}$ $[_{\text{PRO}_e}$ $G_{2\langle ece\rangle}$ $x_{3\langle e\rangle}]$ to win the competition]]]

Recall that in a selectional framework, the attitude verb, *want* quantifies over concept generators G for an attitude holder x.

(2) $[\![\text{want}^i\ \phi]\!]^{c,g} = \lambda x.\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for x in world(c) &
(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &
(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c)
$\Rightarrow [\![\phi]\!]^{g^{i\to G}}_{¢}(\langle w', x'\rangle)]$

(3) a. If $g(2)(g(3)) = f_{self}$, $[\![[_{\text{PRO}}\ G_2\ x_3]]\!]^{c,g} = g(2)(g(3))(c)$, (by ICG)
else undefined.
b. $f_{self} = \lambda\,\langle w, x\rangle\,.x$

(4) $[\![\text{Mary}_3$ wants^2 $[_{\text{PRO}}\ G_2\ x_3]$ to win the competition$]\!]^{c,g}$
$= \lambda x.\exists G$ s.t. (by rule (2))
(i) G is an acquaintance-based concept-generator for x in world(c) &
(ii) $[\![[_{\text{PRO}}\ G_2\ x_3]$ to win the competition$]\!]^{g^{2\to G}}$ is defined &
(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with the desires of x in world(c)
$\Rightarrow [\![[_{\text{PRO}}\ G_2\ x_3]$ to win the competition$]\!]^{g^{2\to G, 3\to \text{Mary}}}_{¢}(\langle w', x'\rangle)]$
(Mary)

(5) $[\![(1)]\!]^{c,g} = 1$ iff $\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for Mary in world(c) &
(ii) $G(\text{Mary}) = f_{self}$ & (by (3-a))
(iii) $\forall\langle w', x'\rangle$ [being x' in w' is compatible with Mary's desires in $w \Rightarrow$

[2] As before, I leave out the CP layer of the OC complement as it plays no role in the current discussion.

$G(\text{Mary})(\langle w', x' \rangle)$ wins the competition in w'

The above meaning can be simplified along the following lines.

(6) $[\![(1)]\!]^{c,g} = 1$ iff
(iii) $\forall \langle w', x' \rangle$ [being x' in w' is compatible with Mary's desires in $w \Rightarrow f_{self}(\langle w', x' \rangle)$ wins the competition in w']

$\ldots = 1$ iff (iii) $\forall \langle w', x' \rangle$ [being x' in w' is compatible with Mary's desires in w $\Rightarrow x'$ wins the competition in w']

While the above construction is an instance of Subject Control, the analysis could be extended to cover Object Control constructions under communication verbs (which give rise to a *de te* interpretation of PRO) in a straightforward manner. The crucial modification (besides an interpretation of the c parameter as doubly-centered worlds and a corresponding update in the definition of concept generators) would involve defining another variant of PRO, $\text{PRO}_{[\text{ObjCon}]}$ (7) (identical to $\text{PRO}_{[\text{IMP}]}$ in imperatives), which ensures that the embedded proposition holds of the *tu* of the attitude holder.

(7) a. If $g(2)(g(3)) = f_{tu}$, $[\![[\text{PRO}_{[\text{ObjCon}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$, else undefined
b. $f_{tu} = \lambda \langle w, x, y \rangle . y$

I shall provide a more detailed account of how to derive the differences between Subject and Object Control in the following sections, in the context of my proposal for the analysis of OC.

8.2 Obligatory Control complements involving complex PRO

8.2.1 Subject and Object Control

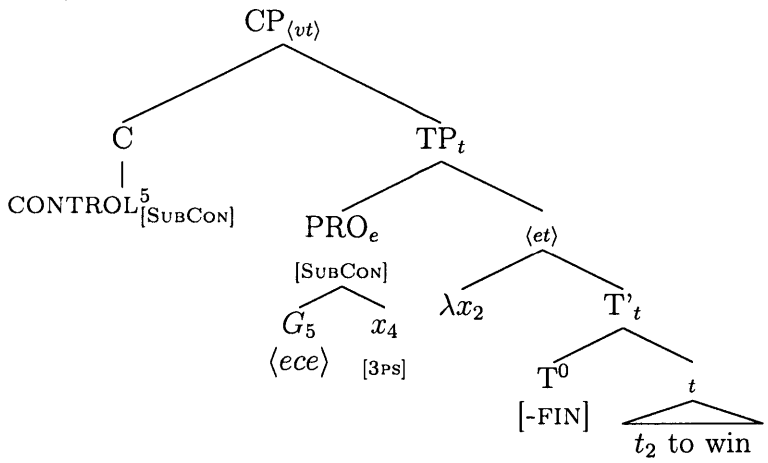
Let me introduce the proposal by illustrating the general built assumed to underlie OC constructions as well as the semantic types of their constituents.

As anticipated in the introduction to this chapter, I suggest that Control clauses closely resemble jussive clauses[3]: Like JUSSIVE, the CONTROL head in C binds G

[3](In a structural sense) modulo the presence of a functional phrase between CP and TP: Note that the presence of an (albeit semantically empty) complementizer in Mongolian and Korean

inside PRO and maps events to their content, which is the set of centered worlds denoted by the TP. T is marked with the feature [-FIN]; it is phonologically empty in English. PRO carries a feature [SUBCON] or [OBJCON], which drives the difference between Subject and Object Control via the presupposition connected to it. Again, this is identical to the strategy I used to distinguish different jussive forms.

(8) Mary$_4$ wants ...



However, in certain respects, the semantics of OC clauses and their central functional head diverge from jussive clauses and the JUSSIVE modal: First, and most obviously, the CONTROL head is not a modal. The above CP denotes events whose content is a simple proposition, as opposed to a desire statement in the case of JussP; this is reflected in the interpretation rule (9) below.

(9) $[\![\text{CONTROL}^i_{[\text{SubCon}]}\ \phi]\!]^{c,g} = \lambda e : e$ has an *agent* and a *content* of type $\langle ct\rangle$.
$\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for e &
(ii) $[\![\phi]\!]^{g^{i\to G}}$ is defined &
(iii) $\mathcal{F}_{cont}(e) = [\![\phi]\!]^{g^{i\to G}}_{¢}$

Moreover, unlike JUSSIVE, the CONTROL head comes with an additional specification, to wit, [SUBCON] (as in the above derivation) or [OBJCON], e.g., in (10). This differentiation concerns the presuppositions contributed by the CONTROL head: Note that CONTROL$_{[\text{ObjCon}]}$ (cf. (10)) but not CONTROL$_{[\text{SubCon}]}$ (cf. (9)) presupposes that the denoted events have a *goal* in addition to an *agent* and *content*. The reduced pre-

jussives required me to posit two functional phrases JussP and CP in addition to TP.

supposition in the case of $\text{CONTROL}_{[\text{SubCon}]}$ seems necessary to accommodate the fact that many (though not all) Subject Control verbs do not select for a goal argument, cf. *want*, *believe*, *hope*. At the same time, Object Control predicates by definition have a second argument. It thus seems inevitable to distinguish two versions of the CONTROL head.[4]

(10) $[\![\text{CONTROL}^{i}_{[\text{ObjCon}]}\ \phi]\!]^{c,g} = \lambda e : e$ has an *agent*, <u>a *goal*</u>, and a *content* of type $\langle ct \rangle$.
$\exists G$ s.t.
(i) G is an acquaintance-based concept-generator for e &
(ii) $[\![\phi]\!]^{g^{i \to G}}$ is defined &
(iii) $\mathcal{F}_{cont}(e) = [\![\phi]\!]^{g^{i \to G}}_{\mathfrak{c}}$

The meaning of Subject and Object Control PRO is straightforward and resembles the meaning of PRO in voluntatives/promissives and imperatives, respectively.

(11) Denotation of OC PRO(s)
a. If $g(i)(g(j)) = f_{self}$, $[\![[\text{PRO}_{[\text{SubCon}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$,
else undefined. $(= [\![\text{PRO}_{[\text{VOL/PROM}]}]\!])$
b. If $g(i)(g(j)) = f_{tu}$, $[\![[\text{PRO}_{[\text{ObjCon}]}\ G_i\ x_j]]\!]^{c,g} = g(i)(g(j))(c)$,
else undefined. $(= [\![\text{PRO}_{[\text{IMP}]}]\!])$

(12) a. $f_{self} = \lambda \langle w, x, y \rangle .x$ $(\sim f_{vol/prom})$
b. $f_{tu} = \lambda \langle w, x, y \rangle .y$ $(= f_{imp})$

Under the assumption of a Neo-Davidsonian semantics for *want*, we derive the following truth conditions for (8). (As outlined in an earlier chapter, in matrix declaratives an existential closure operator binds the unsaturated argument.)

(13) $[\![\text{want}]\!]^{c,g} = \lambda e.\ \text{want}(e)$

(14) $[\![\text{Mary wants to win}]\!]^{cg} = 1$ iff
$\exists e : \text{want}(e)\ \&\ agent(e) = \text{Mary}\ \&$

[4]Interestingly, provided certain assumptions, it may be possible to circumvent this problem in voluntative/promissive reports: The predicates found to embed voluntatives in Mongolian and promissives in Korean are all transitive predicates and therefore, in principle, able to appear with a goal argument. As voluntative/promissive reports are reports of utterances (I am not aware of counterexamples), suppose that there is no difference between talking to oneself and talking, but not to anyone: This woukd make it possible to identify the goal with the speaker in situations where the speaker has no conversation partner and, consequently, would allow for a uniform modal JUSSIVE with the same set of presuppositions across different jussive forms.

(i)&(ii) $f_{self}(\langle w_e, agent(e)\rangle) =$ Mary &
(iii) $\mathcal{F}_{cont}(e) = \lambda\, \langle w, x\rangle.\ f_{self}(\langle w, x\rangle)$ wins in w

$= 1$ iff $\exists e$: want(e) & $agent(e) =$ Mary &
(iii) $\mathcal{F}_{cont}(e) = \lambda\, \langle w, x\rangle\, .x$ wins in w

(14) states the existence of a desire state/event connected to Mary as the attitude holder. Recall from section 5.3.4 the principle assumed to regulate the interpretation of a statement *that* $\mathcal{F}_{cont}(e)$ *equals a certain set of centered worlds*: If the content of Mary's desire state is the set of centered worlds $\langle w, x\rangle$ s.t. x wins in w, this means that Mary as the agent and attitude holder self-ascribes the property of winning in her desire worlds. [5]

Object Control sentences are derived in a parallel fashion; for good measure, the meaning assigned to an Object Control construction involving *ask* is provided below. The featured functional head is CONTROL$_{[\text{OBJCON}]}$ (10).

(15) $[\![$Peter asked Mary$_3$ [CONTROL$^2_{[\text{OBJCON}]}$ [PRO$_{[\text{OBJCON}]}$ G_2 x_3] to buy tickets]$]\!]^{cg}$
$= 1$ iff $\exists e$: ask(e) & $agent(e) =$ Peter & $goal(e) =$ Mary &
(i) & (ii) $f_{tu}(\langle w_e, agent(e), goal(e)\rangle) =$ Mary &
(iii) $\mathcal{F}_{cont}(e) = \lambda\, \langle w, x, y\rangle\, .f_{tu}(\langle w, x, y\rangle)$ buys tickets in w

$= 1$ iff $\exists e$: ask(e) & $agent(e) =$ Peter & $goal(e) =$ Mary &
(iii) $\mathcal{F}_{cont}(e) = \lambda\, \langle w, x, y\rangle\, .y$ buys tickets in w

Regarding the right choice of controller, recall that the definition of G for e together with the presupposition on PRO guarantees that the selected controller corresponds to the controller indicated by the feature on PRO. For example, if PRO bears a feature [OBJCON] as in (15), the system we set up makes sure that x inside PRO is co-indexed with the goal argument *Mary*: A different co-indexing would result in a contradiction. (Refer to 5.5.3 for a proof of this claim.)

[5]Note that in (14) I took the liberty of presuming a version of G for an event e that does not presuppose that e has a goal. This adjustment is reflected in the restrictor of $\exists$, specifically, (14) (i)&(ii), which derives from the condition in the definition of G that the acquaintance relation $G(x)$ hold between the actual centered world and x: While the original definition refers to a triplet $\langle w_e, agent(e), goal(e)\rangle$, (14) assumes a singly-centered world $\langle w_e, agent(e)\rangle$. However, as this variation directly corresponds to the variation in presupposition tied to the respective versions of CONTROL, it does not constitute a separate hurdle.

8.2.2 Psychological causatives in contrast to other Object Control verbs

Not all Object Control predicates entail the same type of *de se* relation: In the previous section I exclusively addressed a subclass of Object Control verbs that require the external argument to have a *de te* attitude towards the PRO referent. Verbs in this class are typically verbs of communication such as *ask* and *tell*. For Object Control *ask*, what matters is the mental state of the asker regarding the askee: Peter in example (15), repeated below, must think of Mary as the individual that is subject to his request, i.e., he must relate to her *de te* (analogous to the *de te* attitude observed in imperatives). Just as in the case of *de me* attitudes, I take this relation to follow from an interpretation principle that determines what it means for $\mathcal{F}_{cont}(e)$ to be a set of doubly-centered worlds $\langle w, x, y\rangle$: If the content of Peter's asking Mary is the set of centered worlds $\langle w, x, y\rangle$ s.t. y buys tickets in w, this means that Peter as the agent and attitude holder "*you*-ascribes" the property of buying tickets in all worlds compatible with his request.

(16) *Peter, talking to Mary on the phone, says: "I think the first person to arrive at the theater should buy tickets for the entire group." He isn't aware that Mary has already arrived at the theater and is waiting there by herself.*

#Peter asked Mary to buy tickets for the group.

There is, however, a second class of Object Control verbs, known as *psychological causatives*, in which the relevant attitude holder is the *internal* rather than the external argument: As pointed out by Chierchia (1989), verbs belonging to this class, such as *persuade* and *convince*, entail a *de me* attitude of the goal towards PRO. Consider (17), featuring OC under *convinve*: The fact that *convince* entails a *de me* attitude of the object explains the intuition that (17) is false when used to describe a scenario where John has watched a video of someone winning a diving competition and, not realizing that he himself is the winner, says "This guy should become a professional diver" (cf. Anand 2006:16).

(17) #John's$_i$ winning the best diver competition convinced him$_i$ PRO$_i$ to become a professional diver.

In (17), a *de te* attitude of the agent is not even an option given that the subject is non-agentive. The same holds for (18) below. The fact that the relevant attitude holder is the object makes it generally possble for psychological causatives to have inanimate subjects.

(18) The constant noise from the upstairs apartment finally convinced John to leave. (Anand 2006:16)

The following minimal pair demonstrates that even in the presence of an agentive subject, the attitude center is the object in the case of *convince* and, similarly *persuade*: The truth of these psychological causatives entails success in creating an intention in the addressee to bring the complement proposition about, hence the infelicity of (19-a) (cf. Uegaki 2011). The truth of communication Object Control verbs such as *ask* and *tell*, on the other hand, lacks this contingency and seems to solely depend on the actions and intentions associated with the subject.

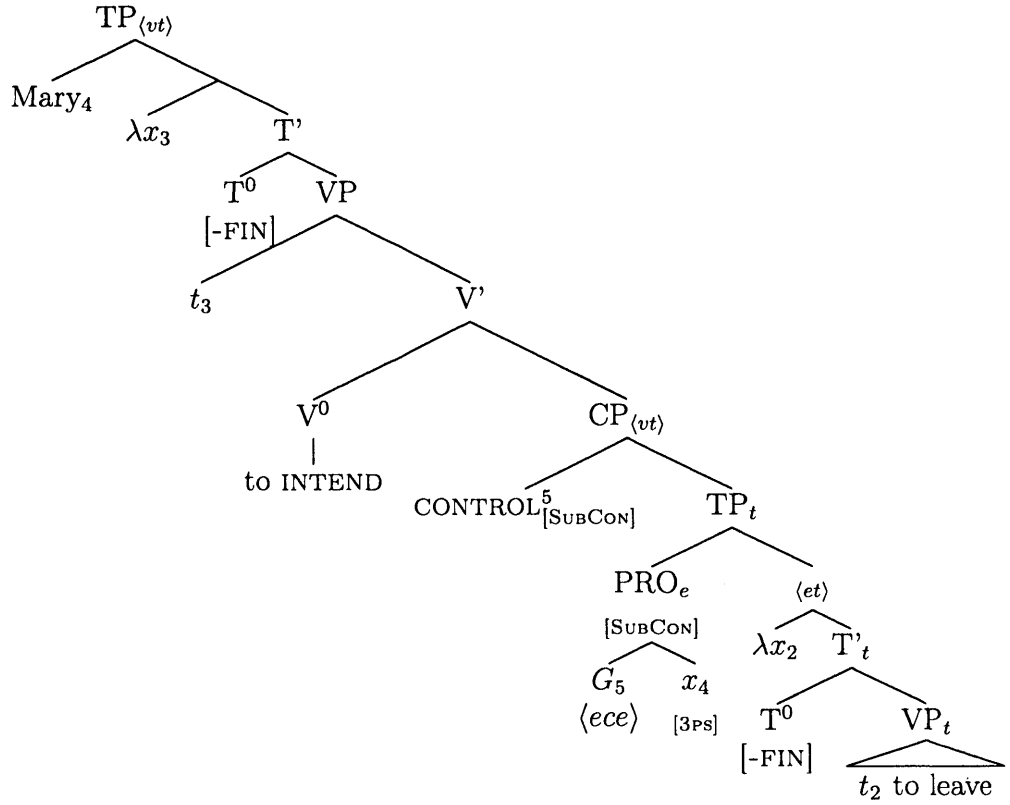
(19) a. #John persuaded/convinced Mary to leave, but Mary couldn't hear him.
b. John asked/told Mary to leave, but Mary couldn't hear him.

Note that in my analysis of Control, it is inherently the attitude of the external argument that is relevant: This was secured by a meaning postulate according to which the property that describes the content of a given attitude event is self-ascribed by the *agent* of the event. Is it necessary to relativize this assumption?

I argue that it is not. As pointed out by Irene Heim (p.c.), the behavior of psychological causatives could be captured by a decompositional analysis along the following lines: A predicate like [persuade y to leave] could have an underlying structure [CAUSE y to INTEND [$\text{PRO}_{[\text{SubCon}]}$ to leave]], sketched in (20). In this structure, y functions as the (ECM) subject of a silent Subject Control predicate INTEND and, consequently, would correctly be predicted to display a *de se (de me)*

attitude towards PRO.[6]

(20) John CAUSED ...



(21) /John persuaded Mary to leave/ ⇔ (20)

I assume that CAUSE introduces a causal chain of events: In my simplified semantics, x CAUSE ϕ is the set of events e with agent x for which there is an event e' such that e leads to e', in other words, e and e' stand in the cause-relation $cause(\langle e, e' \rangle)$, and $\phi(e)$.

[6]This line of reasoning could be taken a step further: Might there be just one type of Control, i.e., could all types of Object Control, including communication verbs, ultimately be reduced to (possibly stacked) occurrences of Subject Control? By this logic, [ask y to leave] could be decomposed into [PERSUADED y to TRY [PRO$_{[\text{SubCon}]}$ to leave]], which would further be broken down to [CAUSE y to INTEND [PRO$_{[\text{SubCon}]}$ to TRY [PRO$_{[\text{SubCon}]}$ to leave]]]. A similar idea is hinted at in Santorio (2014), though without elaborating on it. One critical advantage of this approach would be the unification of Control to one single type, i.e., Subject Control. Though interesting, I leave further exploration of this idea for future research.

(22) $[\![x \text{ CAUSE TP}]\!] = \lambda e.\ agent(e) = x \ \&\ \exists e'\colon\ cause(\langle e, e'\rangle)\ \&\ [\![\text{TP}]\!](e')$

I thus derive the following truth conditions for (20).

(23) $[\![\text{John CAUSED Mary to INTEND to leave}]\!] =$
$\exists e \exists e' : agent(e) = \text{John}\ \&\ cause(\langle e, e'\rangle)\ \&\ \text{intend}(e')\ \&\ agent(e') = \text{Mary}\ \&$
$\mathcal{F}_{cont}(e') = \lambda\,\langle w, x\rangle.\ x \text{ leaves in } w$

8.2.3 Predictions and open questions

The relationship between the matrix predicate and the structure of the PRO clause

My labeling of the different CONTROL heads suggests a correlation between the default choice of controller for a given predicate ("Subject" (*agent*) vs. "Object" (*goal*) Control) on the one hand, and the number of matrix arguments as presupposed by $\text{CONTROL}_{[\text{SubCon}]}$ vs. $\text{CONTROL}_{[\text{ObjCon}]}$ (where only the latter presuppposes a *goal* in addition to an *agent*) on the other. While the above examples involving *want* and *ask* are in line with this suggestion, does it hold across cases?

As alluded to above, many but not all Subject Control predicates lack a *goal* argument: *promise* is an example of a Subject Control predicate that denotes events with both an *agent* and a *goal*. Although the *goal* argument requires no specific *de se* relation if the controller is the *agent* (formally, if PRO is marked with [SubCon]), this is potentially different if the controller is split between the *agent* and the *goal* (which could correlate with a *de nobis* attitude), and is certainly so if the controller is shifted to the *goal* – which is possible under certain circumstances, often times connected to the type of embedded complement, cf. (24): Unless we conclude that (24) is felicitous even if Peter lacks a *de te* attitude towards me, the *goal* argument would play a crucial role in the interpretation of the sentence and the assumption of $\text{CONTROL}_{[\text{ObjCon}]}$ presupposing a *goal* (instead of $\text{CONTROL}_{[\text{SubCon}]}$) hence adequate.

(24) Peter promised me$_i$ PRO$_i$ to be allowed to leave.

This raises an interesting dilemma: We could conclude that the choice of CONTROL head with the associated presuppositions in fact tracks the valency of the verb rather than the choice of controller in a given instance. In other words, *promise* as a predicate with two individual arguments could always involve $\text{CONTROL}_{[\text{ObjCon}]}$, including in the default case of *agent* Control. In other words, we would allow for cases like the latter, where $\text{CONTROL}_{[\text{ObjCon}]}$ co-occurs with $\text{PRO}_{[\text{SubCon}]}$. This seems descriptively adequate but shows that the choice of CONTROL head cannot be a function of

agreement with the feature on PRO (which appeared to be an option so far).

This issue reaches into the domain of another, related question: What is the connection between the identity of the matrix predicate and the choice of Subject or Object Control, technically, $\text{PRO}_{[\text{SubCon}]}$ or $\text{PRO}_{[\text{ObjCon}]}$? My "PRO-centric" account locates controller choice in the complement clause, i.e., on PRO. While the idea to resolve the reference of PRO inside the embedded clause seemed intuitive in the case of jussives, where verbal morphology inside the PRO clause correlates with controller choice and any choice of controller is allowed in the context of the default speech predicate (Mongolian *khel-*, Korean *malha* 'say'), prima facie, this conceptualization is less obviously the right analysis for regular Control: To wit, Subject and Object Control clauses look identical on the surface; moreover, controller choice is not free but different OC predicates are associated with a default choice of controller. Let me focus on the latter point.

In my analysis, the factual "power" an OC predicate seems to have in determining the type of controller may seem unexpected: Matrix predicates do not select for their complement in my analysis. However, my account could simultaneously be used to reinforce the need for semantic explanations of controller choice: My account retains the option of explaining any lack of flexibility as a consequence of semantic requirements; under this view, *promise* would be argued to normally disallow $\text{PRO}_{[ObjCon]}$ since the resulting meaning would be semantically ill-formed. Though this approach might seem like begging the question, it has been repeatedly argued that there are correlations between the semantics of a given predicate and the choice of controller (see e.g. Postal 1970 in Landau 2013). I leave a fuller answer to the question of controller choice as well as controller shift in an approach along my lines for future work. However, I would like to point out one prediction a purely semantic explanation of controller choice would make: There should be no pair of OC predicates with the exact same lexical content L in the same or different languages, which differ in the choice of controller for embedded PRO. To give an example, Mongolian *khel-* and Korean *malha* 'say' must differ in their semantics from English *tell*, given that the latter is by default associated with Object Control complements, while the former show no such restriction.

A remark on the modality of canonical Obligatory Control constructions

I would like to draw attention to a certain difference between canonical occurrences of OC, e.g., under English *promise, order, ask*, German *versprechen* 'promise' on the one hand, and OC under corresponding verbs in Korean such as *yaksokha* 'promise' and *myenglyengha* 'order': Korean *yaksokha* 'promise' and *myenglyengha* 'order' both

allow for jussive complements (promissives and imperatives, respectively). Jussives have been analyzed as modal in nature and taken to correspond to desire statements. In section 5.7, discussing Korean 'promise', I took this to mean that Korean *yaksokha* 'promise' is a non-modal speech predicate with the basic meaning of *say* modified by a condition that the speaker takes on a commitment.

Crucially, to render a Korean promissive report involving *yaksok-ha* in English (and, similarly, in German), we use a simple infinitival complement rather than a desire statement of *wanting to go to the park*, cf. (25); mutatis mutandis for OC complements under English *order*.

(25) Eme-nim-kkeyse ai-eykey [kongwen-ey ka-ma-ko]
mother-HON-NOM child-DAT park-LOC go-PROM-C
yaksok-ha-si-yess-ta.
promise-do-HON-PST-DECL
'The mother$_i$ promised the child PRO$_{i(+)}$ to go to the park/#that she wants to go to the park.'

Sticking to the case of *promise*, this points at a difference between OC in English and German, on the one hand, and Korean jussive Control, on the other: Assuming that the equivalence suggested by the translation in (25) holds, either the meaning of English *promise* itself already accounts for the meaning contributed by the jussive in Korean, or the infinitival complement contains a silent modal elementakin to the Korean JUSSIVE modal. My analysis of English *promise* and its OC complement does not make this explicit: In my account, the English sentence in (25) simply asserts the existence of an event of promising whose content is the property of oneself going to the park.

It has been pointed out before that infinitives may contribute modality, for example, in infinitival questions and infinitival relatives (cf. Bhatt 1999, Hackl & Nissenbaum 2012). The fact that the English counterparts of Korean jussive reports lack an overt modal could be taken as evidence for the presence of a covert modal in infinitival contexts. At the same time, the fact that modality does not disappear if the complement is a finite clause (cf. (26)) shows that it is far from clear that the modal component is contributed by the infinitive rather than the matrix verb. The conclusion seems to be that the presence of an additional modal component in English OC constructions is likely, however, its location is yet to be determined.

(26) a. Liz promised to leave.
b. Liz promised that she would leave.

8.3 Obligatory Control complements without a subject

The analysis proposed above does not cover the entire class of OC predicates: It is well-known that not all OC verbs create attitude environments or report utterances; in other words, not all OC verbs embed intensions. The absence of attitudes, of course, also renders the *de se/de re* distinction inapplicable.

OC verbs that have been analyzed as extensional mainly belong to four lexical classes – modal, aspectual, implicative, and evaluative – and, by conventional wisdom, include verbs such as *able* (modal), *begin* (aspectual), *manage, succeed, fail, force* (implicative), *rude of someone* (evaluative) (cf. Landau 2018, a.o.). Crucially, extensional OC predicates are not captured by the analysis of Control presented in previous sections: Recall that the functional CONTROL head defined earlier denotes events with propositional content. While attitudes and utterances can easily be conceived of as propositional content (a set of worlds), it is not obvious what a corresponding content would be, for example, in the case of *start* events. The section at hand addresses this complication and how it relates to the theory of Control outlined in previous sections.

A central objective of this section is to demonstrate that the assumption of only one type of PRO – complex PRO – is sufficient to account for the range of empirical facts in the domain of OC. The absence of a complex PRO subject and its concept generator variable is theoretically necessary in the case of extensional OC complements, given that concept generators have no place in non-attitude environments. Now, in light of my assumption that complex PRO is the only type of PRO, infinitival complements that lack complex PRO must lack a subject altogether. I argue that there is evidence supporting this prediction: Extensional OC verbs have been noted to typically display restructuring behavior in languages like German. Crucially, under the standard analysis of restructuring, 'restructured' complements are subclausal units that lack a syntactic subject position.

8.3.1 The (ir)relevance of *de se* attitudes

Let me start by illustrating the behavior of some members of the above-mentioned lexical classes with regard to *de se* attitudes.

As attitudes *de se* presuppose awareness, the felicity of a given OC verb in the absence of animate matrix arguments is a clear indicator that a predicate fails to enforce *de se*, cf. *be responsible, force* in Landau's (2013) examples below. (PRO in these and the following examples is used for illustrative/interpretational purposes

only and does not represent the syntactic analysis I assign to these examples.)

(27) a. The accident$_i$ is responsible [for PRO$_i$ causing the ship to sink].
b. The transmission problem forced the car$_i$ [PRO$_i$ to stop].

However, insensitivity to *de se* can also be found among predicates with animate arguments: In the context described in (28), Bob lacks a *de se* attitude towards the individual he observes in the mirror, which is Bob himself. The fact that the sentences in (28-a) and (28-b) involving *begin* and *able* and their German counterparts are perceived as true in the described scenario suggests that these predicates do not specify the nature of the subject DP's (Bob's) attitude: Their truth solely relies on whether or not the embedded predicate holds of PRO's controller Bob *de re*. In this they contrast with the attitude predicate *believe*, German *glauben* in (28-c), which entails that the external argument has a *de se* attitude towards the referent of PRO.

(28) *Context: Bob, looking at his reflection in a window, sees a guy raising his arm. He does not recognize himself nor is he aware of his body movements. He believes that he is looking at his brother Bill.*

a. Bob$_i$ hat *begonnen*, PRO$_i$ den Arm langsam zu heben.
Bob AUX begun PRO the arm slowly to raise
Bob$_i$ *began* PRO$_i$ to slowly raise his arm.

b. Bob$_i$ war *in der Lage*, PRO$_i$ den Arm langsam zu heben.
Bob was able PRO the arm slowly to raise
Bob$_i$ was *able* PRO$_i$ to slowly raise his arm.

c. #Bob$_i$ *glaubte*, PRO$_i$ langsam den Arm zu heben.
Bob believed PRO slowly the arm to raise
#Bob$_i$ *believed* PRO$_i$ to be slowly raising his arm.

Aspectual verbs are generally clear instances of extensional OC verbs, cf. also *continue, resume, finish, stop*, etc.[7]

[7] Aspectual verbs have traditionally been analyzed as ambiguous between Raising and Control (Perlmutter 1970, Wurmbrand 2002, Landau 2013, a.o.). As summarized in Landau (2013), the presence of the Raising variant is signalled by non-thematic subjects such as *there* and *headway* (the subject of an embedded idiom), cf. (i).

(i) a. There began to be a commotion.
b. Headway continued to be made in the battle against wildfires.

The Control variants, on the other hand, are related to the transitive verbs and exhibit a thematic, agentive subject, form grammatical *-er* nominals, allow VP pseudoclefts, *do so* replacement, argument drop, and complement displacement. Landau argues that no Raising verb exhibits these

8.3.2 An analysis of extensional Obligatory Control predicates

The problem of extensional OC predicates has previously been addressed by Landau (2018). In analogy to my account, Landau enforces the obligatoriness of *de se* in attitude OC complements by virtue of a presupposition on the concept generator variable present in such complements. However, to allow for the absence of attitudes and hence *de se* in certain OC complements, Landau dissociates the presuppositional concept generator variable from OC PRO and instead locates it in the CP layer (specifically, the C head) of OC complements. Extensional OC complements are assumed to have less clausal structure than their intensional counterparts: Though in Landau's account they do have a PRO subject, they lack a CP layer and, correspondingly, do not feature the presuppositional concept generator variable that contributes the *de se* reading of PRO in attitude OC complements.

I make a more radical claim regarding extensional OC complements: they lack a subject altogether. Let my outline an analysis that accommodates this claim, using the example of OC *begin*.

(29) Bob_1 began to raise his_1 arm.

begin, being extensional, cannot reasonably be viewed as a predicate of contentful events. Moreover, as pointed out before, the assumption of concept generators and a functional head quantifying over corresponding variables is inappropriate for the very same reason: *begin* does not introduce attitudes and, hence, provides no access to mental representations the matrix argument might have of certain individuals. What this means is that both the CONTROL head and PRO as presented in this work have no place in the analysis of OC constructions such as (29).

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options.

(ii) (Landau 2013:158)

a. She began the job./ He finished the book.
b. Sam is a beginner/finisher.
c. What Bill did was begin to paint the fence.
d. Warren tried to begin to work and Jerry tried to do so too.
e. A: Did you wash the dishes?
   B: I just began.
f. To clean this mess, I'll never finish.

Although the Control status of the modal *able* is less certain than that of aspectual predicates (*able* does not participate in most of the constructions in (ii)), I include *able* in my discussion (cf. also Hackl (1998) for the assumption that *able* is a Control verb).

I propose that different from intensional OC predicates such as *promise, ask*, etc., *begin* selects for its complement – a function of type $\langle e, vt\rangle$ – directly, cf. (30).[8]

(30) $[\![\text{begin}]\!] = \lambda P_{\langle e,vt\rangle}.\lambda e : e$ has an *agent*. $\exists e'$ $[P(agent(e))(e') = 1$ & e is the beginning of $e']$

The Control verb *begin* establishes a relationship between events; specifically, *begin* describes a set of events e that are the beginning of some event e' which is an event of $agent(e)$ P-ing. (Of course, the notion of "beginning" would need to be rendered formally.)[9] The choice of controller is lexically specified in the entry of the Control verb such that, in the case of Subject Control *begin*, P is predicated of the *agent* of the *beginning* event (while in the case of an extensional Object Control verb such as *force*, P would be predicated of the *goal* argument). The assumption that matrix DP arguments are introduced by thematic heads remains unchanged.

By integrating predication into the semantics of the Control verb, we remove the need for a semantically active subject in the embedded clause. In a semantic sense, this move is a return to Chierchia's analysis of Control complements as bare predicates, though the relevant meaning in the case of *begin* is an extension rather than an intension. However, in my view there is no semantically empty counterpart to complex PRO, counter Chierchia and Landau (2018): In other words, I take *begin* to embed a bare VP. Note that the presence of ϕ-feature agreement between bound variables in the complement and the matrix controller (cf. *his* in (31)) receives a straightforward explanation in such an analysis: Since the complement is a sub-clausal unit, the binding domain extends to the matrix clause and the anaphor can

[8]Thanks to Irene Heim (p.c.) for help with this solution and the following refinements.

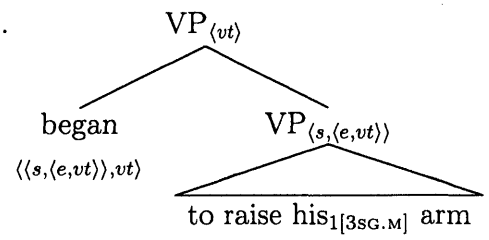
[9]The meaning in (30) is deficient in a way reminiscent of the so-called *imperfective paradox* (Dowty 1979) associated with Bennett & Partee's (1978) semantics for the progressive: By (30), *Mary began to cross the river* would entail that *Mary crossed the river* and hence would incorrectly be predicted to be false if Mary gave up and returned to the shore within a couple of minutes of starting her swim.

To amend this shortcoming, one could introduce a modal component into the meaning of aspectual predicates: For example, *begin* could be taken to quantify over inertia worlds, in the spirit of Dowty's (1979) solution to the imperative paradox. The Control verb would select for the intension $\langle s, \langle e, vt\rangle\rangle$ of its complement P, and *begin* P would denote the set of events that mark the beginning of some P-event *in all prototypical continuations* $\langle w', t'\rangle$ of the actual world w at interval t (short: in all $\langle w', t'\rangle \in Inr(\langle w, t\rangle)$) or, informally, provided that things take their natural course.

(i) $[\![\text{begin}]\!]^{w,t} = \lambda P_{\langle s,\langle e,vt\rangle\rangle}.\lambda e$: e has an *agent*. $\forall \langle w', t'\rangle \in Inr(\langle w, t\rangle)$: $\exists e'$ $[P(\langle w', t'\rangle)(agent(e))(e') = 1$ & e is the beginning of $e']$
(s ranges over world-interval pairs.)

be bound directly by the matrix controller.

(31) $\text{Bob}_{1[3\text{SG.M}]} \ldots$



8.3.3 Obligatory Control complements and restructuring

We have seen that extensional OC verbs are mainly found in the classes of modal, implicative, and aspectual predicates. Interestingly, these classes form the core members of the set of *restructuring* predicates in Romance and Germanic languages. Restructuring (also known as *clause-union*) describes cases of apparently biclausal structures that act as transparent domains for ordinarily clause-bound processes (cf. Wurmbrand 2004, a.o.). The most prominent examples of restructuring are clitic climbing (found in Italian, cf. Rizzi 1978, and Spanish, cf. Aissen & Perlmutter 1976, a.o.) and long passive (found in German, cf. Wurmbrand 2004). A prominent line of analysis represented by Wurmbrand (2004) and Cinque (2004) holds that restructuring predicates are generally monoclausal: In particular, Wurmbrand advances the view that restructuring predicates select for property-denoting VPs rather than clausal projections such as TPs and CPs.[10]

The relevance of restructuring for the purposes of the analysis is as follows: Extensional OC verbs tend to exhibit restructuring behavior. If Wurmbrand's analysis of restructuring complements as bare VPs is correct, the restructuring behavior of extensional OC complements provides strong support for the view advanced above whereby extensional OC complements do not involve a PRO subject.

At this point a remark is in place. There are predicates that crosscut the correlation observed in the previous paragraphs: An example is *try*, German *versuchen*, which show signs of intensionality; to wit, the sentence in (32) involving *try* is perceived as false in the described non-*de se* scenario (see Uegaki 2011, Grano 2011 for a similar view[11]). Yet, German *versuchen* commonly participates in restructuring,

[10]Wurmbrand (2004) distinguishes lexical from functional restructuring. It is the former category that the term *restructuring* usually refers to when not further specified.

[11]Opinions regarding the intensionality of *try* are divided; Landau (2018), for example, does not share this view. This disagreement is based, among others, on the fact that unlike run-of-the mill attitude verbs such as *expect, believe, want* etc., *try* does not seem to create an opaque context for existential entailments:

cf. (33) for a long passive configuration as one of the most common diagnostics for restructuring in German.

(32) *Context: Mike, a running coach, studies the race times of his team ranked from fastest to slowest. Mike doesn't realize that his own race time – which is faster than that of any of his students – has been included in the table. Pointing at his own name at the top of the table, which he misreads as the name of his student Mick, he says "Consider him for the award".*
*Mike tried to be considered for the award.

(33) dass der Kontrabass zu stimmen versucht wurde
that the.NOM bass to tune tried AUX.PASS.SG
'that they tried to tune the bass'

If an attitude semantics for *try* and German *versuchen* is on the right track, the compatibility of the latter with restructuring must be taken to mean that even intensional OC predicates may embed smaller complements that, crucially, lack a subject. This suggests that *de se* must be derivable in two different ways: One route to *de se* involves a functional head CONTROL or JUSSIVE in conjunction with complex PRO. However, an alternative route is offered by certain OC verbs such as *try*: Verbs like *try* would be taken to have an attitude semantics and quantify over a set of centered worlds, much along the lines of Lewis (1979); Chierchia (1989); Stephenson (2010); Uegaki (2011); Pearson (2013), as discussed in section 3.1.1 (cf. in particular entry (4)). In configurations where *versuchen* 'try' exhibits signs of restructuring, it must be this second route that leads to its *de se* property.

To spell this out, we may use a version of Grano's (2011) semantics for *try*: According to Grano, *trying* ϕ entails *intending* ϕ: *x tries* ϕ specifies the set of events that are events of x intending ϕ, implemented by way of a universal statement over corresponding intention worlds, cf. (34). (Note that *try* in Grano's analysis is associated with a second entailment, which distinguishes it from *intend*, namely, x taking (potentially solely mental) action towards the realization of ϕ. However, independent of whether or not this component is also appropriate for *versuchen*, my central concern can be addressed in the confines of the first, attitude component.)

(i) (Sharvit 2003:405)
a. John wanted to cut a tomato, but there were no tomatoes to cut.
b. John tried to cut a tomato, #but there were no tomatoes to cut.

(ii) #John tried to ride a unicorn. (Pearson 2013:346)

(34) $[\![\textit{versuchen}\text{ 'try'}]\!]^{c,g} = \lambda P_{\langle c,vt\rangle}.\lambda e$: e has an *agent*. $\forall\,\langle w', x'\rangle$ [being x' in w' is compatible with *agent(e)*'s intentions in $w_e \Rightarrow \exists e'$ $[P(\langle w', x'\rangle)(e') = 1]$ (& the degree of realization of $P(\langle w_e, \textit{agent}(e)\rangle)(e) > 0$)

(adaptation of Grano 2011)

This alternative analysis of *de se* in the context of *try* makes an interesting prediction: Bound variables in the complement of *try* should only have a *de re* reading. To illustrate, according to my analysis the sentence in (35) lacks an embedded subject; therefore *himself* must be bound directly by the controller *Mike* and hence is interpreted outside the scope of *try*.[12]

(35) Mike$_i$ tried to have himself$_i$ be considered for the award.

I leave a more complete discussion of this alternative analysis of intensional OC predicates, including the implications it has for the availability of *de se* interpretations for bound variables in the complement, as a topic for future work.

[12]If anaphors such as *himself* in (35) turn out to have a *de se* interpretation as well, this would suggest that *try* is ambiguous between an attitude predicate (34), and an event predicate with a clausal CONTROL complement and complex PRO. However, absent positive evidence, I stick with the more minimal assumption of *try* being associated with only one denotation (34).

Conclusion

This dissertation has advanced the view that the domain of Obligatory Control (OC) extends to phenomena whose inclusion in this category may, at first glance, seem surprising. Jussive reports, I have argued, are an instance of this kind: The relationship between this sentence type and canonical OC constructions is obscured by the morphologically distinct nature of jussive verbs and infinitives, as well as by the common association of jussives with root contexts. Yet I have shown that a Control analysis can elegantly capture a complex combination of properties characterizing jussive reports in Mongolian and Korean, which in their entirety would be difficult to account for under alternative approaches.

In what follows I shall sum up the main components that constitute my analysis of jussive reports and recap how they can be seen as instances of regular OC environments.

The main empirical contribution of this work consists in the presentation of previously unreported data showing that Mongolian allows for the cross-linguistically rare phenomenon of jussive embedding. Chapter 2 provided detailed discussion of two jussive forms – a speaker-oriented voluntative and a hearer-oriented imperative – in embedded environments, including an investigation of the semantic properties of the jussive subject. In chapter 4, I widened the empirical domain by drawing a connection to similar data concerning embedded jussives in Korean, a move that was facilitated by the comparably rich amount of data on Korean jussive reports found in the literature.

The analysis I have developed in response to this data situates the phenomenon of jussive embedding in the general domain of OC. I suggested to analyze the jussive subject as an instance of PRO, based on parallels in behavior between the two elements concerning the dependence on an antecedent and the requirement of a *de se* interpretation. The specific analysis I chose assimilates PRO to complex *de re* DPs in attitude reports (cf. Percus & Sauerland 2003a) and departs from an analysis of PRO as a semantically empty element in the style of Chierchia (1989). I demonstrated how this analysis of jussive PRO is able to capture both its dependency on a

binder and its *de se* interpretation. In deriving the *de se* property of PRO, my work differs from prior work (Pak et al. 2008b, Madigan 2008, Park 2011) on embedded jussives in Korean, which has focused on the dependency of the jussive subject on a matrix antecedent while neglecting to account for its special *de se* semantics.

I explained in detail why an analysis of PRO as a semantically and syntactically complex expression is preferable over a Chierchia-style semantics for PRO clauses: Not only did an analysis of PRO as complex allow me to capture certain (otherwise unexpected) effects involving bound *de re* pronouns, but it also made it possible to maintain the conceptually simpler view that ϕ-features are interpreted at LF – a view that would not have been tenable under a property analysis of PRO clauses. In demonstrating that ϕ-features on PRO are semantically interpretable, my analysis complemented recent claims whereby, even in focus contexts (which have been central in the argument for vacuous features), ϕ-features have semantic content. Taking these together, this may well be suggestive evidence against the theoretical necessity of semantically vacuous ϕ-features.

In light of the observed parallels between canonical PRO clauses and jussives, I sketched an account of OC constructions according to which the resemblance to embedded jussives is rooted in certain commonalities in the underlying structure that go beyond the presence of complex PRO: In particular, OC complements under intensional predicates, similar to JUSSIVE clauses, were taken to denote a set of contentful events introduced by a functional element CONTROL in C.

Finally, an event based treatment of embedded jussives also afforded a natural extension to matrix occurrences on the assumption that the content denoted by matrix jussives is anchored to the utterance event. An interesting point coming out of this thesis is therefore that the behavior of embedded jussives simultaneously offers crucial insights into the semantics of jussives in an environment where they are cross-linguistically more common.

***

The proposed generalization of an analysis of jussives to OC constructions provides rich ground for further exploration and generates a variety of questions in different domains of inquiry. In what follows I shall highlight some of them.

As evidence for the kinship between embedded jussives in Korean and Mongolian, and infinitival OC complements I have repeatedly pointed at the semantic parallels connecting their respective subjects. Meanwhile another semantic affinity, which is more subtle in nature and obscured by differences in morphology, may have gone unnoticed: Jussives are modal in nature; however, so are bare infinitives in certain

environments such as infinitival questions and infinitival relatives (cf. Bhatt 1999, Hackl & Nissenbaum 2012).

(36) a. What to cook?
b. The documents for you to prepare are in the top drawer.

We could adopt the view that infinitives contribute a covert modal in corresponding environments. Though the flavor of "modal" infinitives varies and depends on the specific context, in infinitival complements of canonical OC verbs such as *promise, ask, hope*, the modal would be disambiguated towards bouletic modality of the type characterizing the JUSSIVE modal in Mongolian and Korean. In terms of the functional make-up, the CONTROL head assumed to underlie canonical OC complements in English could be replaced with a covert modal.

However, there is a caveat to this view: Though the fact that we routinely used canonical infinitival OC constructions to translate Korean and Mongolian promissive reports may suggest the presence of a modal component *somewhere* in the construction, certain data could be used to argue that modality cannot be tied directly to the infinitive: As pointed out earlier in this work and illustrated below, the modality detected in OC constructions is preserved if the infinitive is replaced with a finite clause – which makes one wonder if the modality is in fact encoded in the embedding verb.

(37) a. Liz promised to leave.
b. Liz promised that she would leave.

(38) a. Peter hat mich gebeten das Formular auszufüllen.
Peter AUX me asked the form fill-in.INF
'Peter asked me to fill in the form.'
b. Peter hat mich gebeten, dass ich das Formular ausfülle.
Peter AUX me asked that I the form fill-in1.SG.PRES
'Peter asked me that I please fill in the form/to fill in the form.'

Though I cannot provide a definitive answer to the question where modality is located – if it is part of the embedded clause or encoded in the matrix predicate –, the presence of a modal component in OC constructions and the observation that infinitives trigger covert modality elsewhere, should eventually be accounted for.

In section 5.7, I proposed that the fact of Korean *promise* combining with jussive complements could be used as an argument for the choice of a Neo-Davidsonian semantics over a standard selectional analysis. Recall that in Korean jussive reports involving *promise*, the bouletic modality contributed by JUSSIVE seems to be "swal-

lowed" by *promise*; i.e., a Korean sentence [leave-PROM promise] is rendered as a promise to leave, rather than as a promise to *want* to leave. I pointed out that this behavior could suggest that Korean *promise* is a subtype of *say*, which involves an additional component deriving its richer meaning; for example, *promise* could denote an event of saying whose *agent* makes a commitment in relation to the content of what is said. Though this specific proposal is speculative and of a preliminary nature, it can be used to make my general point: In a Neo-Davidsonian semantics, where predicates are sets of events open to modification by other event predicates, semantic relationships of the type existing between *say* and *promise* would be expected. I noted that a Neo-Davidsonian semantics is not theoretically *necessary* to account for the facts; however, in a selectional view, where a verb such as *promise* selects for a propositional argument, the relationship between marked subtypes of speech verbs and an unmarked verb *say* could not readily be derived compositionally.

While the case of *promise* described above is just one example, the reasoning can be extended to other marked speech verbs such as *order* and *advise*, which allow for jussive embedding in Korean similar to *promise*.

My proposal advances a new perspective on the widely discussed question of controller choice: While the canonical view assumes controller choice to be driven by the embedding verb, I offer an account that assigns this function to PRO as an element in the embedded clause. A priori, we therefore expect full flexibility regarding the choice of controller for a given matrix verb (as long as the resulting meaning is consistent with its conceptual content). This prediction is borne out in the case of embedded jussives under *say*: Both Subject Control (by way of voluntatives/promissives) and Object Control (by way of imperatives) are possible under *say*; the choice in any given circumstance is expressed by overt morphology on the embedded verb. Against this background it seems natural to attribute controller choice to the embedded clause.

My analysis suggests that jussives under *say* are representative of the general state of affairs. This, of course, confronts us with the task of accounting for the lack of flexibility regarding controller choice in traditional OC complements, in particular, as they do not provide morphological clues for controller choice, unlike jussive clauses. This task is non-trivial. We may wonder if the absence of certain combinations falls out from principles of semantic well-formedness. This, of course, predicts that minimal pairs, where synonymous predicates require distinct choices of controller, should exist. This, for example, would mean that the Korean and Mongolian verbs for *say cannot* have the same semantics as English *tell*, as only the former allow for both Subject and Object Control.

Attempts to explain controller choice for PRO as a pure function of locality face

obvious problems, given the possibility of Subject Control verbs such as *promise* that also feature a (more local) object argument.

A related question arises regarding the phenomenon of controller shift, which has been correlated with the semantics of the PRO complement and, in particular, with PRO being non-agentive (cf. Uegaki 2011). Of course, defining a controller as shifted requires that there be a designated default controller as our point of reference. My system does not provide such a point of reference as the identity of the controller is solely encoded on PRO itself.

The problem of how to capture selectional restrictions in the advocated Neo-Davidsonian framework extends to the distribution of embedded jussives: A priori, the only restricting mechanism supplied by my system is the presupposition carried by the JUSSIVE modal that the events it denotes have an *agent* a *goal*, and *content*. Apart from the class of events that cannot reasonably be taken to denote events with propositional content, more promising candidates such as *believe*, *regret*, *realize* could be excluded based on the absence of a *goal* argument. However, in light of predicates such as *explain* and *write to*, which do provide a *goal* argument but do not embed jussives, the assumption of certain lexical specifications may be necessary to describe the full range of distributional facts. The question where to encode corresponding restrictions does not have a straightforward answer in my account, which relies on modification as a heavily flexible compositional mechanism.

I made a case that complex PRO is superior compared to an empty alternative in accounting for jussive reports and intensional OC predicates, while also stating that no other type of PRO exists. At the same time, I noted that neither complex PRO, which makes reference to mental concepts (acquaintance relations), nor the CONTROL head, which designates events with propositional content, are appropriate in the case of extensional OC predicates (represented by aspectual and implicative predicates, as well as the ability modal *able*), which do not describe attitudes. Rather than introducing a second, semantically empty PRO element, I suggested that corresponding predicates embed VP complements and therefore lack an embedded subject entirely. Their restructuring behavior was taken as evidence in favor of the assumption of such sub-clausal complements. However, the complements of an intermediate class of predicates represented by *try* show signs of intensionality and seem sensitive to the *de se/de re* distinction, while syntactically behaving like bare VPs. I concluded that there must hence be a second path to *de se*, represented by *try*, which involves direct quantification over centered worlds, possibly along the lines of Chierchia (1989). I pointed out that the adequacy of such an analysis could be evaluated by examining available interpretations for bound variables in the complement of *try* in configurations where *try* displays restructuring behavior: Given the assumption of

a subject-less VP complement in such cases, any bound variable in the complement would be bound directly by the matrix controller. As a result, the only available interpretation would be *de re*. If this prediction proves to be viable, it would provide evidence that *de se* can indeed be arrived at in two different ways.

Following Kaufmann (2012), I adopted a modal analysis of jussives assuming a uniform modal JUSSIVE to underlie the various morphologically distinct forms in Mongolian and Korean. Building on Kaufmann's (2012) and Stegovec & Kaufmann's (2015) presuppositional approach to the performative component of imperatives, my work aimed at reconciling their analysis with the inherent flexibility of the JUSSIVE modal, whose target varies between the speaker and the addressee. In this context my account made salient a conceptual question: How rich is the semantic structure of events? It is conventional wisdom that events can have participants such as *agent, goal, theme*. Morever, the assumption that events have propositional content is natural in the case of speech events and attitude states. However, in my account of jussive performativity, I attributed to events the ability to also designate entities such as a *question under discussion*, which is typically viewed as a property of contexts. It will have to be determined if this assumption can be upheld.

Finally, as this thesis is a thesis about jussive embedding, let me end with a pressing question that inevitably arises in any study of the phenomeon: What determines whether or not a language can embed jussives? Maybe it is a matter of the lexicon and requires the availability of exactly the type of modal JUSSIVE represents. A more likely answer, though, seems to be that it arises from a complex interaction of factors. The question as to which components may conspire, and in what way, to allow for this result, however, will have to be left open.

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