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Non-canonical Control in a Cross-linguistic Perspective

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Non-canonical control in a cross-linguistic perspective

Introduction to the volume

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1. Issues in non-canonical control

Control, typically defined as a specific referential dependency between the null-subject of a non-finite embedded clause and a nominal co-dependent of the matrix predicate, has been subject to extensive research in the last 50 years. Most researchers in this field of study agree that a distinction between Obligatory Control (OC) and Non-Obligatory Control (NOC) is relevant to the typology of control phenomena. Based on this division, the canonical case of OC is a referential dependency between a unique nominal argument of a clause-embedding predicate and the null-subject of an infinitival complement of this predicate, as illustrated in (1).

(1) a. John$_i$ tried [PRO$_i$ to bake a cake].
b. Mary$_i$ persuaded John$_j$ [PRO$_{j/*i}$ to bake a cake]. (Stiebels 2007: 1)

The canonical case of NOC shows up with null-subjects of non-finite adjunct (2a) or subject clauses (2b). In this case, the referent(s) of the null-subject need not be identified with the referent of any dependents of the matrix predicate.

(2) a. There will be no progress [without PRO investing economic and human resources].
b. Clearly, [PRO confessing my crime] was not something they anticipated. (Landau 2013: 232)

While the division between OC and NOC is relatively uncontroversial, there is still less agreement as to the precise nature of these two control types and, as a result, their analysis.

The canonical cases of control have been the starting point for a number of different accounts (we roughly follow and amend Landau's 2013 division here). OC has been in the focus of syntactic analyses in terms of agreement (Landau

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2000 et seq.) or movement (Hornstein 1999, 2001, 2003; Polinsky & Potsdam 2002; Boeckx & Hornstein 2003, 2004, 2006; Hornstein & Polinsky 2010), or various combinations of these (see among others Sheehan 2014; Fischer 2018). Other theories account for OC in terms of (syntactic) anaphora or variable binding (e.g. Manzini 1983; Bouchard 1984; Koster 1984; Borer 1989; Wurmbrand 2002; Landau 2015), or more generally account for it in semantic-pragmatic terms (e.g. Jackendoff 1972, 1974; Bresnan 1982; Růžička 1983; Chierchia 1984, 1989; Farkas 1988; Sag & Pollard 1991; Culicover & Jackendoff 2001; Jackendoff & Culicover 2003; Culicover & Jackendoff 2005; Pearson 2016).

Canonical cases of NOC have been considered in terms of logophoricity (Kuno 1975; Williams 1992; Landau 2000, recently McFadden & Sundaresan 2018) or pronominal reference (e.g. Bresnan 1982; Manzini 1983; Sag & Pollard 1991). While the canonical cases of OC or NOC usually are in the center of the individual analyses, it is often not straightforward how to extend them to non-canonical control phenomena.

In light of this ongoing discussion, this volume provides a cross-linguistic perspective on control phenomena with a focus on the non-canonical cases in order to make a step forward in the analysis of control. We take non-canonical control to be instantiated in cases (i) which show NOC or No Control (NC) in complement clauses, or (ii) which show OC in subject or adjunct clauses, (iii) in which the controlled subject is not in an infinitival clause or (iv) in which there is no unique controller in OC (partial control, split control, other types of controllers).

The contributions to this volume address central questions in the study of control from the perspective of such non-canonical cases. Major concerns in any analysis of control are the restrictions on the selection of the controller, the properties of the constituent hosting the controlled subject, as well as the syntactic and lexical properties of the matrix predicate. From a cross-linguistic perspective, the volume addresses variation regarding the contribution of these components of control and how they interact with general properties of individual languages. Insights into the correct empirical generalizations with regard to these properties provide the basis for further development of current control theories. In particular, cross-linguistic investigations have added valuable insights to the overall picture, as it has been shown that the concept of finiteness and the covertness of the embedded subject are not as closely linked as early analyses of control suggested (see Landau 2013 for an overview). Against this background, this volume collects studies considering a wide range of languages, namely English, German, Norwegian, Spanish, Portuguese, Romanian, Modern Greek, Hungarian, Japanese and Korean, addressing empirical and theoretical issues that pertain to questions such as the following:

1. *In which languages and/or contexts do we find Non-Obligatory Control or No Control in complement clauses, and how should these cases be accounted for?*
   One such language is Korean, as discussed in the contribution by Lee & Berger (this volume). They show that OC in object control configurations is blocked when the complement clause moves or when the embedded subject is overt (or both), and they provide a derivational analysis of the observed split between OC and NC in these complements of logophoric object control verbs.

   Another example is (European) Portuguese, focused on in Barbosa (this volume). Barbosa argues that inflected infinitival complements of desideratives, commissives, and of certain object control verbs in European Portuguese are not instances of OC. Instead, they are argued to contain *pro* and are shown to be subject to the same mechanisms that are responsible for the interpretation of *pro* in finite clauses. Barbosa proposes to account for inflected infinitives in terms of bare TP projections.
2. *How does possible overtness of the embedded subject interact with Obligatory Control, Non-Obligatory Control or No Control properties of the relevant structures?*
   In Korean, for instance, overt realization of the embedded subject can bleed OC, thus giving rise to unexpected instances of NC in complement clauses. At the same time, anti-author restrictions are upheld as these are part of the meaning of the embedding complementizer (see Lee & Berger, this volume).

   While the overt embedded subject leads to NC in Korean, this doesn't necessarily have to be the case. Szécsényi (this volume) shows that OC needs to be maintained even with an overt embedded subject in Hungarian postverbal-only focus constructions. In this case, the overtness is conditioned by information structure: the embedded subject must be overtly realized because it is focused. Szécsényi relates these seemingly monoclausal focus constructions to modal existential *wh*-constructions (MECs). In consideration of the specific syntactic properties of Hungarian as well as relevant cross-linguistic insights (e.g. Šimík 2011, 2013; Burukina 2020), Szécsényi argues for an analysis in which both of these constructions have a biclausal structure underlyingly, involving control and covert modality.
3. *In which languages and/or contexts do we find Obligatory Control in adjunct or subject clauses, or in non-clausal structures (e.g. nominals and gerunds)?*
   Spoken Spanish, focused on in Herbeck (this volume), provides interesting evidence for the role of morphosyntactic aspects and pragmatic factors such as topicality in establishing control relations in infinitival adjunct clauses. The corpus data discussed by Herbeck yield no clear picture as far as the canonical criteria for distinguishing between predicative versus logophoric control or between PRO and *pro* are concerned. According to Herbeck, the control

properties of null and overt subjects in these structures should be treated in terms of scalar preferences rather than binary distinctions.

Obligatory Control in English adjunct clauses is addressed by Gerard (this volume) from the perspective of first language acquisition. Gerard's contribution expands our questions concerning OC in adjunct clauses by asking what kind of evidence a child needs to acquire this specific instance of non-canonical control and whether or not this evidence is available in the linguistic input, as well as by exploring broader implications on the role of Universal Grammar in language acquisition.

Another case of non-canonical adjunct control is discussed in Fischer & Høyem (this volume). They propose for a range of different adjunct clauses that we do find OC in adjuncts. These cases are non-canonical in two respects: first, we observe OC in adjuncts, second, the controller is not a nominal co-argument, but actually the event argument itself.

4. *How should non-canonical controllers or control interpretations such as, e.g., backward control, partial control and split control be accounted for?*

Alexiadou & Anagnonstopoulou (this volume) discuss and reevaluate the evidence for backward control in Greek. They argue that what we observe in these cases is a long-distance relationship, namely long-distance agree (=LDA). They carefully distinguish two types of LDA, obligatory LDA that relates an uninterpretable embedded T to a higher T and optional LDA, which relates two T-heads over a phase-boundary. As a result, these cases of LDA can only be considered cases of backward control in those analyses in which control is based on Agree.

A second case of such non-canonical cases is partial control. Partial control, discussed extensively in Landau (2000) and much subsequent work, refers to a configuration in which the controlled embedded subject (PRO) denotes a set of individuals of which the individual denoted by the controller is a proper subset. To illustrate, such a reading seems to be available for all the sentences in (3) (taken from Pearson 2016: 692), i.e. the understood subject of the respective complement clauses includes the matrix subject *John,* but the two are not necessarily identical.

(3) a. John wanted to assemble in the hall.
b. John expected to go on vacation together.
c. John voted to work on the problem as a team.

Matsuda (this volume) challenges the traditional notion that partial control depends on the lexical semantics of the embedding predicate and proposes an analysis that derives these non-canonical control interpretations from the internal structure of the embedded PRO.

5. *Which properties of (non-)canonical OC, NOC or NC configurations are due to the controller, the constituent hosting the controlled subject or the matrix predicate? Which properties are derived from the interaction of different components and how?*

Matsuda (this volume) investigates in detail how the force of the complement clause (marked overtly in Japanese), the properties of the matrix predicate, and the properties of the controlled subject interact to give rise to non-canonical control interpretations. The Japanese data discussed by Matsuda suggest that the connection between the semantics of the matrix predicate and the range of possible interpretations of OC PRO is not as tight as is often assumed.

Lee & Berger (this volume) investigate how properties of the embedded subject (overt or covert realization) as well as syntactic movement of the infinitival complement clause affect the interpretation of the embedded subject in Korean, including discussion of the role of complementizers in control constructions in the language. While the former obstruct a control relationship, the anti-author requirement of a complementizer remains stable.

Giurgea & Cotfas (this volume) discuss OC phenomena in reflexive-based passives (so called *se*-passives) in Romanian. They show that *se*-passives with OC predicates take clausal complements which must also contain a *se*-passive. This observation applies both to infinitival and subjunctive complements. Giurgea & Cotfas suggest that in these constructions, control with implicit agents of passives takes place. They argue that Romanian *se* -passives are constructions in between typical actives and typical passives: additionally to a nominative theme, they also have a projected external argument to be controlled, whose features must match with the controller.

Finally, the generalizations about the status of inflected infinitival complements in European Portuguese as structures containing *pro* rather than being an instance of OC apply to specific classes of attitude verbs such as desideratives, commissives, and object control verbs such as *persuadir* 'persuade' and *convencer* 'convince' (Barbosa, this volume). As pointed out by Barbosa, it remains an open question whether these generalizations hold for inflected infinitives in non-attitude complements. Thus, the role of the matrix predicate for the licensing of OC (versus NC) in inflected infinitival complements is still subject to future research.

2. Overview of the book

Part I. Non-canonical control in complement clauses

Based on evidence from different languages, the contributions in Part I discuss non-canonical control in complement clauses. One such case can be observed when the overt nominal is found in the embedded clause, and we find some type of long-distance agree or backwards control (A. Alexiadou & E. Anagnstopoulou, K. Szécsényi). The availability/obligatoriness of OC, NOC or NC in complement clauses can be influenced by features of the embedded clause such as type of infinitive (P. Barbosa) or type of complementizer (H. Lee & M. Berger; A. Matsuda). It can also be induced by the matrix verb (P. Barbosa; H. Lee & M. Berger) or depend on the syntactic position of the complement clause (H. Lee & M. Berger). Additionally, M. Cotfas & I. Giurgea document a novel restriction to agent controllers in Romanian. With these perspectives, the outlined contributions broaden the empirical basis for the discussion of control relations in complement clauses, discuss the parameters of cross-linguistic variation and further specify the role of lexical properties (both of verbs and complementizers) in OC. They provide different perspectives on how these aspects should be implemented in a theory of control as a syntactic, semantic and/or pragmatic phenomenon.

Artemis Alexiadou & Elena Anagnostopoulou: Backward control, long distance agree, nominative case and TP/CP transparency
The paper by A. Alexiadou & E. Anagnostopoulou discusses issues in backward control. They argue that a nominative noun phrase can be licensed in-situ in an embedded clause (backward raising and backward control) when the matrix T and the embedded T enter an agree relationship with each other and the embedded nominative. They find two types of such a relationship: one obligatory that licenses uninterpretable embedded T and one optional that can cross a CP boundary. This paper contributes to the discussion of the limitations of backward control, a configuration which has been central to the discussion of the movement theory of control.

Pilar Barbosa: Alleged obligatorily controlled inflected infinitives
P. Barbosa discusses inflected and non-inflected infinitives in European Portuguese and addresses the question of whether or not these two types of infinitival complements can be considered as instances of OC. Adopting the semantic approach to control put forward by Jackendoff & Culicover (2003), she argues that structures with inflected infinitives should be analyzed in terms of (accidental) coreference governed by pragmatic factors rather than by OC. She follows Jackendoff & Culicover (2003) in assuming that OC verbs require volitional actions as their

infinitival arguments and proposes that inflected infinitival complements denote situations, which may include actions. The semantic restrictions on inflected infinitival complements and their subjects are related to coercion into volitional actions. Under Barbosa's approach, the positing of two species of OC (OC in inflected infinitives and OC in non-inflected infinitives) appears superfluous.

Ion Giurgea & Maria Aurelia Cotfas: Agent control in passives in Romanian
The contribution by I. Giurgea & M. A. Cotfas is devoted to control by the agent of *se*-passives in Romanian. *Se*-passives require an obligatory repetition of *se* on the embedded verb, both in infinitive and in subjunctive complements. The authors argue that those structures in Romanian do involve control, which in turn implies that they must involve an external argument position within the embedded clause that can be controlled. Giurgea & Cotfas propose that control with those double *se*-configurations is licensed by feature matching rather than feature valuation: the null external argument of the matrix verb (PRO) and the projected external argument of the embedded verb (also PRO) are assumed to be generated in the same position and bear the same features ([+3Person, +Arb]).

Hyunjung Lee & Mike Berger: On the obligatory versus no control split in Korean
The contribution by H. Lee & M. Berger discusses factors that license No Control (NC) in complement clauses in Korean. The authors show that, while canonical object control configurations have the expected Obligatory Control properties, OC can be bled by scrambling of the infinitival clause and/or overt realization of the embedded subject. In both of these cases, the embedded subject can be interpreted *de re* and can refer freely, with the restriction that it cannot be interpreted as referring to the AUTHOR, i.e. the attitude holder realized as the matrix subject. Lee & Berger contrast these observations with subject control cases where the above mentioned factors cannot bleed OC; obligatory subject control is retained both with scrambling and overt infinitival subjects. The authors propose an analysis with two main ingredients: (i) the different complementizers occurring in object and subject control cases impose semantic restrictions on the interpretation of the embedded subjects, and (ii) embedded subjects can be merged as minimal pronouns (in the sense of Kratzer 2009 a.o.) that end up as *pro* or PRO depending on the syntactic configuration, or as overt pronouns with inherent φ-features.

Asako Matsuda: Control from inside: Evidence from Japanese
A. Matsuda investigates how the availability of non-canonical control interpretations such as partial control and split control depends on the (modal) properties of the complement clause. Based on evidence from Japanese, the author proposes that the modality of control complements restricts the range of interpretative options

for obligatorily controlled PRO. Under Matsuda's analysis, the modal suffixes in the Japanese complement clauses realize indexical agreement between the complementizer and different representations of speech act participants in the complement clause. The embedded PARTICIPANT DP ultimately serves as the controller and restricts the interpretation of the covert embedded subject (=PRO) from inside the complement clause. The study thus contributes new insights on how properties of the embedded constituent condition the availability of non-canonical control interpretations.

Krisztina Szécsényi: Control and covert modality in Hungarian: MECs and postverbal-only focus constructions
K. Szécsényi considers the interaction of control, syntactic structure and focus in modal constructions in Hungarian. She observes for a subset of apparently mono-clausal structures with postverbal-only focus that the modal interpretation and the unexpected post-verbal focus position should be explained by analyzing these structures as bi-clausal, in parallel to modal existential *wh*-constructions (MECs). The paper adopts an implementation in which the embedded verb is base-generated in an embedded reduced clause, but moves and adjoins to a modal head in the matrix clause. Both constructions – the Hungarian modal construction and the MECs more generally – are analyzed in terms of Obligatory Control, but since the embedded subject is focused in postverbal-only focus constructions, it must be realized overtly.

Part II. Non-canonical control in adjunct clauses

The papers in the second part address non-canonical control in adjunct and subject clauses. They range from the analysis of a specific subtype of control (*event control* in the contribution by S. Fischer & I. F. Høyem), the acquisition of OC (and also NOC) in adjuncts (J. Gerard) to the role of factors in the availability of OC, NOC and NC with adjuncts such as the type of introducing complementizer, the availability of *pro*/agreement on the embedded T and information structure (P. Herbeck). The study of OC into adjuncts helps to tease apart the configurational aspects from the selectional properties, as well as the role of the availability of overt arguments in configurations that allow for or require control.

Silke Fischer & Inghild Flaate Høyem: Event control
S. Fischer & I. F. Høyem address Obligatory Control in adjuncts, and concentrate on a special subtype, namely event control, which has received little attention in the research literature so far. The paper addresses first the conditions under which

event control can be established in English, German and Norwegian. Event control means that the PRO subject in the adjunct clause receives its interpretation from the event argument in the matrix clause. They show that this type of control should be classified as Obligatory Control and provide an analysis in a hybrid theory of control (Fischer 2018).

Juliana Gerard: Adjunct control and the poverty of the stimulus: availability vs. evidence
J. Gerard considers Obligatory Control in non-finite adjunct clauses from the perspective of first language acquisition. Based on relevant corpus data, the author discusses whether and how the structural features of OC in adjuncts (i.e. high attachment of the adjunct clause and c-command by the controller) could be acquired from the linguistic input. The conclusion of the study is that adequate evidence for these features is unavailable in the input and that therefore the features must be innate. In consequence, only features that vary cross-linguistically, such as complementizer form or the language-specific realization of finiteness, are needed from the input.

Peter Herbeck: The (null) subject of adjunct infinitives in spoken Spanish
Infinitive adjunct clauses in Spanish are addressed in the contribution by P. Herbeck. In particular, the paper seeks to explore the nature of null and overt subjects and the mechanisms determining control in those structures. Based on the results of a corpus study, Herbeck shows that the subjects of adjunct infinitives in spoken Spanish do not match in an obvious way the division between predicative versus logophoric control, and therefore cannot be handled in terms of the PRO / *pro* distinction. He argues that control in this configuration is rather a scalar phenomenon at the syntax-pragmatics interface and subject to preferences.

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PART I

Non-canonical control in complement clauses

Backward control, long distance agree, nominative case and TP/CP transparency

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In this paper, we revisit the evidence that what has been analyzed as Backward Control in Greek is just another instance of Long Distance Agree. Through the formation of such long distance chains, Greek allows non-local assignment of nominative. We further argue that long distance chains come in two versions, obligatory ones and optional ones; the former involve uninterpretable T in the embedded clause, while the latter involve the formation of a chain between matrix T and embedded T with interpretable features across a CP phase boundary, which can be suspended. We finally attempt an explanation for the observation that [+Perfective] Aspect may disallow long distance chain formation in Greek.

1. Aims and goals

In this paper, we address backward dependencies in Greek, which are present in control and raising environments. We suggest that these instantiate Long Distance Agree (LDA) dependencies of the type in (1).

(1) $[\ T\varphi_k\ [_{TP/CP}\ T\varphi_k\ DP\varphi_k\ ]]$

In (1), a nominative subject DP in an embedded clause agrees in phi-features with both the matrix and the embedded predicate. While in earlier work, (1) was taken to instantiate Backward Control in the case of control predicates and LDA in the case of raising, in this paper we propose that both control and raising environments are amenable to an LDA analysis. As LDA is also instantiated across a CP boundary in Greek (unlike pro-drop languages in Romance), long distance dependencies in this language reveal the signature property of null-subject languages (NSLs) in (2), as argued for in Alexiadou & Anagnostopoulou (forthcoming), cf. Holmberg (2005):

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(2) NSLs have T with interpretable φ-features which are not deleted after checking and valuation, thus being able to form Long Distance chains via Agree. (cf. Ura 1994)

After establishing this picture, we turn to a discussion of the domains and the conditions that allow and disallow the formation of such LD chains.

The paper is structured as follows. In Section 2, we offer an overview of Control and Raising in Greek. In Section 3, we turn to a formal analysis of LDA. In Section 4, we discuss the conditions under which LDA can be disrupted. In Section 5, we conclude our discussion.

2. Control and raising in Greek

In this section, we will provide an overview of control and raising phenomena in Greek. We will show that unlike what has been previously proposed in the literature, Greek does not exhibit Backward Control. Rather Backward Control is a sub-case of LDA.

As has been discussed extensively in the literature, Greek lacks infinitives and has Obligatory (Forward) Control (OFC) (see Iatridou 1993; Terzi 1992; Tsoulas 1993; Varlokosta 1994; Philippaki & Catsimali 1999; Spyropoulos 2007; Kapetagianni & Seely 2007; Roussou 2009) and Obligatory (Forward) Raising (OFR) in subjunctives introduced by the particle *na*, (Alexiadou &Anagnostopoulou 1999).

OFC subjunctives are found as complements of verbs such as *ksero* 'know how', *tolmo* 'dare', *herome* 'be happy', *ksehno* 'forget', *matheno* 'learn', *dokimazo* 'try' and aspectual verbs, such as *arhizo* 'start/begin', *sinehizo* 'continue'. Non-OC subjunctives are found with e.g. volitional/future-referring predicates. OFR subjunctives are found as complements of aspectual verbs.

In addition, Alexiadou, Anagnostopoulou, Iordăchioaia & Marchis (henceforth AAIM) (2010) argued that Greek has Backward Control (BC): embedded nominatives found in control constructions are vP internal with a deleted copy in the matrix clause. AAIM (2012) provided evidence that Greek does not actually have backward raising (BR): embedded nominatives in raising constructions involve LDA, meaning that there is no deleted copy in the matrix clause.

In this paper, we use the terminology forward and backward in the spirit of Polinsky & Potsdam's (P&P) (2006) typology of Control and Raising in Table 1. P&P argued that under the Copy and Delete theory of movement and the Movement theory of control, Hornstein (1999), control and raising constructions should be analyzed as involving copying of the moved constituent with subsequent deletion of one of the two copies. Depending on which copy is deleted, this gives rise to forward control and raising structures or backward control and raising structures:

Table 1. Typology of Raising and control in P&P (2006)

Higher copy pronounced	Lower copy pronounced	Structure
√	*	Forward Control/Raising
*	√	Backward Control/Raising

A characteristic of Greek, which lacks infinitives, is that in both OFC and OFR environments the embedded verb, similarly to the matrix verb, shows agreement in number and person with the matrix subject, as shown in (3)–(4) for OFC and OFR respectively:

(3) O Petros/ego kser-i/-o na koliba-i/-o.
Peter.NOM /I know.3SG/know.1SG SUBJ swim.3SG/.1SG
'Peter knows how to swim/I know how to swim.'

(4) I porta arhiz-i na skuriaz-i.
The door begin.3SG SUBJ rust.3SG
'The door begins to rust.'

A second property that characterizes both environments is that morphological and semantic Tense is absent from the embedded clause. Evidence for this comes from the fact that it is not possible to vary the verbal form of the embedded verb (Iatridou 1993) or modify it by a temporal adverb (Varlokosta 1994). The latter property is illustrated in (5–6) for OFC and OFR respectively.

(5) *O Petros kseri **simera** na kolibai **avrio**.
Peter.NOM know.3SG today SUBJ swim.3SG tomorrow
'Peter knows today who to swim tomorrow.'

(6) *I porta arhizi **simera** na skuriazi **avrio**.
The door begin.3SG today SUBJ rust.3SG tomorrow
'The door begins today to rust tomorrow.'

Interestingly, as has been pointed out in the literature, similar properties characterize BC and LDA environments, suggesting that there is no formal difference between the two types of configurations, other than the difference in the thematic properties of the main verb. In what follows, we discuss this evidence in turn.

2.1 BC

In environments that AAIM (2010) classified as BC ones in the spirit of Table 1, the subject DP can appear in a number of positions, as shown in (7). As was the case in OFC, the subject agrees with both the embedded and the matrix verb in person and number:

(7) (O **Janis**) emathe (o **Janis**) na pezi (o **Janis**)
John.NOM learned.3SG John.NOM SUBJ play.3SG John.NOM
kithara (o **Janis**)
guitar John.NOM
'Janis learned to play the guitar.'

The pattern in which the subject DP is in the complement clause preceding the object, i.e. the pronunciation of the third copy, qualifies as a BC construction on the basis of P&P's (2006) criteria. Examples such as the one in (7) are biclausal constructions (contra Roussou 2009), as can be shown on the basis of evidence from event modification, among other arguments. What is shown in (8) is that depending on the high or low attachment of the modifier, either the high event can be modified or the embedded event (high attachment vs. low attachment). Note that this test differs from the one employed by Varlokosta (1994) involving temporal adverbs to diagnose the presence of Tense in the embedded clause. The modifiers in (8) are event modifiers and strictly diagnose the presence of two independent events:

(8) a. Pali ksehase na klidosi o Janis tin porta tris fores.
Again forgot.3SG SUBJ lock.3SG John.NOM the door three times
'Once again John forgot to lock the door three times.'
b. Ksehase na klidosi o Janis tin porta tris fores
forgot.3SG SUBJ lock.3SG John.NOM the door three times
afto to mina.
this month
'John forgot to lock the door three times this month.'

More recently, Tsakali, Alexiadou and Anagnostopoulou (TAA) (2017) provided several reasons to doubt that the phenomenon under discussion presents a genuine instance of BC understood as a movement process followed by the pronunciation of the lower copy. TAA conclude that it rather is a further instance of LDA. First, they point out that there is no sharp contrast between OC and NOC verbs. This is illustrated in (9) with an NOC verb, namely 'decide', which, unlike its English counterpart, is an NOC verb in Greek. (9) shows that it patterns like its OC counterpart 'learn' in (7) in all relevant respects (subject placement, backward coreference interpretation when the subject occurs vP internally in the embedded clause). This is significant as the backward dependency observed is not restricted to BC contexts, which have been argued to be cases of OC, but is also found with NOC:

(9) (O **Janis**) apofasise (o **Janis**) na mathi (o **Janis**)
John.NOM decided.3SG John.NOM SUBJ learn.3SG John.NOM
kithara (o **Janis**)
guitar John.NOM
'Janis decided to learn the guitar.'

Second, and more significantly, the availability of backward coreference in embedded VSO constructions is also found with indicative clauses in Greek, introduced by the complemenizer *oti* 'that'. This is shown in (10), where the embedded subject in a that-clause can be interpreted as co-referent to the matrix subject:

(10) Elpizi oti tha kerdisi o Tsipras tis ekloges
Hope.3SG that FUT win.3SG the Tsipras.NOM the elections.ACC
'Tsipras hopes that he will win the elections./ He/she hopes that Tsipras will win the elections.'

TAA further argue that the environments under discussion are non-restructuring contexts with a main clause null thematic subject and an embedded DP subject which is truly vP internal: (i) BC is found with all control verbs in Greek, not just with a small class (the restructuring class), unlike Spanish. (ii) There is no clitic climbing in Greek, presenting evidence that this language lacks restructuring (see Terzi 1992 and others for discussion). (iii) No argument may intervene between finite verbs and infinitives with a postverbal subject in Spanish, a fact that is explained by Ordóñez (2018) as a result of how the verbal complex is created. According to Ordóñez, in order for such a complex to be built, the infinitival TP must move and be adjacent to the matrix verb. The ungrammatical Spanish example in (11), taken from Ordóñez (2018: 54), is due to the fact that an argument intervenes between the matrix verb and the infinitive, blocking the formation of the verbal complex. This is not the case in Greek, (12) where no comparable locality effect is caused by an IO intervener in the matrix clause:

(11) *?les prometió a los familiares [darles el jurado la libertad
to them-promised to the family members to give the jury liberty
a los prisioneros]
to the prisoners.

(12) iposhethikan tis Marias na dosun i dikastes amnistia
promised.3PL Maria.GEN SUBJ give.3PL the judges.NOM amnesty.ACC
sto filakismeno andra tis
to the imprisoned husband hers
'The judges promised Mary to give amnesty to her imprisoned husband.'

Further evidence that we are not dealing with restructuring contexts comes from a comparison between Greek and Bosnian/Croatian/Serbian. As mentioned, Greek has a Mood element, namely, *na,* which is taken to realize MoodP (Philippaki-Warburton & Veloudis 1984; Philippaki-Warburton 1990; Terzi 1992; Rivero 1994). In addition, the language has obligatory V-to-T movement, see e.g. Philippaki-Warburton (1990); Alexiadou & Anagnostopoulou (1998) among others. As a result, *na* in Mood and V in T are adjacent and nothing may intervene between them, except for the negation head *min*, see (13), and object clitics, see (14). Greek negation is relatively high, see Philippaki-Warburton (1990) and Rivero (1994) among many others, which means that the Mood particle *na* is even higher than Neg, in a MoodP close to the left periphery. In particular, as shown in (14), clitics precede the embedded V; as clitics target T, under standard assumptions, and *na* is its standard position, namely Mood, we must conclude that V must reside in T:

(13) kserun [na **min** malonun i daskali tus mathites]
know.3PL [SUBJ NEG scold.3PL the teachers the students.ACC]
'The teachers knew how to scold the students.'

(14) kser**un** [na tus malo**nun i daskali**]
know.**3PL** [SUBJ CL.ACC scold.**3PL the teachers**]
'The teachers knew how to scold them.'

This is unlike the Bosnian/Croatian/Serbian (BCS) data discussed in Todorović & Wurmbrand (2020), which provide evidence for two positions for *da,* the corresponding mood particle in BCS, a high one in T/Mood and a low one in *v* diagnosed via low adverb placement. The relevant facts are illustrated in (15). Todorović and Wurmbrand's argumentation is as follows: *da* spells out [+FINITE] on a clausal head (C, T, *v*), if no other feature of that head overtly expresses finiteness. In (15), we see three types of complements, which differ with respect to the relative word order of *da* and the adverb modifying the embedded verb, tenseless complements, future complements and propositional complements. Tenseless complements, as in (15a) do not involve a *semantically* active Tense, according to Todorović and Wurmbrand (2020). These complements exhibit only one word order, suggesting a low *da*, i.e. *da* on v, the authors argue. By contrast, as Todorović & Wurmbrand (2020) show, complements of *decide* are ambiguous in that they can involve a [+FINITE] feature on T as well, and thus allow both word order orders, see (15b). Finally, propositional complements only allow a higher *da*, which spells out a [+FINITE] feature on C, see (15c).

(15) a. Počelisu {?*da} brže {✓da} stižu.
started.PL.MASC are {?*DA} quicker {✓DA} arrive.3.PL.PRES.IMPFV
'They started to arrive quicker.'

b. Odlučilisu {✓da} brže {✓da} hodaju
decided.PL.MASC are {✓DA} quicker {✓DA} walk.PRES.3.PL.PFV
'They decided to walk quicker.'
c. Kazalisu {✓da} brže {*da} stižu
said.PL.MASC are {✓DA} quicker {*DA} arrive.3.PL.PRES.IMPFV
'They said they are coming quicker.'

As already mentioned, in Greek no adverb can intervene between the modal particle and the verb, thus the only possible neutral word order is one in which the adverb appears in final position. The adverb can appear preceding the modal marker, but in this case, it is focussed and it is moved above MoodP. Thus, we must assume that these embedded clauses contain a syntactically active T layer for the purposes of V-movement. In Section 4, we will further substantiate the point that a semantically null Tense in Greek may have a morphological realization and, as the data in (14) show, it is syntactically active.

Summarizing this sub-section, what has been analyzed as BC is a more general phenomenon, not limited to OC/ restructuring environments, but rather involving the possibility that two agreeing T heads can be interpreted as coreferential, i.e. it can be analyzed as an instance of LDA.

2.2 LDA

Let us now turn to canonical LDA structures involving raising predicates. In raising contexts, AAIM (2012) argue that the subject DP remains in the embedded clause. These also involve biclausal structures, as can be seen by the event modification test, illustrated in (16), showing that each clause introduces an independent event, cf. (8) above:

(16) a. Afti tin xronia arxisa [na pirovolo **dio fores** me to
This the year started.1SG SUBJ shoot.1SG two times with the
oplo mu]
gun my
'This year I started to shoot my gun two times (in a row).'
b. Aftin tin xronia arxisa **dio fores** [na pirovolo me to
This the year started.1SG two times [SUBJ shoot.1SG with the
oplo mu
gun my]
'This year there were two times that I started shooting with my gun.'

An argument from scope shows that there is no copy of the subject in the matrix clause. When the subject modified by *only* occurs in the embedded clause, it is

interpreted below *stop*, see (17b), suggesting that it has not raised to the matrix clause. This contrasts with the preverbal subject where *only* has wide scope, see (17a). This is evidence that (17b) is an instance of LDA and does not involve covert raising of the subject DP:

(17) a. mono i Maria stamatise na perni kakus vathmus.
only Mary stopped SUBJ get.3SG bad grades
'It is only Maria who stopped getting bad grades.' ONLY > STOP

b. stamatise na perni mono i Maria kakus vathmus.
stopped SUBJ get.3SG only Maria bad grades
'It stopped being the case that only Maria got bad grades.' STOP > ONLY

Having shown that LDA is a feature of Greek backward dependencies, in the next section we will turn to an analysis thereof.

3. An analysis of LDA

In this section, we will turn to an analysis of LDA. We will first point out how Greek LDA differs from other well-described cases, as in e.g. Hindi. We will then turn to the basic ingredients of our analysis that capitalizes on the fact that Greek is a null-subject language, in which T does not need to enter Agree in order to license its phi-features and adopts Pesetsky & Torrego's (2007) separation between interpretability and valuation of features.

In Section 2, we concluded that our configurations are examples of LDA: a characteristic of LDA across languages is that agreement between a matrix verb and a nominative subject happens across what seems to be a clausal boundary, see Börjesson & Müller (2019) for a recent discussion of typologically diverse cases of LDA. In Greek, unlike varieties of Hindi discussed in Bhatt (2005), embedded as well as matrix verbal agreement is obligatory. As already mentioned, in all obligatory LDA environments the matrix and the embedded verb agree with the embedded nominative obligatorily, as illustrated in (18)–(19) involving a raising and a control predicate respectively:

(18) Stamati**san**/*Stamatise [na malo**nun i daskali** tus mathites]
stopped.**3PL**/stopped.3SG [SUBJ scold.**3PL** **the teachers** the students]
'The teachers stopped scolding the students.' [AAIM 2012: 36)]

(19) Kser**un**/*Kseri [na ebne**un i daskali** tus mathites]
know.**3PL**/know.3SG [SUBJ inspire.**3PL** **the teachers** the students]
'The teachers know how to inspire the students.' [cf. AAIM 2010]

Second, unlike in e.g. Hindi, LDA takes place across a finite clause boundary, cf. (10) above, suggesting that the size of the embedded complement is not reduced. As we have seen, none of the relevant environments involve restructuring. Thus, while LDA as a general phenomenon is undoubtedly a challenge since it appears to be non-local,[1] it is an even greater challenge in Greek, as its presence take place across finite embedded clauses, as in (10).To address this, we will build on and expand the analysis put forth in Alexiadou & Anagnostopoulou (forthcoming), which we briefly summarize below.

We will assume that DP Raising to Spec, TP is not obligatory in Greek as V-movement satisfies the EPP, as argued for extensively in Alexiadou & Anagnostopoulou (1998). In our structures, V-movement to T takes place in both the matrix and the embedded clause. This leads to the configuration in (20) for Greek obligatory LDA environments: the idea is that these instantiate an obligatory relationship between a matrix T and nominative across an embedded T, manifested as agreement between one nominative DP and many fully agreeing T heads. Such a configuration is supposed not to be available cross-linguistically in Baker (2008) but see Baker (2015).

(20) $[_{TP1}\text{Tns}_{\text{-}\varphi k}\ [_{MoodP}\text{na}\ [_{TPu}\text{Tns}_{\text{-}\varphi k}\ldots\ldots\ [_{vP}\text{NOM}_{\varphi k}]]]]$

Alexiadou and Anagnostopoulou (forthcoming) adopt from Pesetsky & Torrego (2007) the idea that interpretability and valuation are separate. They propose that pro-drop languages have Tense (Tns) with interpretable but unvalued φ-features, i.e. Tns has iφ [ ]. The φ-features of Tns may receive a value in one of two ways: either by entering Agree with an overt DP subject which has valued φ-features, or, when an overt DP subject is not present, by a Topic (Frascarelli 2007) which values the φ-features of a null subject pro in spec,VoiceP. Crucially, because Tns has interpretable φ-features, these do not delete after valuation by their local subject and can continue to participate in further Agree relationships, following Ura (1994). This is what happens in (20). An agreement operation copying the phi-features of the DP onto the embedded Tns leads to the valuation of Tns's φ-features.

Assuming that only DPs bearing nominative are accessible for agreement in Greek, i.e. Agreement is case discriminating and possible only with nominative arguments (Bobaljik 2008; Preminger 2014), this will force agreement between the nominative DP and the lower T in configurations like (20). Once its φ-features are valued, the lower Tns in (20) will further value the phi-features of the matrix Tns by copying its features onto the higher Tns through the formation of an agreement

1. A variety of approaches have been proposed to deal with this issue, recently summarized in Börjesson & Müller (2019).

chain with it. This is possible because the φ-features of Tns are interpretable and do not delete after valuation. This derivation is summarized in (21):[2]

(21) a. [$_{TP}$ Tns$_{-i\varphi}$[ ]……. [$_{vP}$ NOM$_{3PL}$]]]]
Agree with NOM and valuation →
b. [$_{TP}$Tns$_{-i\varphi}$ [3PL]……. [$_{vP}$ NOM$_{3PL}$]]]]
Merge with high Tns→
c. [$_{TP1}$ Tns$_{-i\varphi}$[ ][$_{MoodP}$ na [$_{TP}$ Tns$_{-i\varphi}$ [3PL][$_{vP}$ NOM$_{3PL}$]]]]
Agree with embedded T/ valuation →
d. [$_{TP1}$ Tns$_{-i\varphi}$[3PL][$_{MoodP}$ na [$_{TP}$ Tns$_{-i\varphi}$[3PL][$_{vP}$ NOM$_{3PL}$]]]]

We need to furthermore distinguish between the cases of obligatory LDA (Long distance Raising and OC environments showing backward control) and optional LDA in embedded *that* clauses, as shown in (22a), as well as in embedded non OC subjunctives, as in (22b). The difference between the two types of environments correlates with the absence vs. presence of embedded semantic Tense. When semantic Tense is absent, LDA, i.e. the formation of an Agree chain of the type illustrated in (20), is obligatory. That-clauses and embedded non-OC subjunctives, however, clearly have independent Tense, as shown in (22):

(22) a. Elpizi simera oti tha kerdisi o Tsipras tis ekloges
Hope.3SG today that FUT win.3SG the Tsipras.NOM the elections.ACC
sto mellon
in the future
'Tsipras hopes today that he will win the elections in the future.'
'He/she hopes today that Tsipras will win the elections in the future.'
b. Elpizi simera na kerdisi o Tsipras tis ekloges
Hope.3SG today SUBJ win.3SG the Tsipras.NOM the elections.ACC
sto mellon
in the future
'Tsipras hopes today that he will win the elections in the future.'
'He/she hopes today that Tsipras will win the elections in the future.'

2. An alternative analysis is suggested by an anonymous reviewer. The reviewer suggests that, since matrix T does not bear an uninterpretable feature, LDA can be taken to be based on upward Agree, i.e. the trigger would be [uΓ] on the DP (abstract NOM Case). [uΓ] first links with embedded T (which bears [uΓ], however), and then with matrix T, which can license both chain links. The reviewer furthermore points out that this analysis would be very close to the Pesetsky & Torrego's (2007) view of Agree. It seems to us that this analysis works fine for the obligatory LDA cases, but it is less clear whether it can be employed for optional LDA in NOC and finite-clause contexts.

Unlike in OC and raising subjunctives, in (22) LDA established across an uncontroversial phase head, namely C (this is particularly evident in (22a), but it is arguably true also in (22b)).

We thus need to explain why Agree of the type seen in (20) is obligatory in the absence of an embedded semantic Tns and optional when semantic Tns is present, as in (22). In order to account for this difference, we will appeal to the interpretability of the T features of embedded Tns. Specifically, we propose that in OC and obligatory raising environments, embedded Tns bears [uT] features which need to be valued by the [iT] features of the matrix T in order to be interpreted. This forces the establishment of an Agree relationship between matrix and embedded Tns, leading to an obligatory LDA configuration. On the other hand, in environments like (22) embedded Tns bears interpretable Tense features [iT]. In the latter case, the formation of a chain between embedded and matrix T is optional. Agree can still be triggered by the unvalued φ-features of the matrix T and, if it happens, the result is an LDA dependency of the type illustrated in (20)/(21). If it does not happen, matrix T has its φ-features valued by matrix pro (and a Topic associated with it), resulting in a non-coreferent reading.[3]

We will furthermore assume that an Agree relationship can be established between embedded T and matrix T across a CP boundary in Greek, i.e. C is not an intervener for Agree. This is possible because matrix T and embedded CP enter into an Agree relation. Following Rackowski & Richards (2005), we assume that PIC/intervention effects are obviated if a higher head first agrees with *the entire phase* and then continues on to agree with an element *inside* the phase.[4] These authors use this principle to account for A-bar long-distance *wh*-extraction in Tagalog. Halpert (2016) makes use of this to explain hyper-raising in Zulu.[5]

(23) [$T\varphi_k$ [$_{TP/CP}$ $T\varphi_k$ $DP\varphi_k$]]

3. Notice that our analysis permits both upward probing Agree (in the case of an embedded [uT] entering Agree with a matrix [iT] and when a Topic values the unvalued φ-features of pro in spec,VoiceP) and downward probing Agree (in the case of valuation of the φ-features of embedded T by an overt NOM subject, when a matrix T bearing unvalued φ-features enters Agree with an embedded T the φ-features of which have been valued, and when the matrix T enters Agree with pro valued by a Topic).

4. As correctly noted by an anonymous reviewer, this view actually involves some look-ahead or at least does not work within a strict derivational model. We can circumvent this, however, by adopting Wurmbrand's (2014) system, according to which phase-suspension in Greek happens via selection. See our discussion below in the main text.

5. Note that we do not follow Halpert (2016) in taking the relevant CPs in Greek to be nominal. As we mentioned in footnote 4, and in our discussion in the main text, we follow Wurmbrand (2014) in taking phase-suspension in Greek to happen via selection.

Matrix T-agrees with the CP and then with embedded T, which agrees with the vP internal subject. This leads to *Phase Suspension*, which happens via selection of C by matrix V (Wurmbrand 2014). Phase can be suspended, according to Wurmbrand, if the value of the head of the complement is determined by the selecting verb; when this happens, then the complement does not constitute a phase. Crucially, there is extensive evidence for Greek, discussed in Roussou (2010), that the type of complementizer in the complement clause is determined by the matrix verb, as shown in (24).

(24) a. Ksero oti/*an o Janis elise to provlima.
know.1SG that/if the John solved.3SG the problem
'I know that/*if John solved the problem.'

b. Anarotjeme an/*oti o Janis elis to provlima.
wonder.1SG if/that the John solved.3SG the problem
'I wonder if/*that John solved the problem.'

c. Xerome pu/*oti o Janis elise to provlima.
am-glad that the John solved.3SG the problem
'I'm glad that John solved the problem.'

d. Thelo na/*oti liso to provlima.
want.1SG SUBJ/that solve.1SG the problem
'I want to/*that (I) solve the problem.'

Roussou shows when all three *oti, na,*and *pu* can occur, they differ in interpretation; for instance, in (25) *pu* is factive.

(25) Thimame oti/pu dhjavaze poli.
remember.1SG that read.3SG much
'I remember that he used to read a lot/I remember him reading a lot.'

Following Wurmbrand (2014), we assume that verbs that impose a value selection restriction on their complements are lexically specified with an uninterpretable valued feature encoding the specific value. For instance, in Greek subjunctive taking verbs like *know* are specified for *u*F: *subjunctive*. Crucially, the uninterpretable feature of the selecting verb becomes dependent on a specific complement.

The final ingredient we need to appeal to is the no Activity Condition (Nevins 2004; Carstens & Diercks 2013). We already mentioned that reviving Ura (1994), (2), and building on Alexiadou & Anagnostopoulou (1998) and Barbosa (2019), we adopt the view that NSLs have T with interpretable φ-features [iφ] which remain active after checking and valuation, thus licensing LD chains via Agree across a phase head. This means that NSLs that have phase-suspension permit Hyper-Raising. Crucially then LDA in Greek involves agreement chains that are made possible due to the NS status of the language and phase suspension of the embedded CP.

Let us now turn to some cases of LDA disruption.

4. LDA disrupted

In this section, we turn to a preliminary discussion of three conditions under which LD chains are disrupted in Greek, which will lead us to scrutinize the role of verbal morphology in the language. A first environment where this happens is when another agreement chain intervenes. Greek entirely lacks the counterpart of constructions like *The children are likely to win,* as shown in (26),which display obligatory agreement in gender and number between the matrix subject and the adjective, disrupting the agreement chain (in person and number) between the matrix and the embedded T, as depicted in (27):

(26) *Ta pedhia ine pithana na kerdisun.
the children are likely SUBJ win.3PL
Intended: 'The children are likely to win.'

(27) *[DP$\varphi_{person/number/gender}$ T$\varphi_{person/number}$ **Adj$\varphi_{gender/number}$**[$_{TP}$ T$\varphi_{person/number}$]]

Second, LDA only takes place when the chain between the matrix and the embedded T is not disrupted by a preverbal subject DP. When a preverbal subject occurs in *that*-clauses, a clear Principle C effect arises (TAA 2017).

(28) Elpizo/-i oti o Tsipras de tha kerdisi tis ekloges.
Hope.3SG that the Tsipras.NOM NEG FUT win.3SG the elections.ACC
'I hope that Tsipras will not win the elections/ He/she hopes that Tsipras will not win the elections.'

This leads to the conclusion that Agree between T heads can happen as long as no DP subject intervenes between them, as illustrated in (29), for reasons that remain to be understood:

(29) a. [Tφ_k [$_{TP/CP}$ Tφ_k DPφ_k]]
b. *[Tφ_k [$_{TP/CP}$ DPφ_k Tφ_k]]

Potentially, there is a third condition governing obligatory vs. optional LDA reducible to phase-hood. We have argued on the basis of clitic placement and the position of the Mood subjunctive marker that null Tense in Greek does not imply the absence of the TP layer, contra Wurmbrand (2014).We have also presented evidence that obligatory LDA phenomena in subjunctives take place when the embedded Tense is simultaneous with the matrix Tense and cannot be modified by an independent temporal adverb. Interestingly, this happens when the embedded verb carries imperfective morphology. By contrast, when embedded T is non-simultaneous with matrix T, agreement between a nominative DP and the matrix verb may be disrupted (coreference is in many cases possible, but optional, as we have seen): this happens whenever an embedded T is perfective e.g. *figi* (future irrealis subjunctives,

also implicatives and factives) or when it can be inflected for Tense showing the [+/−Past] distinction, e.g. *efige* in (30) which is marked for past tense and bears perfective aspect.

(30) o Petros elpizi na figi/efige i Maria.
Peter.NOM hopes SUBJ go.3SG/left.3SG Mary.NOM
'Peter hopes to leave/Peter hopes that Mary left.'

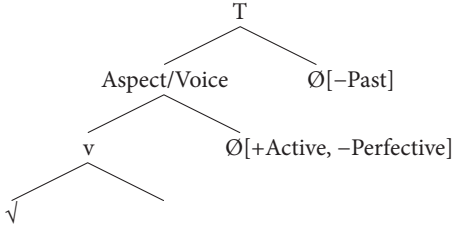
Thus, the accurate condition forcing obligatory LDA should also make reference to null Tense and null Aspect morphology. Importantly, Greek verbal morphology shows an interesting correlation between the presence of obligatory LDA and the absence of an exponent for Aspect. Christopoulos & Petrosino (2018) examine Greek verbal morphology in detail with a different aim in mind, but it is important for our discussion to look at their arguments. Consider the paradigm of the verb *idrio* 'found' in the active Voice, discussed in their paper (note that stress shift for [+Past] is marked only for 1SG in Table 2, the rest of the paradigm behaves alike):

Table 2. Verb paradigm of the verb *idrio* in the active Voice

ACT	**−Perfective**		**Perfective**	
PN	**−Past**	**Past**	**−Past**	**Past**
1.SG	**idrí-o**	**ídri-a**	idrí-**s**-**o**	**ídri-s-a**
2.SG	idri-is	idri-es	idri-s-is	idri-s-es
3.SG	idri-i	idri-e	idri-s-i	idri-s-i
1.PL	idri-ume	idri-ame	idri-s-ume	idri-s-ame
2.PL	idri-ete	idri-ate	idri-s-ete	idri-s-ate
3.PL	idri-un	idri-ane	idri-s-un	idri-s-an

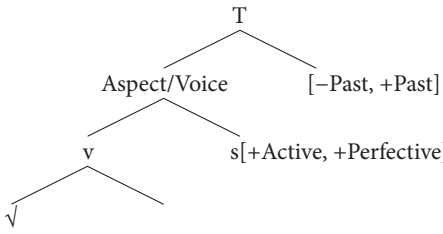
As the authors point out and is clear from Table 2, while [+Perfective] has an exponent, **-s-**, [−Perfective] does not. As [+Past] triggers stress shift, we take this to suggest that it has morpho-phonological exponence (and see Spyropoulos & Revithiadou 2008; van Oostendoorp 2012). This leads to the observation that obligatory LDA happens only in the presence of [−Perfective], [−Past], i.e. in the absence of an exponent for both Aspect and Tense, as shown in the structure in (31):

(31)



By contrast, LDA is not obligatory in the context of [+Perfective]:

(32)



What is so special about perfective aspect? Building on Todorović & Wurmbrand (2020), we consider the licensing of perfective Aspect morphology in Greek as a tool determining the layers of structure that are present in the embedded complement. Giannakidou (2009) proposed a treatment of perfective Aspect, according to which, when the verb is inflected for [+Perfective] a higher T projection must be present to license it. In other words, her analysis suggests that [+Perfective] must be associated with some temporal projections. This can be either overt Tense marking or modal particles, e.g. *na*, that is given a semantic function similar to that of Tense. While the details of her analysis are not crucial, the point that in perfective contexts there is semantic Tense is important for our purposes: if semantic Tense is always present in perfective contexts, then these contain a semantically active embedded T, unlike the situation with their [−Perfective] counterparts, where T is semantically inactive. This correlates with our analysis in the previous section, where we argued that in OC and obligatory raising environments, embedded Tns bears [uT] features which need to be valued by the [iT] features of the matrix T in order to be interpreted. This forces the establishment of an Agree relationship between matrix and embedded Tns, leading to an obligatory LDA configuration.

A final observation that we would like to make here relates to the morpho-phonological difference between (31) and (32) with respect to Aspect exponence. Embick (2010) has proposed the operation of *pruning* that may delete nodes with Ø-exponence in morpho-phonology. If he is right, we must assume that pruning applies after the linearization of the hierarchical structure in (31) following Vocabulary Insertion. After its application, the embedded clause contains just a vP at PF, i.e. T-Aspect/Voice and v are all spelled-out on the same head, creating the illusion of a restructuring environment. This is a representation quite similar to analyses of restructuring in terms of structure removal (as put forth in Müller 2017) or exfoliation (Pesetsky 2016). Crucially, however, the relevant parts of the structure are removed only at PF, as they are syntactically active. In Section 2, we presented extensive evidence that in Greek this is not a restructuring context based on a comparison of Greek with Spanish and Bosnian/Croatian/Serbian (BCS). Specifically, the presence of e.g. clitics on embedded T as well as the placement

of the modal particle in Greek point to the conclusion that the embedded TP is present in the syntax in contrast to BCS (and English). By contrast, the presence of an exponence for [+Perfective] in (32) blocks *pruning* and creates a distinct morpho-phonological domain (cf. Merchant 2015). If this is correct, this leads to an interesting correlation between a distinct morphological realization for Aspect and the presence of a semantically T head in (32), which do not require LDA. We leave this for further research.

5. Conclusions

In this paper, we first revisited the evidence that what has been analyzed as BC in Greek is in fact just another instance of LDA. By focusing on the domains and the conditions that allow/disallow the formation of LD chains even across CP boundaries, we argued that Greek allows non-local assignment of nominative case. We further argued that LD chains come in two versions, obligatory ones and optional ones, and that the former involve uninterpretable T in the embedded clause, while the latter are permitted because the formation of a chain between matrix T and embedded T is allowed to cross a CP phase boundary, which can be suspended. We suggested that this is due to (2):

(2) NSLs have T with interpretable φ-features which are not deleted after checking and valuation, thus being able to form Long Distance chains via Agree (cf. Ura 1994).

We studied the conditions under which LD chains can be disrupted. We noted that [+Perfective] and [+Past] may disallow LD formation in Greek, and we suggested that in perfective contexts there is semantic Tense: as semantic Tense is present in perfective contexts, these contain a semantically active embedded T, unlike their [−Perfective] counterparts, where T is semantically inactive leading to obligatory LDA.

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Alleged obligatorily controlled inflected infinitives

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This paper examines the arguments presented in Modesto (2009, 2018) and Sheehan (2013, 2018) in favor of the idea that inflected infinitival complements of desideratives, commissives, and object control verbs such as *persuadir* 'persuade' in Portuguese can be obligatorily controlled. It argues that the relevant complements are not instances of obligatory control (OC); they rather contain *pro*, interpreted by the same operations that govern its interpretation in finite clauses. This conclusion reinforces Landau's (2015) claim that the presence of agreement inflection blocks control in attitude complements. Focusing on European Portuguese, the paper argues that this conclusion allows for a precise characterization of the distribution of the inflected infinitive in verbal complement position: the inflected infinitive is barred in the complement position of restructuring verbs and in interrogative complements. The paper offers an account of this distribution that is based on the idea that inflected infinitives are bare TP projections. Evidence in favor of this claim comes from an examination of the distribution of pre-verbal subjects. The restrictions on subject reference found in inflected infinitival complements of different OC attitude verbs in European Portuguese stem from the particular status of Actional complements in OC contexts (Farkas 1992; Jackendoff & Culicover 2003).

1. Introduction

As is well known, Portuguese has two types of infinitives: regular, non-inflected infinitives (1a), and infinitives that bear person and number agreement morphology (1b) (all of the examples mentioned in this section are from the European variety of Portuguese):

(1) a. *Non-inflected infinitive*
Eles lamentam ter chegado atrasados.
they regret.3PL to.have.INF arrived late
'They regret it that they arrived late'.

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b. *Inflected infinitive*
Eles lamentam (nós) termos chegado atrasados.
they regret.3PL we to.have.INF.1PL arrived late
'They regret it that we arrived late'.

In (1a), the subject of the embedded clause is a referentially dependent empty category that displays the usual properties of controlled PRO (locality, sloppy readings under ellipsis, etc.). In (1b), the subject bears independent reference and it may be overt or null. When it is overt, it bears nominative case. When it is null, it has the properties of the pronominal category *pro.* In (1a), by contrast, the subject may not be overt.

Inflected infinitives have a more restricted distribution than non-inflected infinitives (Âmbar 1994; Gongalves et al. 2014; Madeira 1994; Raposo 1987; Sitaridou 2002). They may appear in standard non-obligatory control (NOC) contexts: as sentential subjects and sentential adjuncts. In verbal complement position, they may combine with verbs of perception, causatives, factives (1b) and epistemic/declarative verbs (2) (following common practice, I use the label "propositional complement" to refer to complements of epistemic and declarative verbs):

(2) *Propositional complement*
Ela afirmou/julga termos chegado atrasados
she claimed/believes have.INF.1PL arrived late
'She claimed/believes that we arrived late.'

However, they are barred from occurring in interrogative complements (3) and they are utterly incompatible with restructuring verbs, such as *querer* 'want', *tentar* 'try', *conseguir* 'manage' (4):

(3) a. Não sabemos quando falar com ele.
not know.1PL when talk.INF with him
'We don't know when to talk with him'.
b. *Não sei quando falarmos com ele.
not know.1SG when talk.INF.1PL with him

(4) Eles querem / tentaram / conseguiram falar(*em) com ela.
they want / tried / managed to.talk(.3PL) with her
'They want/tried/managed to talk to her.'

Non-restructuring OC verbs such as commissives (*prometer* 'promise') and desideratives (*preferir* 'prefer') allow both types of infinitival complement:

(5) a. Os pais prometeram à Maria chegar às 10:00.
the parents promised to.the Maria arrive.INF at.the 10:00
'Her parents promised Mary to arrive at 10:00.'

b. Eu prometi à Maria chegarmos às 10:00.
I promised to.the Maria arrive.INF.1PL at.the 10:00
'I promised Mary that we would arrive at 10:00.'

(6) a. Nós preferíamos ir ao cinema.
we preferred go.INF to.the movies
'We would prefer to go to the movies.'
b. Preferia irmos ao cinema.
preferred.1SG go.INF.1PL to.the movies
'I would prefer for us to go to the movies.'

Object OC verbs such as *convencer* 'convince' or *persuadir* 'persuade' also allow for both forms:

(7) a. A mãe convenceu as crianças a almoçar cedo.
the mother convinced the children to lunch.INF early
b. A mãe convenceu as crianças a almoçarem cedo.
the mother convinced the children to lunch.INF.3PL early
'Their mother convinced the children to have lunch early.'

In inflected infinitival complements of the type of (5), (6) and (7), the range of interpretations available for a null subject appears to be severely constrained. This can be clearly seen when these complements are compared with propositional complements. (8) and (9) contain two independent clauses so that an antecedent is provided for the null subject in the second clause. While (8) is fine for all speakers, the status of (9) is questionable for many (here I use the % sign to indicate that speakers vary in their judgements):

(8) Eles vão chegar atrasados. Julgo terem apanhado
they go arrive.INF late think.1SG have.INF.3PL caught
muito trânsito.
lots traffic
'They are going to arrive late. I believe they got trapped in traffic.'

(9) Tu não estás nada bem, %prefiro telefonares já
you not are nothing well prefer.PRES.1SG call.INF.2SG immediately
ao médico.
to.the doctor
'You don't look well; I prefer for you to call the doctor right away.'

Even though speakers may vary in their judgement of examples comparable to (9) (Sheehan 2013, 2018), everyone agrees that (10) is considerably better:

(10) Tu não estás nada bem, prefiro telefonarmos já
you not are nothing well, prefer.PRES.1SG call.INF.1PL immediately
ao maédico.
to.the doctor
'You don't look well; I prefer for us to call the doctor right away.'

Similarly, (11a) is of questionable status when compared to (11b):

(11) a. % Eu convenci a Ana a almoçares às dez.
I convinced the Ana to have.lunch.INF.2SG at.the ten
'I convinced Ana that you would have lunch at ten.'
b. Eu convenci a Ana a almoçarmos às dez.
I convinced the Ana to have.lunch.INF.1PL at.the ten
'I convinced Ana that we would have lunch at ten.'

In view of contrasts such as these, it has been proposed in recent years that inflected infinitival complements can be obligatorily controlled. Modesto (2009, 2018), on the basis of Brazilian Portuguese (BP), and Sheehan (2013, 2018), based on data from European Portuguese (EP), argue that the (a) and (b) examples in (5), (6), (7) are all instances of OC. For Modesto, the empty category in (the Brazilian counterparts of) (5b), (6b) and (7b) is a special type of PRO, namely Cased PRO; for Sheehan, it is a special type of OC *pro*.

In this paper, I focus on inflected infinitival complements of desideratives, commissives, and object control verbs such as *persuadir* 'persuade', *convencer* 'convince', the predicates that Modesto (2009, 2018) and Sheehan (2013, 2018) draw their arguments from. I argue that there are no grounds to posit special mechanisms for the null subject in these contexts, on either variety. When an inflected infinitive is allowed as complement of these verbs and the subject is null, the relation established between the null subject and its antecedent is not one of OC, but is rather governed by the general mechanisms responsible for the interpretation of *pro* in finite clauses. These may vary depending on whether the language is a consistent null-subject language, as is the case of EP, or a partial null-subject language, as is the case of BP (Holmberg 2005; Modesto 2007; Rodrigues 2004), but in both cases, there is no need to assume that the status of the null subject in inflected infinitives is special. This conclusion is in line with Landau (2015), who claims that the presence of *phi*-feature agreement inflection blocks control in attitude complements.[1]

1. Landau (2015: 18) defines attitude contexts as "domains in which the denotation of linguistic expressions is determined relative to the epistemic or bouletic state of a participant in the reported situation and not relative to the actual world". The verbs discussed here are all attitude verbs under this definition.

This paper is organized as follows. Sections 2–5 focus on EP. In Section 2, I provide arguments that the null subject of inflected infinitival complements in the relevant contexts is not obligatorily controlled. Section 3 discusses the implications that this conclusion has for an analysis of the syntax of inflected infinitives. In particular, the inflected infinitive is allowed in complements of verbs that impose constraints on the temporal orientation of their argument clauses (contra Gonçalves et al. (2014)). It is barred only in two verbal complement contexts: in the complement position of restructuring verbs and in interrogative complements. I adopt Grano's (2015) suggestion that non-restructuring infinitives project a semantically vacuous Tø. On the reasonable assumption that a T projection is minimally required for the licensing of an inflected infinitive, the availability of the inflected infinitive in non-restructuring environments follows. The fact that inflected infinitives are not allowed as complements of restructuring verbs is explained on the assumption that restructuring verbs realize functional heads in the inflectional layer of the clause thus giving rise to monoclausal structures (Grano 2015).

In Section 4 I propose that the unavailability of an inflected infinitive in an interrogative complement is due to lack of a C (=Force) projection. By hypothesis, inflected infinitives are bare TP projections. Evidence in favor of this claim comes from the distribution of pre-verbal subjects. Building on previous work on the syntax of subjects in the null subject languages of the consistent type (Barbosa 1995, 2000) I show that the constraints on the distribution of pre-verbal subjects in inflected infinitival complements of attitude verbs (with the exception of factives) in EP are due to lack of a projecting C.

In Section 5, I address the issue of the restrictions on subject reference found in inflected infinitival complements of different OC attitude verbs. I argue that they are not due to syntax proper, but are accounted for in the semantics. In particular, they stem from the particular status of Actional complements in obligatory control contexts. In the spirit of Jackendoff & Culicover (2003), I assume that commissive verbs and object control attitude verbs such as *convince* require their infinitival complement to be a volitional Action and impose restrictions on the choice of Actor of the Action. Inflected infinitival clauses with a subject with independent reference can only be embedded as complements of these verbs when they are coerced into volitional Actions. This explains their restricted distribution, thus contributing to the illusion of OC.

Concerning volitionals such as *preferir* 'prefer', *desejar* 'hope', I argue that the restrictions on subject reference that are found in inflected infinitives can only be understood once obviative subjunctives are brought into the picture. With these verbs, an inflected infinitival complement with a non-dependent subject is not possible precisely in the contexts that trigger obviation in a subjunctive complement (typically in Actional complements). Drawing on the competition based account of

obviation proposed by Farkas (1992), I suggest that the restrictions on the reference of the subject in inflected infinitival complements follow from competition with the other two alternative forms, the subjunctive and the non-inflected infinitive.

Finally, in Section 6, I turn to BP. I examine Modesto's arguments in favor of the idea that inflected infinitival complements are obligatorily controlled and I show that the dependent behavior of the null subject in inflected infinitives is not peculiar to infinitives; it also holds in finite clauses and is rather a feature of BP null subjects in general, given its status as a partial null subject language. This strongly suggests that there is no need to assume that the status of the null subject in inflected infinitives is special. In the literature, there are different analyses of the nature of the finite null subject in BP (Barbosa 2019; Kato 1999; Ferreira 2000; Holmberg 2005; Modesto 2000, 2008; Nunes 2019; Rodrigues 2004). Whichever the analysis assumed, there are no grounds to posit a special status for the null subject of an inflected infinitive. I thus conclude that the null subject of inflected infinitival complements of OC attitude verbs is not obligatorily controlled in either EP or BP.

2. Arguments that inflected infinitival complements of OC attitude verbs in EP are not obligatorily controlled

This section focuses on EP and presents a series of arguments that show that the null subject of an inflected infinitive selected by an OC attitude verb differs in crucial ways from the null subject of a non-inflected infinitive. I argue that the contrasts noted can all be explained under the assumption that the latter is an instance of OC PRO while the former is not, it is *pro,* a pronominal category whose reference is governed by the same mechanisms that govern the interpretation of (unstressed) pronouns, namely variable binding and coreference.[2]

2.1 Split antecedents

In a well-behaved consistent null subject language like EP, the null subject of a finite clause, *pro*, may take split antecedents:

(12) O João$_i$ disse à Maria$_k$ que *pro*$_{i+k}$ deviam partir.
the João said to.the Maria that *pro* should.3PL leave
'John told Mary that they should leave.'

2. Throughout the paper, I do not assume a particular analysis of OC PRO and I do not address the issue of the categorial status of PRO vs. *pro,* as these aspects would take me too far afield. What matters really is that these non-inflected infinitival complements are instances of OC while the inflected infinitival counterparts are not. For a discussion of the status of *pro*, see Barbosa (2019).

In infinitival clauses, there is a clear contrast between the empty subject of a non-inflected infinitival complement and that of an inflected infinitive: while the former may not take split antecedents, the latter can. In order to fully appreciate this, it is necessary to clarify the distinction between two different phenomena: split antecedent control and partial control. I illustrate these distinctions with English examples, and then I turn to EP. Consider the following English sentence:

(13) *Partial Control* (Landau 2000: 44)
John$_i$ told Mary$_k$ that he$_i$ preferred PRO$_{i+}$ to meet at 6.

(13) is a case of partial control: the embedded collective predicate occurs with a controller in the singular, namely 'he'. Partial control is OC, so the unique singular controller and PRO must be clause mates.

A characteristic property of partial control is that it is semantic. If the embedded clause contains an anaphor that requires a syntactically plural subject, the same configuration is no longer grammatical (Landau 2000: 48):

(14) *John told Mary that he preferred to meet each other at 6.

Now consider the following example (Landau 2000: 49):

(15) Mary$_i$ thought that John$_k$ said that [PRO$_{i+k}$ helping each other$_{i+k}$] is crucial.

In (15), PRO can bind the anaphor because it is syntactically plural. Thus, this is a case of split antecedent control: the controller is represented by two DPs, each occupying a different structural position. Split antecedent control can be found in NOC contexts (15) and in a restricted set of cases of OC. In OC cases of split antecedent control, both antecedents must be contained in the same clause as the infinitival complement. In this case, a plural anaphor is fine, given that PRO is syntactically plural:

(16) *Split Control*
John$_i$ proposed to Mary$_k$ to PRO$_{i+k}$ meet each other at 6.

As discussed in Landau (2000: 55), as well as Jackendoff & Culicover (2003: 523), split OC control appears to be a property of particular verbs (such as 'propose' or 'ask'). As illustrated by (17c), the OC verbs 'promise' and 'persuade' do not license split control in English:

(17) Jackendoff & Culicover (2003: 523)
a. Sally persuaded Ben to take better care of himself.
b. Sally promised Ben to take better care of herself.
c. *Sally persuaded/promised Ben to take better care of themselves.

With this much in place, let us now consider the following EP paradigm:

(18) *Non-inflected infinitive*
a. O Pedro disse à Ana que preferia reunir
the Pedro said to.the Ana that prefer.PAST.IMP.3SG meet.INF
às dez.
at.the ten
'Pedro told Ana that he would prefer to meet at ten.'
b. *O Pedro disse à Ana que preferia ir morar
the Pedro said to.the Ana that prefer.PAST.IMP.3SG go.INF live.INF
um com o outro.
one with the other
'*Pedro told Ana that he would prefer to live with each other.'

(19) *Inflected infinitive*
O Pedro$_i$ disse à Ana que preferia irem morar
the Pedro said to.the Ana that prefer.PAST.IMP.3SG go.INF.3PL live.INF
um com o outro.
one with the other
'Peter told Mary that he would prefer for them to go and live with each other.'

(18a) is a case of partial control. Both (18b) and (19) contain an anaphor that requires a syntactically plural subject. Since one of the potential antecedents is not contained in the same clause as the infinitival complement, we are sure that we are not dealing with a context of split OC. As expected, (18b), with a non-inflected infinitive, is out due to the presence of the anaphor. (19), with an inflected infinitive, by contrast, is fine. This shows that the null subject of the inflected infinitive is syntactically plural. Therefore, this cannot be an instance of OC.

As in English, non-inflected infinitival complements of *persuadir* 'persuade' and *prometer* 'promise' do not license split control:

(20) a. *O Pedro prometeu à Maria proteger-se um ao outro.
the Pedro promised to.the Maria protect.INF-SE one to.the other
b. *O Pedro convenceu a Maria a ir morar um com
the Pedro convinced the Maria to go.INF liveINF one with
o outro.
the other

Now consider the counterparts to (20) with an inflected infinitive:

(21) a. O Pedro prometeu à Maria protegerem-se um ao outro.
the Pedro promised to.the Maria protect.INF.3PL-SE one to.the other
'Pedro promised Maria that they would protect each other.'

b. O Pedro convenceu a Maria a irem morar um com
the Pedro convinced the Maria to go.INF.3PL live one with
o outro.
the other
'Pedro convinced Maria that they would live together.'

When the infinitive bears plural inflection, the sentences become acceptable. These contrasts between the two types of infinitival complement can all be explained on the assumption that (18b), (20a), (20b) are instances of OC (with a PRO subject), while (19), (21a), (21b) are not and rather feature a *pro* (=pronominal) subject, which may take split antecedents. This is the view defended in Pires (2006) and Sitaridou (2007). Under an OC analysis of (19), (21a), (21b), however, this account is lost.

2.2 Long-distance dependencies

A non-inflected infinitive in an OC context doesn't allow a long distance antecedent:

(22) Eles$_i$ disseram-me que os médicos$_k$ prometeram não PRO$_{k/*i}$
they tell.PAST.3PL-me that the doctors promise.PAST.3PL not PRO
sentir nada durante a intervenção.
feel.INF nothing during the procedure
'They told me that the doctors promised not to feel anything during the procedure.'

(22) minimally contrasts with its counterpart with an inflected infinitive (here I use the neutral label *ec* to represent the null subject of the inflected infinitive):

(23) Eles$_i$ disseram-me que os médicos$_k$ prometeram não *ec*$_{k/i}$
they tell.PAST.3PL-me that the doctors promise.PAST.3PL not *ec*
sentirem nada durante a intervenção.
feel.INF.3PL nothing during the procedure
'They told me that the doctors promised that they wouldn't feel anything during the procedure.'

This contrast casts doubt on the idea that the null subject of the embedded clause is obligatorily controlled. Similar minimal pairs can be constructed with object control verbs, in my own judgement:

(24) a. *Eles$_i$ disseram-me que a assistente conseguiu convencer o
they tell.PAST.3PL-me that the assistant managed convince.INF the
médico a PRO$_i$ ser recebidos cedo.
doctor to PRO be.INF received early
'They told me that the assistant managed to convince the doctor that they should be received the following day.'

b. Eles$_i$ disseram-me que a assistente conseguiu convencer o
they tell.PAST.3PL-me that the assistant managed convince.INF the
médico a *ec*$_i$ serem recebidos cedo.
doctor to *ec* be.INF.3PL received early
'They told me that the assistant managed to convince the doctor that they should be received early.'

(25) a. *Ele$_j$ convenceu a chefe$_i$ a PRO$_{j+}$ reunir sem ela$_i$.
he convinced the boss to *ec* meet.INF without her
b. Ele$_j$ convenceu a chefe$_i$ a *ec*$_{j+}$ reunirem sem ela$_i$.
he convinced the boss to *ec* meet.INF.3PL without her
'He convinced his boss that they would meet without her.'

On the surface, these data appear to contradict Sheehan's (2018) results, which are obtained on the basis of survey data. In my assessment of these data, I start by examining object control verbs:

(26) Sheehan (2018: Example (37a))
O Pedro convenceu a Maria a viajarem amanhã.
the Pedro convinced the Maria to travel.INF.3PL tomorrow
'Pedro convinced Maria to travel tomorrow.'
= 0%, ? = 0%, OK = 100%, *n* = 24

(27) Sheehan (2018: Example (37b))
O Pedro convenceu a Maria a viajarem amanhã sem ela.
the Pedro convinced the Maria to travel.INF.3PL tomorrow without her
'Pedro convinced Maria to travel tomorrow without her.'
= 38%, ? = 8%, OK = 54%, *n* = 24

While (26) gets an acceptance rate of 100%, only half of the speakers accept (27). Sheehan concludes that this split is due to microparametric variation. For 46% of the speakers, an inflected infinitive is totally acceptable only when partially overlapping in reference with the matrix subject.

On the basis of the variability in judgements elicited in (27), it could be argued that I belong to the dialect that allows (27). However, I do find that there is indeed a contrast between (26) and (27), but there is an alternative explanation for this contrast. While in (26), there are two antecedents available for the embedded plural null subject, in (27) there is only one, so a certain amount of effort is required to accommodate the plural null subject (no context was provided for these sentences). In this perspective, the difference between the two sentences is not due to control, but rather to the availability of split antecedents for the embedded plural in (26) as opposed to (27).

Note that when the right context is provided and a referent for the null plural subject is made easily accessible, configurations that are similar to (27) become perfectly acceptable:

(28) [O diretor do departamento]$_i$ convenceu [a presidente do
the director of.the department convinced [the president of.the
Conselho]$_k$ a *ec*$_j$ sermos autorizados a fazer a reunião
Council] to *ec* be.INF.1PL allowed to do the meeting
sem eles$_{i+k}$
without them
'The head of department convinced the president of the Council for us to be allowed to meet without them.'

(29) a. Eles$_i$ convenceram a Maria$_j$ a *ec*$_i$ reunirem-se sem ela$_j$.
they convinced the Maria to *ec* meet.INF.3PL-SE without her
'They convinced Maria meet without her.'

b. O João$_i$ disse ao Carlos$_j$ que *pro*$_i$ tinha convencido a Maria$_k$
the João told to.the Carlos that *pro* had convinced the Maria
a *ec*$_{i+j}$ reunirem-se sem ela$_k$.
to *ec* meet.INF.3PL- REFL.3 without her
'João told Carlos that he had convinced Maria to meet without her.'

I now move on to subject control verbs, such as *preferir* 'prefer', *desejar* 'hope' and *prometer* 'promise'. Starting with *preferir* 'prefer', Sheehan (2018: 37) observes that, of the 42% of people who fully or marginally accepted (30), nobody fully accepted (31):

(30) Sheehan (2018: Example (31))
%O João preferia reunirem-se mais tarde.
the João prefer.IMP.PAST.3SG meet.INF.3PL-SE more late
'John would prefer to meet later.'
* = 58%, ? = 8%, OK = 34%, *n* = 24

(31) Sheehan (2018: Example (32))
%O João preferia reunirem-se sem ele.
the João prefer.IMP.PAST.3SG meet.INF.3PL-SE without him
'John would prefer for them to meet without him.'
* = 88% ? = 12% OK = 0%, *n* = 24

A later survey, however, with 68 respondents, revealed less clear results. First, fewer speakers found (32) acceptable; secondly, for some speakers, (33) is actually better than (32), which is the opposite pattern of (30) and (31).

(32) Sheehan (2018: Example (33))
%O João preferia reunirem-se amanhã
the João prefer.IMP.PAST.3SG meet.INF.3PL-SE tomorrow
'John would prefer to meet tomorrow.'
* = 65% ? = 20% OK = 15%, *n* = 68

(33) Sheehan (2018: Example (34))
%O João preferia reunirem-se sem ele.
the João prefer.IMP.PAST.3SG meet.INF.3PL-SE without him
'John would prefer for them to meet without him.'
* = 57% ? = 19% OK = 24%, *n* = 68

Sheehan observes that all of those speakers who accept (32) reject or find (33) marginal. She thus concludes that, for a subset of speakers, inflected infinitives are acceptable in this context on the condition that they are controlled. She further observes that the same subset of speakers consistently rejected (34):

(34) Sheehan (2018: Example (36))
*Eu preferia reunirem-se mais cedo
I prefer.IMP.PAST.1SG meet.INF.3PL-SE more early
'I would prefer for them to meet earlier.'
*= 88%, ? = 4%, OK = 7%, *n* = 68

Even though (34) is rejected by 88% of the speakers, it is possible to find comparable examples on the web. Here I mention two such examples. (35) was taken from a comment on a news site:

(35) Sinceramente sendo portista se a coisa da lesão foi fingida
sincerely being a.Porto.adept if the thing of.the injury was faked
acho que fizeram mal pq não permito falcatruas no meu
think.1SG that did.3PL wrong because not allow cheating in.the my
clube e **preferia virem** dizer que se enganaram…
club and prefer.PAST.1SG come.INF.3PL say.INF that SE were.mistaken
'Honestly, being a Porto adept, if that injury was faked, I think they did wrong because I don't allow cheating in my club and I would rather they came and said that they went wrong…"[3]

3. https://www.zerozero.pt, consulted on 29-12-2020

(36) sabem se vai haver um novo kit de sócio para a
know.PRES.3PL if will there.be a new kit of membership for the
nova época? É que quero comprar uns mas
new season is that want.PRES.1SG buy.PRES.1SG some but
preferia **serem** dos novos…
prefer.PAST.1SG be.INF.3PL of.the new
'Do you know whether there will be a new membership kit for the new season? I want to buy some, but I would prefer for them to be the new ones…'[4]

In these examples, the null subject refers back to a third person plural null subject that is not local. In the example below, the null subject of the inflected infinitive denotes the addressee:

(37) **Preferia** **virem** cá e ficar na minha casinha.
prefer.PAST.1SG come.INF.3PL here and stay.1SG in.the my little.house.
'I would prefer for you to come here and to stay at home.'[5]

(37) is a case of hearer control. However, hearer control is a feature of non-obligatory control, not of OC. Therefore, this example cannot be an instance of OC.

The existence of these examples, by itself, doesn't undermine Sheehan's claim. For her, there are multiple grammars of the inflected infinitive. The problem I see with this approach, however, is that, if there are different grammars, one would expect internal consistency within a grammar. However, there's little consistency in the results of, say, (34) and (33). The results show that there are speakers who reject (34) and yet accept (33). If, on the other hand, fluctuation in judgements is, at least in part, due to difficulty in assigning an interpretation to the plural null subject (i.e., finding an accessible plural antecedent), it is less surprising that speakers should fluctuate in their judgements. Independent evidence in favor of an approach along these lines, comes from a comparison of the results obtained for the different verbs in cases of partially overlapping reference ((38b) corresponds to the first survey):

(38) a. Sheehan (2018: Example (22))
Os professores persuadir(am) o diretor a reunir(%em)-se
the teachers persuaded the director to meet.INF.(3PL)-SE
mais tarde.
more late
'The teachers persuaded the director to meet later.'
uninflected OK = 68%; inflected OK = 97% (*n* = 37)

4. https://serbenfiquista.com/forum/geral/1/assuntos-de-socio-e-casas-do-benfica/37/2760, consulted on 20-3-2020.

5. http//repositorio.esepf.pt, consulted on 20-3-2020

b. Sheehan (2018: Example (31))
O João preferia reunir(%em)-se mais tarde.
the João prefer.IMP.PAST.3SG meet.INF.(3PL)-SE more late
'John would prefer to meet later.'
*= 58%, ? = 8%, OK = 34%, *n* = 24

c. Sheehan (2018: Example (20))
O Pedro prometeu à Ana reunir(%em)(-se) em Braga
the Pedro promised to.the Ana meetINF.(3PL)(-SE) in Braga
'Pedro promised Ana to meet in Braga."
uninflected OK = 70%; inflected OK = 95% (*n* = 37)

When these examples are compared, we observe that the results for *persuadir* 'persuade' and *prometer* 'promise' are comparable. In particular, the inflected infinitive is almost unanimously accepted. With *preferir* the acceptance rates are lower (42%). This is precisely what is expected under a coreference or split antecedent account of plural inflection on the infinitive. In (38a), the plural null subject can be understood as referring to the director plus the professors. In (38c) it can refer to Pedro plus Ana. In (38b), by contrast, there is no plural referent readily available. I believe that this is why the number of speakers who accept the sentence is lower. For half of the speakers (or an even lower proportion of speakers in the second survey), it is possible to interprete the null subject as denoting a plurality of individuals of which João is a member. However, this requires a certain amount of effort, which may explain the low ratings. The fact that, for some speakers who accept (38b), adding the adjunct *sem ele* 'without him' makes the sentence worse is not so surprising as more effort is required to accommodate the unspecified subject. Under an OC analysis, by contrast, the difference between (38b) and the examples (38a) and (38c) is unexpected. Moreover, it can only be captured at the expense of positing the existence of multiple grammars, a hypothesis that I find hard to motivate on independent grounds.

2.3 Other tests for OC

In this section, I examine other tests for OC by systematically comparing non-inflected infinitival complements with inflected infinitival complements of the relevant verbs. I start by considering c-command. In OC the controller must c-command the subject of the infinitive (Hornstein 1999). When the relevant non-inflected and inflected infinitival complements are compared, I find a very clear contrast between the two in this regard. While (39a), (40a) are utterly ungrammatical, (39b), (40b) are not:

(39) a. As crianças estão muito excitadas. *A professora convenceu [a
the children are very excited the teacher convinced the
mãe delas$_i$]$_k$ a PRO$_i$ ir à visita de estudo sem ela$_k$.
mother of.them to PRO go.INF to.the visit of study without her
'The children are very excited. The teacher convinced their mother to go to the field trip without her.'

b. As crianças estao muito excitadas. O professor$_k$ convenceu [a
the children are very excited the teacher convinced the
mãe delas$_i$]$_j$ a *ec*$_{k+i}$ irem à visita de estudo sem ela$_j$.
mother of.them to *ec* go.INF.3PL to.the visit of study without her
'The children are very excited. Their teacher convinced their mother that they should be allowed to go to the field trip without her.'

(40) a. As crianças têm de arrumar as coisas. *O funcionário prometeu
the children have to collect the things the employee promised
ao pai delas$_i$ PRO$_{i+k}$ estar prontas às dez.
to.the father of.the children PRO be.INF.3PL ready at.the ten
'The children have to get ready. The employee promised the their father that they would be ready at ten.'

b. As crianças têm de arrumar as coisas. O funcionário prometeu
the children have to collect the things the employee promised
ao pai delas$_i$ *ec*$_i$ estarem prontas às dez.
to.the father of.them *ec* be.INF.3PL ready at.the ten
'The children have to get ready. The employee promised their father that they would be ready at ten.'

In Sheehan's (2018) study, subjects were asked to rate sentences with inflected infinitival complements which minimally differed from each other with respect to whether the antecedent was c-commanding or not. A subset of the speakers studied favored c-commanding antecedents over non-commanding antecedents ones. Sheehan concludes that the evidence obtained is suggestive, but not conclusive.

One other environment commonly used to test for OC is VP ellipsis. OC complements are known for allowing only a sloppy interpretation in comparison with pronouns (including *pro* in a consistent null subject language such as EP), which are ambiguous between a strict or sloppy interpretation. Now consider the following examples:

(41) #Os médicos prometeram à minha mãe operá-la às dez
the doctors promised to.the my mother operate.INF-her at.the ten
e a secretáoria também prometeu.
and the secretary also promised
'The doctors promised my mother to operate her at ten and so did the secretary.'

(42) O médico prometeu à minha mãe operarem-na às dez
the doctor promised to.the my mother operate.INF.3PL-her at.the ten
e a secretária também prometeu.
and the secretary also promised
'The doctor promised my mother that she would be operated at ten and so did the secretary.'

While (42) allows a strict interpretation (with the secretary promising mother that she would be operated on at ten), (41) strongly favors an interpretation according to which the secretary also promised to perform the operation. Likewise, in my own judgement, the following examples are fine with a strict interpretation:

(43) a. O médico convenceu os crianças a serem operadas no dia
the doctor convinced the children to be.INF.3PL operated on.the day
seguinte e o director convenceu a mãe delas.
following and the director convinced the mother of.them
'The doctor convinced the children that they would be operated the following day and the director convinced their mother.'

b. Eles$_i$ disseram que o pai$_k$ prefere *ec*$_{i+k}$ serem atendidos às
they said that the father prefers *ec*$_{i+k}$ be.INF.3PL received at.the
dez e que a secretária também prefere.
ten and that the secretary also prefers
'They said that their father prefers for them to be received at ten and that so does the secretary.'

Sheehan (2018) included examples with ellipsis in her questionnaire (44).

(44) O João preferia reunirem-se de manhã e a Maria também
the João preferred meet.INF.3PL-SE of morning and the Maria also
preferia (mas sem ela).
preferred (*but without her).
'João would prefer to meet in the morning and Maria also would prefer, (but without her).'

Concerning this test item, Sheehan (2018: 40) reports the following: "Possibly because the example was provided in the survey out of context, only 8 speakers accepted the baseline example […] Of these 8 speakers, 6 found it less acceptable with a pronoun co-referential with Maria, suggesting that they require a sloppy reading". Again, this evidence doesn't seem to be definitive enough.

One other control diagnostic discussed by Sheehan are bound variable readings under association with Focus. Sheehan mentions the following example:

(45) Só o director preferia reunirem-se fora no caso
only the director preferred gather.INF.3PL-REFL.3 outside in.the case
de incêndio.
of fire
'Only the headmaster would prefer to gather outside in case of a fire.'

According to Sheehan, work with native informants suggests that (45) is only felicitous in a situation in which no other teacher would prefer to gather outside with his/her class in the event of a fire. It is not compatible with a scenario in which the headmaster is the only person who has a preference for him and his class to gather outside, i.e., where all the other teachers do not want him and his class to gather outside. I do not think that this reading is unavailable. In particular, I detect a difference between (45) and (46) with respect to the availability of this latter reading:

(46) Só o director preferia reunir-se fora no caso
only the director preferred gather.INF-REFL.3 outside in.the case
de incêndio.
of fire
'Only the headmaster would prefer to gather outside in case of a fire.'

While (46) definitely lacks the relevant reading, (45) doesn't rule it out, in my own judgement. The native speakers I have consulted have the same judgement.[6]

2.4 Binding versus coreference

The contrasts above can all be captured on the assumption that the non-overt subject of the inflected infinitive is *pro.* In apparent cases of "partial control" the relation established with the antecedent is a relation of (accidental) coreference governed by pragmatics rather than by OC. If coreference rather than control is what accounts for these cases of overlapping reference, one clear prediction is made, namely that partially overlapping reference should not be available with non-referring expressions. Consider the following sentences:

(47) O Carlos$_i$ prometeu que *pro*$_{i+}$ pagavam a conta.
the Carlos promise.PAST.3SG that *pro* pay.PAST.3PL the bill
'Carlos promised that they would pay the bill.'

6. Sheehan (2018: 41) also tested for *de se* readings. Since I got very disparate judgements from my informants and I myself find the relevant sentences very hard to judge, I decided not to consider this test here.

(48) Ninguém$_i$ prometeu que *pro*$_{*i+/j}$ pagavam a conta.
noone promise.PAST.3SG that *pro* pay.PAST.3PL the bill
'Nobody$_i$ promised that they$_j$ would pay the bill.'

The plural subject of the embedded clause in (47) can be understood as denoting a group that includes the individual Carlos. In (48), by contrast, it is not possible to get a partially overlapping reference interpretation. In order to get an anaphoric interpretation, the embedded subject must be singular, in which case *pro* is interpreted as a bound variable.

(49) Ninguém$_i$ prometeu que *pro*$_i$ pagava a conta.
noone promise.PAST.3SG that *pro* pay.PAST.3SG the bill
'Nobody promised to pay the bill.'

Likewise, I find it very hard to interprete (50), with a collective predicate, as a case of partially overlapping reference:

(50) Ninguém prometeu que *pro* (se) reuniriam ali.
noon promised that *pro* (SE) meet.COND.PAST.3PL there
'Nobody promised that they would meet there.'

Now consider sentences with infinitival complements. When the infinitive is not inflected, the embedded subject is controlled by the matrix QP.

(51) Ninguém$_i$ prometeu PRO$_i$ pagar a conta.
nobody promised PRO pay.INF the bill
'Nobody promised to pay the bill.'

(52) Ninguém$_i$ prometeu PRO$_{i+}$ reunir(-se) às 10.
nobody promised PRO meet.INF(-SE) at.the 10.
'Nobody promised to meet at ten.'

When the infinitive is inflected, it is not possible to get a partially overlapping reference interpretation:

(53) *Ninguém$_i$ prometeu *ec*$_{i+}$ pagarem a conta.
nobody promised *ec* pay.INF.3PL at.the 10.

(54) *Ninguém$_i$ prometeu *ec*$_{i+}$ reunirem(-se) às 10.
nobody promised *ec* meet.INF.3PL(-SE) at.the 10.

The same observations apply to the other OC verbs under discussion:

(55) a. Não consegui convencer ninguém$_i$ a PRO$_{i+}$ reunir(-se)
not manage.PAST.1SG convince.INF noone to PRO meet.INF.(-SE)
às 10.
at.the 10.
'I didn't manage to convince anyone to meet at 10.'

b. *Não consegui convencer ninguém$_i$ a *ec*$_{i+}$ reunirem
not managed.PAST.1SG convince.INF noone to *ec* meet.INF.3PL
às 10.
at.the 10.

(56) a. Ninguém$_i$ prefere PRO$_{i+}$ reunir(-se) de madrugada.
noone prefers PRO meet.INF(-SE) at dawn
'Noone prefers to meet at dawn.'

b. *Ninguém$_i$ prefere *ec*$_{i+}$ reunirem(-se) de madrugada.
noone prefers *ec* meet.INF.3PL(-SE) at dawn

Sheehan (2018) acknowledges this fact and offers an explanation that relies on the claim that negative QPs lack a referential index; therefore, they are not capable of valuing D (= checking the EPP) on the relevant head, a process that plays a key role in Sheehan's analysis of *pro* control. However, negative QPs can bind *pro*, as shown in (49). On the assumption that variable binding is coindexation under c-command, one must conclude that the negative QP (or its trace under a quantifier raising analysis) bears an index. Moreover, negative QPs can check the EPP, so it is not very clear why they shouldn't be able to do so in this particular context.

2.5 Conclusions

In view of the arguments just presented, it is legitimate to conclude that when an inflected infinitive is allowed as complement of an OC attitude verb and the subject is null, the relation established between the null subject and its antecedent is not one of OC, but is rather governed by the mechanisms responsible for the interpretation of *pro* in general, either variable binding or coreference. When *pro* is c-commanded by its antecedent and bears the same index as the antecedent, it can be interpreted as a bound variable. In the absence of c-command, it is interpreted by coreference, like a regular pronoun. Apparent cases of partial control are instances of partially overlapping reference.

3. Implications for the syntax of inflected infinitives

The conclusions reached thus far are in line with Landau's (2004, 2015) characterization of the contrast between non-control (NC) complements and OC complements. Landau's most recent formulation of the OC-NC contrast states that the presence of φ-feature agreement inflection blocks control in attitude complements, but not in non-attitude complements. The verbs examined thus far all select attitude complements (see footnote 1), so our data bears on the first half of Landau's generalization. In particular, it confirms the prediction that, when an inflected infinitive is allowed as complement of an attitude verb, it is not an instance of OC.[7] In addition, our conclusions disconfirm the claim put forward by Gongalves et al. (2014) that the inflected infinitive is barred in the complement position of verbs that impose a temporal orientation on the embedded complement. The verbs *persuadir* 'persuade', *prometer* 'promise' and *decidir* 'decide' impose posterior temporal orientation on their infinitival complement, as shown in (57):

(57) a. *O Carlos persuadiu a Maria a ter ido às
the Carlos persuade.PAST.3SG the Maria to have.INF gone to.the
compras com ele.
shopping with him
'*Carlos persuaded Maria to have gone shopping with him.'

b. *O Carlos prometeu/decidiu ter ido às compras com ela.
the Carlos promised/decided have.INF gone to.the shopping with her
'*Carlos promised/decided to have gone shopping with her.'

Gonçalves et al. (2014) claim that the inflected infinitive is not allowed in such complements and propose that the cases that appear to violate this restriction are not instances of real inflected infinitives and are rather pseudo-inflected infinitives. In their list of verbs that impose temporal orientation on the embedded complement and presumably allow pseudo-inflected infinitives as complements, they also include the verb *querer* 'want', a restructuring verb in EP. However, there is a very clear contrast between *querer* 'want' and the attitude verbs in (57). While the latter allow for an inflected infinitival complement in the manner described above, embedding an inflected infinitival complement under *querer* 'want' is not an option at all. In effect, a search on the web for the strings *prefiro serem* 'prefer.PRES.1SG be.INF.3PL', *prometo serem* 'promise.PRES.1SG be.INF.3PL', *decidi serem* 'decide.PAST.1SG be.INF.3PL', restricted to sites from Portugal, retrieves abundant examples in which the inflected infinitive heads a complement clause. The string *quero serem*

7. Since an examination of the behavior of inflected infinitives in non-attitude complements is well beyond the scope of the present paper, I will not discuss those here.

'want.1SG be.INF.3PL', by contrast, retrieves none. This shows that there is a qualitative difference between *querer* 'want' and the other attitude verbs in this regard. Therefore, I conclude that the combination of a future oriented non-restructuring attitude verb with an inflected infinitive is a possibility allowed by the grammar in EP. As will be argued below, this possibility is not completely free and is subject to semantic constraints. Yet, it is not ruled out by the grammar.

This conclusion allows for a more precise characterization of the distribution of the inflected infinitive in complement position in EP. In particular, the inflected infinitive is barred from occurring only in two verbal complement contexts: in the complement position of restructuring verbs — implicative (*tentar* 'try', *conseguir* 'manage'), aspectual, modal, desiderative (*querer* 'want') — and in interrogative complements.

(58) Contexts in which the inflected infinitive is barred:
   a. *Restructuring verbs*
      i. Eu tentei/quis falar(*mos) com ele.
         I try.PAST/want.PAST talk.INF.(*1PL) with him
         'I tried/wanted to talk with him.'
      ii. Eu comecei a falar(*mos) com o Pedro.
         I begin.PAST to talk.INF.(*1PL) with the Pedro
         'I began to talk with Pedro.'
   b. *Interrogative complements*
      Não sei quando viajar(*mos).
      not know.PRES.1SG when travel.INF.(*1PL)
      'I don't know when to travel.'

Within the realm of subject control attitude predicates, the inflected infinitive is allowed (with some restrictions, to be spelled out below) in the complement position of desiderative, commissive, propositional and factive predicates.[8]

The fact that inflected infinitives are not allowed as complements of restructuring verbs can be easily explained on the assumption that restructuring predicates like TRY, BEGIN OR WANT realize functional heads in the inflectional layer of the clause thus giving rise to monoclausal raising structures (Cinque 2006; Grano 2015; Wurmbrand 2003). Given the monoclausal status of the projection headed by restructuring verbs, it is not surprising that they are incompatible with an inflected infinitive. In the case of non-restructuring verbs, by contrast, the lexical verb introduces a clausal complement, so an inflected infinitive is, in principle, possible there, on a par with a non-inflected infinitive with a PRO subject.

8. This empirical description is actually in conformity with Raposo (1987).

On the basis of a detailed examination of sequence of Tense phenomena, Grano (2015) argues that non-restructuring infinitives project a semantically vacuous Tø. Here I adopt this view and extend it to the inflected infinitive. On the reasonable assumption that a T projection is minimally required for the licensing of an inflected infinitive in EP, the availability of an inflected infinitive in the complement position of non-restructuring predicates is expected. In other words, the inflected infinitive doesn't impose any particular temporal requirements that are not also present in the non-inflected infinitive.

In fact, I fail to detect any significant differences between the two types of infinitive regarding their temporal properties. It has often been claimed that inflected infinitival complements of epistemic and declarative verbs have a special tense requirement (Raposo 1987). The main motivation for this is that they require perfective morphology in the context of an episodic eventive predicate:

(59) a. A professora disse termos respondido bem.
the teacher said have.INF.1PL answered well
'The teacher said that we answered well.'
b. *A professora disse respondermos bem.
the teacher said answer.INF.1PL well

This contrast, however, is not peculiar to inflected infinitives. It also shows up when the infinitive is not inflected:

(60) a. Os alunos disseram ter respondido bem.
the students said have.INF.1PL answered well
'The students claimed to have answered well.'
b. *Os alunos disseram responder bem.
the students said answer.INF well

The parallelism between (59) and (60) indicates that the requirement in question is a characteristic feature of propositional infinitival complements and is independent from whether they are inflected or not.[9] For this reason, I conclude that there are no substantial differences in the temporal properties of the two types of infinitive.[10]

If this approach is on the right track, however, a number of questions arise. The first question regards the unavailability of an inflected infinitive in interrogative complements. The second question is why an overt pre-verbal subject is not allowed in some of the contexts examined:

9. For a detailed discussion of this requirement in relation to complements of *claim* in English, see Grano (2015).

10. For an analysis of the temporal properties of infinitives, see Cunha & Silvano (2008).

(61) a. *Eu convenci as crianças a elas irem à festa.
I convinced the children to they go.INF.3PL to.the party
b. Eu convenci as crianças a irem elas à festa.
I convinced the children to go.INF.3PL they to.the party
'I convinced the children that they should be the ones to go to the party.'

Finally, the question arises of why inflected infinitival complements of the OC verbs discussed in Section 2 display such severe restrictions on subject reference. In the next section I address the first two questions. I start by examining the second question and, in so doing, I will provide an answer to the first. In Section 4, the third question is addressed.

4. Inflected infinitives lack C(=Force)

The attitude verbs discussed in Section 2 do not display a uniform behavior with respect to their degree of tolerance of a subject in pre-verbal position. With object OC verbs that take the prepositional complementizer *a* 'to', a pre-verbal subject is completely impossible (of. (61a, b); *preferir/esperar* and *prometer* are more permissive, even though they do not easily tolerate a pre-verbal subject:

(62) a. ??Prefiro / espero os meus pais serem
prefer.PRES.IMP.1SG / hope.PRES.IMP.1SG the my parents be.INF.3PL
atendidos ainda hoje.
received still today
'I prefer/hope for my parents to be received today.'
b. ??Prometo as fotografias estarem prontas às dez.
promise.PRES.1SG the photographs be.INF.3PL ready at.the ten
'I promise for the photographs to be ready at ten.'

Raposo (1987) mentions a somewhat similar restriction in inflected infinitival complements of epistemic and declarative verbs.[11]

(63) a. ??Penso os deputados terem votado essa proposta.
think.PRES.1SG the delegates have.INF.3PL voted that proposal
'I think that the delegates have voted for that proposal.'
b. Penso terem (os deputados) votado essa proposta
think.PRES.1SG have.INF.3PL (the delegates) voted that proposal
(os deputados)
(the delegates)

11. Raposo (1987) judges (63a) as ungrammatical, but Âmbar (1988) considers equivalents of (63a) to be milder violations (cf. ?? vs. *). (63b) is likely to be used in a formal register, but it is not ungrammatical.

Raposo (1987) interpreted this restriction as the result of obligatory Infl raising to Comp. However, as noted in Âmbar (1988), when the subject is modified by a focus particle, (63a) becomes completely well-formed.

(64) Penso só os deputados terem votado essa proposta.
think.1SG only the delegates have.INF.3PL voted that proposal
'I was told that only the delegates have voted for that proposal.'

The grammaticality of (64) casts doubt on a V-movement account of the contrast between (63a) and (63b).

Raposo (1994: 40) observes that "the possibility of material occurring before the inflected infinitive is much more general", "the whole gamut of affective operators may occur there, and the phenomenon is not restricted to subjects". By "affective operators" he means quantificational operators such as universal or negative QPs, which are inherently non-referential:

(65) *Subjects*
Disseram-me [muita gente / ninguém ter visto esse filme].
tell.PAST.3PL-me many people / noone have.INF.3SG seen that movie
'I was told that a lot of people / noone saw that film.'

(66) *Objects*
a. Disseram-me [nada terem esses turistas visitado].
tell.PAST.3PL-me nothing have.INF.3SG those tourists visited
'I was told that those tourists visited nothing.'
b. Disseram-me [só essa cidade terem os turistas visitado]
tell.PAST.3PL-me only that city have.INF.3SG the tourists visited
'I was told that the tourists visited only that city.'

These examples show that the pre-verbal position is not restricted to subjects. As in the case of subjects, this position can only host objects that are inherently non-referential. The following example shows that a referential DP object cannot appear pre-verbally in this context.

(67) ???Disseram-me, essa proposta, não (a) terem conseguido
tell.PAST.3PL-me that proposal not (it) have.INF.3SG managed
aprovar.
approve.INF
'They told me that, that proposal, they hadn't been able to approve (it).'

In sum, regardless of their status as objects or subjects, there is a contrast between referential DPs and inherently non-referential QPs: only the latter may appear in the left-periphery of the inflected infinitival complement.

In order to understand why there is this asymmetry, I will first concentrate on the case of peripheral objects. In EP, there are basically two strategies for placing an object in the front of the clause. One is the Topic-Comment articulation, which comes in two varieties: the Topic may be doubled by a resumptive clitic, in the construction known as Clitic Left Dislocation (CLLD), or it may be simply associated with a gap, in the construction known as Topicalization (Duarte 1987). None of these possibilities is allowed in a propositional complement with the inflected infinitive (67).

The other strategy, which is akin to a scrambling operation, is restricted to apply to expressions that cannot be topics, such as non-referential QPs or DPs modified by focus particles. These include "the whole gamut of affective operators", to borrow Raposo's 1994 expression. This strategy is variably referred to in the literature as "emphatic movement'" (Raposo 1994), "quantificational operator movement" (Vallduví 1992), or "focus movement" (Martins 1994). It can be applied within a propositional inflected infinitival complement, as illustrated in (66).

In Barbosa (2000) I argued that the parallelism between subjects and objects that is observed in propositional inflected infinitival complements follows from the particular status of pre-verbal subjects in EP. In Barbosa (1995) I proposed that, in a consistent null subject language such as EP, there is no EPP-related movement to pre-verbal position, a view that is also defended in Pollock (1997); Alexiadou & Anagnostopoulou (1998); Ordónez & Treviño (1999); Manzini & Savoia (2002); Platzack (2004). Even though the particular implementations of this proposal vary, all of them have one key feature in common: the functional head bearing subject agreement has a nominal specification (a D-feature), interpretable/valued φ-features, probably also Case, to the effect that it has the status of a pronominal affix in T capable of checking the EPP. A corollary of this analysis is that there is no EPP-related movement to Spec,TP and pre-verbal subject constructions are derived by means of independently attested operations of placing an argument in front of the clause, namely the Topic-Comment articulation or quantificational operator movement (in the restricted set of cases of expressions that cannot be Topics, such as non-referential QPs or DPs modified by focus particles). Viewed in this light, the deviance of (63a) is due to the Topic status of the pre-verbal DP rather than failure of V raising to C. (67) constitutes independent evidence that a Topic is not allowed in that position.

Interestingly, it is possible to find independent support in favor of this hypothesis by looking at a variety of Portuguese that has inflected infinitives, but is no longer a consistent null subject language, namely Brazilian Portuguese. Modesto (2018: 89) provides examples in which propositional complements with an inflected infinitive take a pre-verbal subject:

(68) a. Eu não acredito eles estarem te roubando!
I not believe they are.INF.3PL CL.2SG stealing
'I can't believe that they are stealing from you!'
b. O governo admite eles venderem os imóveis …
the government admits they sell.INF.3PL the buildings …
'The government admits that they sell property …'

If indeed subjects in BP are not necessarily Topics and raise to Spec,TP (Barbosa et al. 2005; Barbosa 2009), the differences between the two varieties in this regard follow without any further stipulation. An account of these contrasts in terms of V-movement, however, would require a number of additional assumptions.

I now turn to the question why a Topic is not allowed in the left-periphery of these inflected infinitival complements, as in (63a) and (67), while quantificational operator movement is possible, as in (64) and (65). In order to answer this question, I must lay out my assumptions regarding the analysis of Topics.

There are two main lines of analysis of the Topic-Comment articulation in the literature. One influential approach is that of Rizzi (1997), who proposed that CLLDed Topics are introduced by a Topic head which establishes a kind of "higher predication" between the Topic in [Spec,TopP] and the rest of the clause. The other approach (Demirdache 1992; Anagnostopoulou 1997; Raposo 1996; De Cat 2005) assumes that the Topic-Comment articulation is licensed by "rules of predication" (Chomsky 1977) that require that the Topic be "base-generated" in a position of adjunction to the XP that is predicated of it, namely either TP (in embedded clauses) or CP (in root clauses). The pronominal clitic (or a gap) provides the open position required for the clausal projection to function as a predicate. Here I adopt the latter analysis. On this analysis, (67) (with a doubling clitic) is analysed as in (69a) and (63a) is analysed as in (69b):[12]

(69) a. V… [$_{TP}$ [essa proposta]$_i$ [$_{TP}$ não a$_i$ terem … aprovar *ec*$_i$]]
b. V… [$_{TP}$ [os deputados]$_i$ [$_{TP}$ ter-em$_i$ *pro*$_i$ votado …]]

The Topic is adjoined to the clausal projection that is predicated of it, which I take to be the highest inflectional projection, namely TP.[13]

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12. Besides CLLD, EP also has Topicalization, i.e., an object Topic configuration without a doubling clitic (Duarte 1987; Raposo 1998). Raposo (1998) proposed an analysis of Topicalization in EP that is just like CLLD, but with a null D in place of a clitic pronoun. Therefore, the analysis proposed in (69a) extends to object Topicalization.

13. This projection may turn out to be FinP pending on further evidence. For the sake of simplicity, I use the cover term TP; what really matters is that it is the highest projection in the inflectional domain.

Following previous work, I take subject *pro* to occupy the post-verbal position, wherefrom it is linked to (pronominal) Agr, in a manner that is similar to the empty category associated with the pronominal clitic in (69a).

Example (64), by contrast, involves movement to pre-verbal position. This kind of movement is not A-movement, given that it doesn't necessarily apply to subjects, as evidenced by (66). I assume this is a type of A-bar movement (or scrambling) that targets the specifier position of TP, which is not an A-position on this analysis. Thus, (64) and (66b) are analysed as in (70a, b) respectively:

(70) a. V… [$_{TP}$ [só os deputados]$_i$ [$_{T'}$ terem t_i votado …]]
b. V… [$_{TP}$ [só essa cidade]$_i$ [$_{T'}$ … os turistas visitado t_i]]

(69) and (70) differ configurationally: (69a, b) involve adjunction to TP; (70a, b) involve movement to Spec,TP.

In Barbosa (2000), I proposed an analysis of the marginal status of (69) that relies on this difference. It has often been proposed that adjunction to an argument is not allowed (Chomsky 1986; McCloskey 1996; Boskovič 1996). In the spirit of Boskovič (1996), I suggested that the inflected infinitival complement lacks a C (= Force) projection, so TP in (69) and (70) is an argument of matrix V. On this account, the marginal status of (69) follows from the ban on adjunction to an argument. By hypothesis, violations of this kind are rejected by native speakers, even though they are not judged as completely ungrammatical.

Independent evidence in favor of the idea that C (=Force) fails to project in complements with the inflected infinitive comes from their inability to host *wh*-movement, in contrast to non-inflected infinitives. As mentioned in the previous section, an interrogative complement cannot host an inflected infinitive (compare Examples (71a) and (71b) with (71c)):

(71) a. Não sabia já estarem aqui.
not know.PAST.1SG already be.INF.3PL here
'I didn't know you were already here.'
b. Não sabiamos onde ir.
not know.PAST.1PL where go.INF
' We didn't know where to go.'
c. *Não sabia onde irmos.
not know.PAST.1SG where go.INF.1PL

Assuming that inflected infinitival complements do not project all the way up to C (=Force), the ungrammaticality of (71c) follows, given that, in EP, *wh*-movement targets Spec,CP in embedded questions (Barbosa 2001). The grammaticality of (71b), by contrast, indicates that the non-inflected infinitival complement does project up to C.

This account predicts, of course, that when C projects, a pre-verbal referential subject should be allowed (as happens in finite complements with an overt complementizer), and this is precisely what happens. The directive verb *pedir* 'pedir' selects for the prepositional complementizer *para* 'for' and its complement may take a pre-verbal referential DP subject:

(72) Eu pedi para as crianças saírem mais cedo.
I asked for the children leave.INF.3PL more early
'I asked for the children to leave earlier.'

I now turn to an examination of other classes of verbs, namely the OC verbs under discussion in this paper. Concentrating first on subject OC verbs, I detect a contrast between referential and non-referential QPs in the following paradigms:

(73) a. ??Preferia os nossos funcionários serem mais bem pagos.
prefer.PAST.1SG the our employees be.INF.3PL more well paid
'I would prefer for our employees to be better paid.'

b. Preferia todos os nossos funcionáirios serem mais
prefer.PAST.1SG all our employees be.INF.3PL more well
bem pagos.
paid
'I would prefer for all of our employees to be better paid.'

(74) a. ??A gerência prometeu os trabalhadores receberem o
the management promised the workers receive.INF.3PL the
salário mais cedo este mês.
salary more early this month
'The managers promised that they would receive their salary earlier this month.'

b. A gerência prometeu ninguém ficar sem saláirio nos
the management promised nobody be.INF without salary in.the
próximos meses.
coming months
'The managers promised that nobody would be without a salary in the coming months.'

These contrasts between the two types of nominal expressions suggest that dislocation is what is at stake here.

Independent confirmation that the null subject property (of the consistent type) is the key factor here comes from BP, where comparable examples are fine. (Modesto 2018: 89) mentions the following BP example:

(75) Eu prefiro elas ficarem com o pai delas mesmo.
I prefer they stay.INF.3PL with the falther of.them really
'I prefer for them to stay with their father, really.'

According to Modesto (2018: 89), in BP "the only contexts in which non-finite inflection does not license overt subjects are in object control structures (that use the prepositional complementizer *a* 'to') and in nominals that also govern the use of *a* 'to'". Curiously, these are the same contexts that strongly reject a pre-verbal subject in EP, (cf. (61a) above and the following minimal pair):

(76) a. Consegui convencer os médicos a ser adiada
managed.PAST.1SG convince.INF the doctors to be.INF.3SG postponed
a operação por causa da pandemia.
the operation per cause of.the pandemia
'I managed to convince my doctors to postpone the operation because of the pandemia.'

b. *Consegui convencer os médicos a a operação
managed.PAST.1SG convince.INF the doctors to the operation
ser adiada por causa da pandemia.
be.INF.3SG postponed per cause of.the pandemia

Example (76b) is much worse than (73a) and (74a). In view of the fact that a similar effect obtains in BP, I conclude that the ungrammaticality of (76b) should be accounted for on independent grounds. Modesto (2018) observes that when the same verbs select the prepositional complementizer *de* 'of', a pre-verbal subject is possible in BP and the same happens in EP:

(77) Eu convenci-a de as crianças necessitarem de
I convinced-CL.3SG.FEM of the children need.INF.3PL of
ajuda especializada.
help specialized
'I convinced/persuaded her that the children need specialized assistance.'

In this respect *de* behaves like *para* in (72). For these reasons, I conclude that the unavailability of a pre-verbal subject in (76b) and (61a) above is not due to syntactic constraints, but rather follows from idiosyncratic morphophonological requirements imposed on the morpheme *a*. Setting this case aside, there is indeed a difference between EP and BP regarding the availability of an overt subject in pre-verbal position. In EP, though not in BP, the occurrence of a pre-verbal subject results in (mild) unacceptability in inflected infinitival complements of desiderative, commissive, epistemic and declarative predicates.

The only exception to this pattern are the complements of factive verbs (1b), which freely allow for the subject to appear in pre- and post-verbal position. Factive complements are known for being special when compared to propositional complements. Kiparsky & Kiparsky (1971) claimed that factive complements have more complex structure, with a nominal-like projection above CP. Adapting this suggestion to inflected infinitives and keeping with the proposal that they do not project C, it could be maintained that the factive verb selects a nominal projection above TP, in which case TP wouldn't be an argument. Hence adjunction would be possible and a dislocated subject would be allowed.[14] A full discussion of the syntax of factive complements, however, is well beyond the scope of the present paper, so I will have to leave the discussion at that.

Summarizing the results of this section, the restrictions on the occurrence of pre-verbal subjects that have been described for EP inflected infinitival complements (with the exception of factive complements) partly follow from the status of pre-verbal subjects in EP as a consistent null subject language. In particular, they do not apply in BP, which is not a consistent null subject language any more.

The restrictions found in EP allowed us to probe into the structure of inflected infinitival complements: these are clausal projections that lack C (=Force). This hypothesis explains yet another peculiar property of inflected infinitives, namely that they cannot be interrogative.

Now that I have answered questions one and two raised at the end of the previous section, I move on to the issue of why there are severe semantic restrictions on inflected infinitival complements of OC verbs.

5. Why are these inflected infinitival complements semantically constrained?

In the preceding sections I have quoted examples in which inflected infinitival complements of OC verbs have a different subject from the matrix clause. However, in order for such examples to be felicitous, the embedded verb needs to be either

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14. For an argument against this view, see Duarte (2018). She observes that inflected infinitival complements of factive verbs do not allow a left-dislocated object in the left periphery. However, I do not rule out the following sentence:

(i) Lamento, à Maria, não se (?lhe) poder dizer nada.
regret, to.the Maria, not REFL (DAT.3SG) can say nothing
'I regret it that we cannot say anything to Maria.'

Quite generally, sentences with object topics are informationally marked relative to sentences with subject topics. Barbosa & De Cat (2019) discuss evidence from French that shows that object CLLD doesn't exactly have the same distribution as subject CLLD.

stative or passivized. In this section, I argue that this restriction is not syntactic and can be accounted for in the semantics.

I start by observing that the contexts that license an inflected infinitive with independent reference are strongly reminiscent of the contexts that license control shift. Consider the following English sentences:

(78) *Control shift* (Landau 2000: 184)
  a. Susie$_i$ persuaded the teacher [PRO$_i$ to be allowed to leave].
  b. Grandpa promised the children$_i$ [PRO$_i$ to be able to stay up for the late show].

Persuade is an object control verb and yet, in this sentence, it allows subject control. *Promise* is a subject control verb, but in (78b) it allows control by the object. As Landau (2000) puts it, the possibility of control shift depends on a number of factors including the semantics of the embedded event, pragmatics (i.e., authority relations) as well as language/dialect-particular factors. These are roughly the factors that play a role in the licensing of an inflected infinitive with a different subject as complement of these verbs. Here, I provide an account of this effect which is based on the theory of control shift of Jackendoff & Culicover (2003).

Jackendoff & Culicover (2003) observe that the verb *promise* as well as the verbs *persuade* and *convince* select for volitional Actions.

(79) Fred promised (Louise) … / Fred persuaded Louise …
  a. *Volitional Actions*
    to run the race / to be quiet / to be examined by a doctor
  b. *Non-volitional Actions*
    *to grow taller / *to strike Simmy as smart / *to realize it was raining

The complements that express volitional Actions are called ACTIONAL complements. The authors show that the heads that select for Actional complements determine unique control (=OC) and attribute this fact to the existence of a limited number of basic predicates in Conceptual Structure that select controlled Actions as arguments; each of these can serve as a component of the meaning of verbs, nouns, and/or adjectives. One such case is the semantic predicate INTEND, which is a two-place relation: it selects an animate entity, the intender, and an action. The actor of the action argument of INTEND is necessarily bound to the intender (in order to execute an intention, the intender is committed to playing an active role in the intended action). The conceptual structure of an INTEND predicate is represented in (80). A bound position is noted by a Greek variable, which corresponds to a superscript on the binder.

(80) *intend/plan*
  x^{α} INTEND *[α ACT]*

Any verb that contains the predicate *intend* as part of its meaning has a control equation in which the intender uniquely controls the Actional complement. The verbs that fall under this class include *decide* 'come to intend' and *persuade* 'cause to come to intend'. In the latter case, the intender is the object, so the verb exhibits object control.

(81) *convince/persuade*
x$^{\alpha}$ CAUSE *[*y$^{\beta}$ INTEND *[*β ACT*]]*

Another predicate that selects an Actional complement is *be obligated*. This is a function of three arguments: person A is obligated to person B to perform some action. Since one cannot be obligated to perform someone else's action, the action is necessarily bound to the person under obligation. The basic semantic struture of obligation is (82):

(82) x$^{\alpha}$OBLIGATED *[*α ACT*]* TO y

The notion of obligation is involved in a number of control verbs, including, for our present purposes, *promise*. In this case, the person under obligation falls in subject position and this is why this verb is a subject OC verb.

In order to deal with the cases in which the designated character does not end up as controller, the authors follow the approach of Sag & Pollard (1991) and Pollard & Sag (1994), and assume that these fall under the class of specialized coercions. According to the description of intention, a verb of intending should not allow the action complement to take a different subject. This prediction, however, is contradicted by examples such as the following:

(83) Jackendoff & Culicover (2003: 542)
a. Hilary intends/plans for Ben to come along to the party.
b. Hilary plans for Ben to understand physics. (*Ben voluntarily understands physics)
c. Hilary intends/plans for the cat to be fed. (*The cat is voluntarily fed)

As argued in Sag & Pollard (1991) and Pollard & Sag (1994), the solution to this problem comes from observing that these sentences can be paraphrased as follows:

(84) a. Hilary intends/plans to **bring it about** that Ben comes along to the party / understands physics.
b. Hilary intends/plans to **bring it about** that the cat is fed.

On the basis of these paraphrases, it is reasonable to conclude that Hilary's intended action in (83) is the bringing about of the situation expressed in the complement. According to the sources cited, every time we find paraphrases that differ only in the presence of some extra material, we have the marks of COERCION, understood as the

conventionalized omission of semantic material in syntactic expression. This extra material is inserted in the course of converting syntax into semantics "by a conventionalized principle of interpretation" (Jackendoff & Culicover 2003: 542). Formally, the content of the coercion is the semantic predicate cause, as illustrated in (85):

(85) Hilary intends/plans for Ben to come along to the party.

(86) a. x^{α} INTEND [α act]
⇑ *⇑
HILARY [BEN COME ALONG TO THE PARTY]

b. x^{α} INTEND [α act]
⇑ *⇑
HILARY [Y CAUSE [SITUATION]]
⇑
[BEN COME]

Thus control diverges from the intender just in case there is coercion. With this background in mind, I now turn to EP, to the case of inflected infinitival complements of the verb types represented by *convencer* and *prometer.* Since these verbs select for Actional complements and determine unique control, it is only under coercion that an inflected infinitival complement with a different subject can be licensed. I illustrate this mechanism with the following examples. I assume that both cases involve causative coercion:

(87) a. O João convenceu a agência a ser adiada a viagem.

b. X^{α} CAUSE [Y^{β} INTEND [β ACT]]
⇑ ⇑ ⇑
JOÃO AGÊNCIA [ZCAUSE [SITUATION]]
⇑
[SER ADIADA A VIAGEM]

(88) a. O médico prometeu à assistente sermos atendidos mais tarde.

b. X^{α} IS OBLIGATED [α ACT]$^{\gamma}$ TO Y^{β}
↑ ↑
MÉDICO ↑ ASSISTENTE
[*Z* CAUSE [SITUATION]]
⇑
[*pro* SERMOS ATENDIDOS MAIS TARDE]

Since these cases require coercion, it is not surprising that they should be judged differently by different speakers, as manifested in Sheehan's (2018) questionnaire results.

Concerning the cases of apparent partial control, such as (89), the evidence discussed in Section 2 strongly supports the view that they are not instances of unique control. I thus propose that they too involve coercion:

(89) a. O João convenceu a Maria a viajarem mais tarde.

b. X^{α} CAUSE [Y^{β} INTEND [β ACT]]

⇑ ⇑ ⇑

JOÃO MARIA [Z CAUSE [W ACT]]

⇑

[*pro* VIAJAREM MAIS TARDE]

In this case, the individual referred to by the argument that is selected as unique controller is included in the group that has the role of actor of the embedded action, a fact that explains the higher acceptability rates that are found with this kind of examples in Sheehan s results (see Section 3.1).

Finally, let us consider the cases in which there is identity of reference between the unique controller and the null subject of an embedded infinitival complement:

(90) a. O João convenceu-nos a viajarmos mais tarde.
the João convinced-CL.1PL to travel.INF.1PL more late
'João convinced us to travel later.'

b. Eles prometeram à Maria chegarem mais tarde.
they promised to.the Maria arrive.INF.3PL more late
'They promised Mary that they would arrive later.'

Since the embedded situation in this case is an action and its agent bears the same index as the unique controller selected by the matrix verb, no coercion is required.[15]

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15. With subject control verbs, this pattern doesn't always result in full acceptability. Here are the results obtained by Sheehan (2018) for *prometer* 'promise':

(i) Prometemos à professora chegar(%mos) a tempo.
promised to.the professor arrive.INF.(1PL) on time
'We promised the professor that we would arrive on time.'
uninflected 100% n = 37; inflected 47% n = 68

Sheehan attributes the deviance of (i) to obviation. Since there is a strong crosslinguistic tendency for obviation to disappear whenever the antecedent is not the subject of the matrix clause (Farkas 1992), the fact that this effect is found only with subject control verbs follows.

Summing up, an inflected infinitive with independent or partially overlapping reference can appear as complement of *prometer, convencer* and *persuadir* only under coercion. A similar account extends to the verb *decidir* 'decide'. Consider the following examples, taken from the web:

(91) a. Bom, decidi irmos espreitar…
well, decide.PAST.1SG go.INF.1PL peek…
'Well, I decided for us to go peek …'[16]

b. Foi na areia da Meia Praia que decidi serem
was on.the sand of.the Meia Praia that decide.PAST.1SG be.INF.3PL
essas 24 Horas a minha úiltima reportagem para o Autosport.
those 24 hours the my last report for the Autosport
'It was on the sands of Meia Praia that I decided that those 24 hours were my last report for Autosport.'[17]

In these examples, the situation expressed in the embedded clause is understood as being brought about by the individual referred to by the subject of the matrix.

This account cannot be extended to desideratives such as *preferir* 'prefer' or *desejar* 'wish' in view of the fact that these verbs may take non-Actional complements:

(92) a. Eu prefiro ser alta / saber física.
I prefer be.INF tall / know.INF physics
'I prefer to be tall / to know physics.'

b. Ela deseja ser alta / saber física.
she wishes be.INF tall / know.INF physics
'She wishes to be tall / to know physics.'

Yet, these verbs display a pattern that is similar to that of *decidir*: they tend to allow an inflected infinitive with independent reference only when the complement situation is stative; with Actional complements an inflected infinitival complement is allowed just in case there is partially overlapping reference. Thus, the distribution of the inflected infinitive appears to be sensitive to agentivity, even though coercion cannot be appealed to here. An examination of the complex issue of the semantics of verbs that indicate attitudes of preference is clearly beyond the scope of the present article. Therefore, I can only offer a gist of a hypothesis to be explored in future work.

16. https://omundodospiratas.blogs.sapo.pt, consulted on 14.12.2020

17. www.velocidadeonline.co.pt/arquivos, consulted on 14.12.2020

One aspect of the grammar of selected complements of desideratives that is sensitive to agentivity is the phenomenon of obviation in subjunctives. Consider the following sentences:

(93) Ela$_i$ prefere que *pro*$_{*i/k}$ fale com o diretor.
she prefers that *pro* talk.SUBJ.3SG with the director.
'She prefers that he/she/you talk with the director.'

(94) a. Ela$_i$ prefere que *pro*$_{i/k}$ seja aluna aqui.
she prefers that *pro* be.SUBJ.3SG student here
'She prefers it that she is a student here.'
b. Ela$_i$ prefere que *pro*$_{i/k}$ seja ouvida hoje
she prefers that *pro* be.SUBJ.3SG heard today
'She prefers to be heard today.'

In (93) the subject of the embedded clause is interpreted as disjoint in reference from the matrix subject; in (94) a coreference reading is possible. This paradigm shows that obviation is weakened in case the complement is passivized or if it contains a non-agentive main verb. Farkas (1992) observes that this situation is reminiscent of facts pertaining to controller choice in infinitives and concludes that there is a correlation between obviation and control. In particular, she proposes that the obviation effect found in selected subjunctives is due to blocking. Assuming that the infinitive is the form used to mark subject dependency, this form blocks the subjunctive option whenever a subject dependency is intended. Blocking only obtains when the controlled argument is the *initiator* of the situation in which it is a participant.

Here I wish to suggest that the distribution of an inflected infinitive in the complement position of desiderative verbs can only be understood in light of these blocking effects. In particular, the generalization appears to be that an inflected infinitival complement with independent reference is not possible in the contexts that trigger obviation effects. This generalization is confirmed by an examination of other non-obviative contexts such as counterfactual desires:

(95) Ela$_i$ preferia que [–]$_{i/k}$ tivesse falado.
she prefer.PAST.IMP.3SG that [–] had.SUBJ.3SG talked
'She would rather have talked.'

In this example the matrix verb is in the imperfective past and the embedded complement contains retrospective aspect. The sentence conveys a counterfactual desire. Interestingly, inflected infinitives with an independent subject are particularly productive in this type of counterfactual context. Several examples of the type of (96) can be found on the web:

(96) Não está fechada a eliminatória mas preferia termos
not is closed the finals, but prefer.PAST.IMP.3SG have.INF.1PL
perdido por 2–1.
lost for 2–1
'The finals is not closed, but I would prefer to have lost for 2–1'[18]

I propose an account of this correlation that is inspired in Laca's (2015) study of the semantics of subjunctive complements of volitionals in Spanish. Laca (2015) observes that volitionals are a heterogeneous class. She examines the different patterns of temporal orientation affecting intensional subjunctives and she suggests that differences in temporal orientation are connected to the different types of semantic objects denoted by selected subjunctive argument clauses. Volitionals may be interpreted as dispositions to act, in which case the complement is construed as an OUTCOME, or else they may carry the semantics of non-factive evaluatives, in which case the complement is construed as a proposition. The term "outcome" is borrowed from Ginzburg & Sag (2001), who extend a proposal originally due to Portner (1997), and is meant to correspond to the denotata of imperatives, as well as infinitives and subjunctives embedded under directives.

Here I wish to propose that when the complement denotes an outcome and the outcome is an Action, the infinitive signals subject dependency and blocks the use of the subjunctive. From this it follows that the subjunctive is used in cases of disjoint reference. This preempts the use of any type of infinitive – including the inflected infinitive – in cases of disjoint reference.

When subject dependency is intended, the non-inflected infinitive blocks the use of the inflected infinitive. This can be seen in the ratings obtained by Sheehan (2018) for the following sentence:

(97) Sheehan (2018: Example (17), p. 33)
Preferíamos receber(*mos) um salário maior
prefer.1PL receive.INF(.1PL) a salary better
'We would prefer to meet later on.'
uninflected 100%; inflected 4%, *n* = 68

In those cases in which the reference of the matrix subject is included in that of a plural embedded subject, there is no identity of reference so neither the inflected infinitive nor the subjunctive are blocked. Thus, both of the following options are fine:

(98) a. Prefiro que vamos já embora.
prefer.1SG that go.PRES.SUBJ.1PL immediately away
'I prefer for us to leave immediately.'

18. https://camaroteleonino.blogs.sapo.pt, consulted on 14.12.2020

b. Prefiro irmos já embora
prefer.1SG go.INF.1PL immediately away
'I prefer for us to leave immediately.'

By hypothesis, it is this competition among alternative derivations that gives rise to the illusion of obligatory partial control with this class of verbs. Thus, the mechanisms underlying the constraints on subject reference found in inflected infinitival complements of desiderative verbs differ from those at work in the complements of the other verbs discussed here. Curiously, (97), with identity of reference, gets considerably worse ratings than comparable examples with *prometer* (see footnote 14). This difference constitutes evidence in favor of the need for a distinct treatment of the two cases, as proposed here. Yet, in spite of the differences, there is a common link that determines superficially similar restrictions, namely the particular status of Actional complements in obligatory control contexts.

6. A note on Brazilian Portuguese (Modesto 2009, 2018)

In this section, I briefly discuss Brazilian Portuguese (BP). Even though it has often been claimed that inflected infinitives are gradually disappearing from colloquial BP, the fact is that they are still commonly used in writing, as can be confirmed by a cursory look at the language used in informal chats and other social media on the web. Modesto (2018) aknowledges this fact and argues that inflected infinitives are used by part of the Brazilian speakers, who have intuitions about them. He claims that these intuitions are the reflex of a grammar that is no longer that of standard EP. In particular, he claims that the null subject of any inflected infinitive in the grammar of these BP speakers is not *pro*, but rather PRO.

In order to show that the null subject of an inflected infinitival complement must have an antecedent in a higher clause, Modesto (2009) mentions the following minimal pairs:

(99) Modesto (2009: 85, Example (10a,b))
a. O presidente$_i$ preferiu / odiou *ec*$_{i+}$ se reunirem
the president prefer.PAST.3SG / hate.PAST.3SG *ec* REFL meet.INF.3PL
às 6.
at.the 6
'The chair preferred to gather at 6:00.'
b. *O presidente$_i$ detestou *ec* serem entrevistados sem ele$_i$.
the president hate.PAST.3SG *ec* be.INF.3PL interviewed without him

Modesto claims that (99a) is a case of partial control, where the referent of the antecedent is contained in the reference of the null subject of a collective verb.

Modesto (2018) argues that it is only when the subject of the inflected infinitive is null that it must be obligatorily controlled in BP. The evidence given in favor of OC consists in the standard diagnostics for OC: the antecedent of the null subject must be local; in VP ellipsis sentences, only the sloppy reading is available, *de se* readings are enforced; the null subject is obligatorily interpreted as a bound variable.

Having described Modesto's arguments, I now turn to what I consider to be challenges to his claim. The first obstacle is empirical. A search in Google retrieves examples by BP speakers in which the null subject of an inflected infinitive selected by subject control verbs such as *preferir* 'prefer' and *prometer* 'promise' is not controlled by an argument of the immediately higher clause.

(100) Preferia terem gasto uma grana em um meia armador. Mais
prefer have.INF.3PL spent a grand in a half guard more
do que buscar um lateral…
of.the that seek a lateral…
'I would rather they had spent money on a half-guard instead of a lateral.'[19]

(101) Sobre as obras da Etec de Itaquera, Alckmin **prometeu estarem**
about the works of-the Etec of Itaquera, Alckmin promised be.INF.3PL
prontas em três meses, mais somente vai funcionar em agosto
ready in three months, but only will function.INF in August
de 2014.
of 2014.
'As for the construction works of Etec of Itaquera, Alckmin promised they would be ready im three months, but it will only function in August of 2014.'[20]

(102) Vai ter capítulos extras sim, mas não **prometo** *ec*
goes have chapters extra yes but not promise.PRES.1SG *ec*
serem frequentes.
be.INF.1SG frequent
'There will be extra chapters, yes, but I don't promise that they will be frequent.'[21]

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19. https://saopaulo.blog/2019/07/31/x-jr-tavares-na-esquerda-calazans-na-direita-leo-na-zaga-l-fernandes-no-meio-os-testes-de-cuca/, consulted on 20-3-2020

20. http://www.gazetavirtual.com.br/entrevista-alckmin-fala-sobre-seguranca-moradia-transporte-e-educacao/, consulted on 20-3-2020.

21. https://www.spiritfanfiction.com/historia/me-deixe-curar-sua-dor-yoonmin-9923583/capitulo36, consulted on 20-02-2020.

These examples show that the inflected infinitive need not be controlled by an argument of the next clause up, as would be expected under an OC account. The empty subject is anaphoric to a highly accessible antecedent, but the latter is not contained in the next clause up.

This requirement for an accessible antecedent, however, is not a peculiar property of inflected infinites given that, quite generally, null subjects in finite clauses have a restricted distribution in colloquial BP and must have a sufficiently accessible antecedent. Thus, according to most sources, in sentences such as (103), the embedded subject may not be null in colloquial BP even though it can be null in the presence of a salient topic (104) (Ferreira 2000; Modesto 2000; Rodrigues 2004):

(103) Modesto (2018: 67, Example (5b))
Eu acho que *(eles) estão na praia.
I think that (they) are at.the beach
'I think that they are at the beach.'

(104) Ferreira (2000)
A: E o João? B. As pessoas estão achando que viajou para
A: and the João B. the people are thinking that travelled to
a Europa.
the Europe
'A: And João? B: People think that he travelled to Europe.'

This highly restricted distribution of finite clause null subjects is related to the observation that BP is no longer a consistent null subject language and is probably best characterized as a partial null subject language (Holmberg 2005; Rodrigues 2004; Modesto 2008; Barbosa 2019). In effect, finite clause null subjects have been argued to display the range of properties described by Modesto for the null subject of inflected infinitives. In particular, the antecedent must usually c-command the null subject:

(105) (Modesto 2008: 382, Example (6a))
[O amigo do $\text{Feco}_1]_2$ disse que $\text{ec}_{*1/2/*3}$ ganhou a competição.
the friend of.the Feco said that textitec won the competition
'Feco's friend said he won the competition.'

In addition, only sloppy readings are available under ellipsis:

(106) Rodrigues (2004: 147, Example (48))
a. A Maria encucou que ela estava grávida e o Pedro também.
the Maria believed that she was pregnant and the Pedro also
'Maria believed that she was pregant and so did Pedro.' (=Pedro believed that she was pregnant)

b. #A Maria encucou que estava grávida e o Pedro também.
the Maria believed that was pregnant and the Pedro also
'Maria believed that she was pregant and so did Pedro.' (=*Pedro believed that she was pregnant)

Finite null subjects in BP have also been shown not to allow *de re* interpretations and to display only the bound variable reading when the antecedent is modified by a Focus operator (Rodrigues 2004).

There are different theories of the status of finite clause null subjects in BP. One approach assimilates them to instances of Finite OC regarded as movement (Ferreira 2000; Nunes 2019; Rodrigues 2004). Modesto (2000) adopts the view that *pro* in BP is an A-bar bound variable, and yet another view (Barbosa 2019) claims that it is best analysed as a subject anaphor. All of these theories have the potential to capture the facts just described.

In any event, independently from the analysis adopted for finite clause null subjects, what matters is to observe that the behavior of the null subject in inflected infinitives is not peculiar to infinitives. This means that there is no need to assume that the status of the null subject in inflected infinitives is special.

This is not to say that there are no differences between finite clauses and inflected infinitival clauses regarding the range of interpretations of null subjects. Finite clauses have independent tense, unlike infinitives, and this difference is bound to have an effect on how the embedded complement is interpreted. Thus, when a verb like *avisar* 'warn' or *convencer* 'convince' takes a non-finite complement, object control is obligatory, when it takes a finite complement, subject control is obligatory:

(107) Ninguém avisou vocês pra não saírem de casa?
noone warned you.PL for not leave.INF.3PL of.the home
'Did noone tell you not to leave home?'

(108) Modesto (2018: 79, Example (18b))
Ele$_1$ avisou a Maria que *ec*$_{1/*2}$ vai viajar.
he warned the Maria that ec will travel
'He warned Maria that he will travel.'

Modesto (2018) takes this minimal pair to show that the *ec* in each case is different. It is PRO in (108) and *pro* in (107). I believe that this paradigm, by itself, doesn't constitute an argument in favor of the idea that the status of the empty category is different in each case. In order to see why, consider the following minimal pair taken from EP (a consistent null subject language):

(109) a. O Carlos$_i$ disse ao Pedro$_j$ que *pro*$_j$ fosse embora.
the Carlos said to.the Pedro that *pro* go.SUBJ.3SG away
'Carlos told Pedro to leave.'
b. O Carlos$_i$ disse ao Pedro$_j$ que *pro*$_i$ foi embora.
the Carlos told to.the Pedro that went away
'Carlos told Peter that he left'

In (109a), the antecedent for the null subject must be the matrix object; in (109b), it must be the matrix subject. These different patterns are obviously connected to mood inflection in the embedded clause, which, in turn, is connected to clause type: in (109a) the complement denotes a request (probably an outcome in the sense of Laca (2015)); in (109b) it denotes a proposition. This doesn't mean, however, that the empty subject in each case is of a different nature. It is *pro* in both cases and other factors condition the way its antecedent is determined.[22] By parity of reasoning, I see no reason to distinguish the empty category in (107) and (108) solely on the basis of this interpretative contrast.

On the other hand, there would be grounds for positing PRO in (107) if the subject of inflected infinitives in BP were subject to the locality constraints that are typical of OC. However, the naturalistic data presented in (100), (101) and (102) clearly show that this is not true. These examples show that the null subject needs a very salient antecedent, just like the finite null subject in BP, but doesn't require an OC configuration. I thus conclude that the evidence in favor of a PRO subject in inflected infinitives in BP is too weak.

7. Conclusions

In this paper, I have reviewed the arguments presented in the literature in favor of the idea that inflected infinitival complements of certain OC attitude verbs are (or can be) obligatorily controlled (Sheehan 2013, 2018; Modesto 2009, 2018). I have examined the arguments based on apparent partial "control" and I have argued that these are not cases of OC either in EP or in BP. They are rather instances of *pro,* interpreted by the same operations that govern its interpretation in finite clauses in each variety. Focusing on EP, I have shown that this conclusion allows for a more precise characterization of the distribution of the inflected infinitive in verbal complement position: an inflected infinitive is barred from occurring in the complement

22. For an OC analysis of *pro* in Spanish examples comparable to (109a), see Suñer (1986). As should be clear from the argumentation developed thus far, I do not endorce this view.

position of restructuring verbs and in interrogative complements. Contra Gonçalves et al. (2014), I have argued that the temporal properties of inflected infinitives do not differ substantially from those of their non-inflected counterparts. Adopting Grano's (2015) suggestion that non-restructuring infinitives project a semantically vacuous Tø, the availability of the inflected infinitive in non-restructuring environments follows on the assumption that a T projection is minimally required for the licensing of an inflected infinitive. Incompatibility with restructuring verbs is explained under the hypothesis that these verbs realize functional heads in the inflectional layer of the clause and thereby give rise to monoclausal structures, as proposed in Cinque (2006); Grano (2015) and Wurmbrand (2003).

The unavailability of an inflected infinitive in an interrogative complement, by contrast, was attributed to lack of a C (=Force) projection, a hypothesis that was independently motivated on the basis of the distribution of overt subjects.

The restrictions on subject reference found in inflected infinitival complements of different OC attitude verbs in EP have been argued to stem from the particular status of Actional complements in obligatory control contexts.

In the spirit of Jackendoff & Culicover (2003), I assumed that 'promise'- type verbs and object control attitude verbs such as 'convince' require their infinitival complement to be a volitional Action and impose restrictions on the choice of Actor of the Action. Inflected infinitival clauses with a subject with independent reference can only be embedded as complements of these verbs when they are coerced into volitional Actions. This explains their restricted distribution, thus contributing to the illusion of OC.

As regards desideratives, I suggested that the restrictions on the reference of the subject in inflected infinitival complements follow from competition with the other two alternative forms, the subjunctive and the non-inflected infinitive.

Landau (2015) argues that the presence of φ-feature agreement inflection blocks control in attitude complements, but not in non-attitude complements. The results of this paper corroborate the first part of Landau's generalization, so the question that arises now is whether inflected infinitives in non-attitude complements exhibit the properties of OC. This issue is obviously beyond the scope of the present paper and is left for future work.

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Agent control in passives in Romanian

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We examine control by the external argument of passives in Romanian. As copular passives generally disallow clausal subjects, this issue only concerns reflexive-based passives (so-called '*se*-passives'). Although it is difficult to find unequivocal control instances in Romanian due to the gradual replacement of infinitives by subjunctives and the nominative-licensing potential of infinitives, there are some verbs for which control can be assumed (aspectuals and ability modals). These verbs allow *se*-passives, but in this case *se* must be repeated on the infinitive or subjunctive complement. We argue that this does not represent voice agreement under restructuring, but rather an instance of control, involving *matching* between the external arguments of the matrix and the embedded *se*-verbs, for which we propose generation in an argument position, SpecVoiceP. Romanian '*se*-passives' are analyzed as a construction halfway between actives and passives, having a nominative theme (with which T agrees) but also a projected external argument.

1. Introduction: Control with agents of passives across languages

This paper addresses the issue of control by the agent of passives in Romanian against the background of the recent research on implicit control in Pitteroff & Schäfer (2019) and Landau (2015). This isssue has never been discussed extensively; the only discussion is in Dobrovie-Sorin (1998), who observes that *se*-passives do not allow control in examples such as (1a); however, such examples become grammatical if *se* is replicated on the embedded verb, a fact which has remained unobserved so far.

(1) a. *S-a promis [a respecta dispoziţiile].
REFL-has promised to obey instructions-the
b. S-a promis [a se respecta dispoziţiile].
REFL-has promised to REFL obey instructions-the

For other languages, it has been noticed that implicit control, illustrated in (2), is only possible if the passive does not have a nominative (agreeing) derived subject

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(see Van Urk 2013, who refines Visser's 1973 generalization), as shown by the contrast between (2a) and (2b); (2c) (taken from van Urk 2013: 169) shows that the derived subject is the controller ('IA' stands for 'implicit argument'):

(2) a. It was promised (IA_i / by $Peter_i$) [PRO_i to do the shopping].
b. *Mary was promised (IA_i) [PRO_i to do the shopping].
c. $Calvin_i$ was promised / offered PRO_i to be allowed to stay up late.

Landau (2015) claimed that control by the implicit external argument of passives is limited to attitude verbs, which, in his framework, involve *logophoric* control. Thus, whereas (3a) is possible, examples of the type in (3b), with *predicative* control verbs, are disallowed (not only in English, but also in other languages, see Hebrew and Russian):

(3) a. It was decided / agreed / preferred to raise taxes again. (Landau 2015: 70)
b. *It was managed / tried / dared / stopped to raise taxes.

Landau's explanation of this contrast relies on his distinction between two ways of establishing obligatory control: by predication, in the case of predicative control, where the subordinate is a FinP (with a PRO subject) that denotes a predicate, and by variable binding in the case of logophoric control, where the subordinate clause is a CP that denotes a proposition (the Spec of this CP contains a *pro* that is bound by the controller).[1] Landau derives the ban on predicative control by the agent of passives from the general principle in (4):

(4) Condition on Syntactic Predication: The argument predicated of must be syntactically present

The underlying assumption is that the external argument of passives is not syntactically present.

Pitteroff and Schäfer (2019) have shown that the limitation of control by the agent of passives to logophoric control is only manifested in some languages (English, French, Hebrew, Russian), whereas other languages (Norwegian, German, Dutch, Icelandic) allow agent control with all types of predicates, see (5), which features predicative control:

(5) a. Først da ble det stoppet å røyke.
only then was it stopped to smoke
'Only then people stopped smoking.'
(Norwegian; Pitteroff & Schäfer 2019: 152)

1. The relation between this *pro* and the argumental PRO is mediated by predication: the argumental PRO moves to SpecFinP and creates a predicate, which applies to the *pro* in SpecCP.

b. (…) es wurde begonnen, sie abzuarbeiten.
it was started it to-work-off
'(…) people began to work it off.' (German; ibid. 149)

For the impossibility of implicit control in passives with non-attitude verbs in English-type languages, the authors propose that: (i) the subject pronoun with a CP-associate, in examples such as (2a) and (3a), is not a genuine expletive, but a theta-marked pronoun with a propositional denotation, which is bound by its CP-associate (this pronoun is called a 'CP-placeholder'), and (ii) the complement of non-attitude obligatory control verbs has a property-denotation (cf. Landau 2015), and property-denotation expressions cannot be subjects (cannot occur in SpecTP), which rules out a CP-placeholder pronoun for non-attitude verbs as in (3b). This rules out (3b) independently of the issue of control. German-type languages have 'truly impersonal' passives, i.e. passives without a thematic subject associated to a CP, as further confirmed by examples such as (6a–b) (which can be replicated in Dutch and Icelandic). Such examples are impossible in English (see (6c)). The grammaticality of (6a–b) relies on the fact that the EPP can be checked by a true expletive, as in Norwegian, or there is no EPP on SpecTP and T's features can fail to agree and receive a default value, as in the other three languages:

(6) a. Gestern wurde getanzt. (German)
yesterday was danced
b. I går ble det danset. (Norwegian)
yesterday was it danced
'People danced yesterday.' (Pitteroff & Schäfer 2019: 165)
c. *It was danced. (English)

Romanian is not in the sample of languages discussed by the aforementioned authors. Romanian is special in two respects: (i) it has two types of passives (participial / copular and reflexive passives), which behave differently with respect to the availability of clausal complements, and (ii) it may use a finite verbal form in obligatory control contexts (the subjunctive). As impersonal passives are allowed, in the form of '*se*-passives' (i.e. reflexive passives), one would expect implicit control with non-attitude verbs to be possible. However, unlike in the other languages described so far, the construction used in such contexts involves doubling the voice marker *se* on the embedded verb, as we will see in Section 2. After examining a number of possible analyses of this doubling (Section 3), we will adopt an account based on Landau's (2015) analysis of agreement in predicative control (Section 4). This analysis implies that the external argument in *se*-passives is syntactically projected, for which we will present independent evidence in Section 4.1. Section 5 draws the conclusions.

2. Control with implicit agents of passives in Romanian

Romanian has two types of passives: (i) passives based on the passive participle, which combine with the copula in clausal constructions – therefore they are sometimes labeled 'copular' or 'be'-passives; (ii) passives based on the reflexive 3rd person accusative clitic *se*, see (8):

(7) Problema este frecvent dezbătută {de / de către politicieni.}
problem-the is frequently debated by politicians
'The problem is frequently debated these days by politicians.'

(8) Aceste teme se dezbat {de către / %de} Parlament.
these issues REFL.3.ACC debate.3PL by Parliament
'These issues are debated by the Parliament.'

Se-passives show a number of constraints on the theme, which will be presented in Section 4.1, as well as on the agent-PP (for some of these, see Dobrovie-Sorin & Giurgea 2018).[2]

Se-passives can be used 'impersonally', i.e., with intransitives.[3] The allowance of *by*-phrases, as in the attested example in (9), taken from Dobrovie-Sorin & Giurgea (2018), shows that this is not an active impersonal construction (for other arguments, see Dobrovie-Sorin 1998):

(9) Să nu uităm că la acest moment se vorbește de către
SBJV not forget.1PL that at this moment REFL speaks by
autorități de o nouă reorganizare administrativ-teritorială.
authorities about a new reorganization administrative-territorial
'Let's not forget that at this moment the authorities are talking about a new administrative and territorial reorganization.'
<https://www.verticalonline.ro/autoritatile-comuniste-si-reorganizarea-comunelor-in-1968-iii> (24 January 2021)

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2. As shown in (6), Romanian uses two prepositions for *by*-phrases: a functional preposition with many other uses, *de* 'of, from', and a specialized complex preposition, *de către*, lit. 'from towards'. In *se*-passives, some speakers only allow the use of the latter (see (7)).

3. Participial forms can be used impersonally only when selected by the modals *trebui* 'must' and *merita* 'deserve, be worth':

(i) Trebuie **mers** devreme.
must gone early
'One must go early.'

Participial passives are severely restricted with clausal themes, at least in the standard language,[4] as opposed to *se*-passives:

(10) a. {S-a sperat /* Este sperat} {că nu se va repeta / să nu
REFL-has hoped / is hoped that not REFL will repeat SBJV not
se repete}.
REFL repeat.3
'It is hoped that this will not happen again.'

b. {S-a decis / ?? A fost decis} [ca spectacolul să înceapă
REFL-has decided has been decided that show-the SBJV begin.3
la şase].
at six
'It was decided that the show should begin at 6 o'clock.'

This restriction is likely due to the fact that passive participles require φ-feature valuation or a D-bearing element in a specifier position, and object clauses do not provide such features (genuine subject clauses behave differently, see Cornilescu 2019). This shows that Romanian has neither a CP-placeholder *pro* equivalent to the English *it* in (2a) nor an expletive *pro* equivalent to the Norwegian *det* in (5a). This means that impersonal *se*-passives (see the grammatical variants of the examples in (10) and (11) below) rely on the absence of a φ-related EPP, being of the German / Icelandic-type. Romanian does indeed allow configurations with no nominative / agreeing argument (see (12)) and has no expletives, facts which support the conclusion that it lacks a φ-related EPP.

(11) Ieri s-a dansat.
yesterday REFL-has danced
'People danced yesterday. / There was dancing yesterday.'

(12) Îmi pasă de el.
me.DAT =cares of him
'I care for him.'

Given all this, the prediction that can be drawn from Pitteroff & Schäfer (2019) is that both logophoric and predicative control should be possible with impersonal *se*-passives. However, as shown by Dobrovie-Sorin (1998), *se*-passives disallow control infinitives (she includes this fact among the arguments against the existence of a 'nominative' *se* in Romanian):

4. Examples of clausal subjects with copular passives can be found on the Internet. It is not clear whether they are all due to the influence of English (many texts are translated) or, at least partially, reflect a different grammar.

(13) a. *S-a promis [a respecta dispoziţiile].
REFL-has promised to obey instructions-the
b. *S-a început [a ţine seama de nevoile tuturor].
REFL-has begun to take account-the of needs-the all.GEN
(Dobrovie-Sorin 1998: 427)

Note however that the examples in (13) become grammatical if *se* is replicated on the embedded verb:

(14) a. S-a promis [a se respecta dispoziţiile].
REFL-has promised to REFL obey instructions-the
'It was promised to obey the instructions.'
b. S-a început [a se ţine seama de nevoile tuturor].
REFL-has begun to REFL take account-the of needs-the all.GEN
'They began to take into account everybody's needs.'

Finding situations of control in Romanian is not a trivial issue, due to several facts: (i) Romanian is a pro-drop language that typically uses a finite form (the subjunctive) in contexts in which other languages use control infinitives; (ii) the infinitive, which is nowadays mostly restricted to a bookish style, allows nominative subjects, not only in adjunct and subject clauses, but even in complement clauses (under conditions which still need to be clarified), as in (15);[5] (iii) implicative verbs such as *reuşi* 'succeed', *încerca* 'try', which involve obligatory control in other languages, accept disjoint subjects in Romanian, as shown in Cotfas (2012).

(15) Sper a nu fi respinsă o părere a unui umil Părerist.
hope.1SG to not be rejected an opinion GEN a.GEN humble opinionator
<https://revista22.ro/opinii/andreea-pora/filmul-sf-ciocoii-351i-poporul-produs-de-usl-351i-ddd> (24 January 2021)
'I hope that the opinion of a humble opinionator will not be rejected.'

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5. Nominative subjects in complement infinitives seem to be allowed if the verb is non-agentive (in a Google search for infinitive complements to *spera* 'to hope', most of the results show copular *be*, see (i), or passive verbs).

(i) Celia, sperând a fi benefică pentru ea mutarea în capitală, (…)
Celia hoping to be auspicious for her movement-the in capital-city
'Celia, hoping that her return to the capital will be auspicious,…'
<(http://www.sighet-online.ro/index.php?option=com_content&view=article&id=9891:multipla-medaliata-la-atletism-pe-drumul-spre-campionatele-mondiale-de-juniori&catid=38:sport&Itemid=134> (24 January 2021)

Another facilitating property appears to be A-bar movement of the subject of the infinitive (a lot of the attested examples involve *wh*-movement or topicalization).

Since the occurrence of the infinitive is not a sufficient condition for the existence of control (see (15)), we must confine our research to verbs for which disjoint subjects are clearly impossible. There are a handful of such verbs in Romanian: aspectuals (*începe* 'begin', *continua* 'continue', *termina* 'finish', *înceta* 'cease'), certain circumstantial modals (*şti* 'know', *învăţa* 'learn', ability *putea* 'can')[6] and the implicative *uita* 'forget'. We find the "double *se*" pattern (*se*-matrix V… *se*-embedded V) with these verbs, regardless of whether they take *a*-infinitives or subjunctives:

(16) Atunci **s**-a început [a **se** dilua laptele cu apa].
then REFL-has started to REFL dilute.INF milk-the with water-the
<http://informatiicenzurate.ro/2015/01/24/alimentatia-naturala-in-copilarie.html> (24 January 2021)

(17) **S**-a început [să **se** discute despre expresia eco-condiţionalitate]
REFL-has started SBJV REFL discuss.3.SBJV about expression-the eco-conditionality
'People started to discuss about the expression *ecoconditionality.*' (*Analele Universităţii "Constantin Brâncuşi" din Târgu Jiu, Seria Ştiinţe Juridice*, 2/2012, 65)

(18) **Se** învaţă să **se** elaboreze poveşti folosind …
REFL learns SBJV REFL elaborate.3.SBJV stories using
'One learns (how) to invent stories using …'
<http://www.nonformalii.ro/metode/origami-teatru> (24 January 2021)

(19) **Se** continuă a **se** fura prin lege.
REFL continues to REFL steal.INF by law
'Theft facilitated by law continues.' <https://www.mediafax.ro/politic/basescu-nu-imi-place-ca-in-guvern-se-continua-a-se-fura-prin-lege-nu-tolerez-nu-e-in-acordul-de-coabitare-11088552> (24 January 2021)

Examples (17) and (18) illustrate a well-known property of Romanian and other Balkan languages: the fact that a finite verbal form, the subjunctive, can be used in obligatory control contexts (this equally holds in active environments, e.g. *Pot / Încep să scriu* 'can.1SG / begin.1SG SBJV write.1SG).[7] The subjunctive can also occur in raising environments, e.g. with *părea* 'seem'.

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6. Examples with *se*-passive *putea* are very rare and hard to identify, because of the competition with the inherent reflexive *se putea*, which is an impersonal verb with an epistemic or deontic meaning – 'be possible, be likely, be allowed'.

7. The subjunctive is morphologically marked by the subjunctive particle *să*, which is the first element of the cluster of clitic elements surrounding the verb, and by a special ending for the 3rd person. In the other persons, the verbal inflection is the same as for the indicative (except for the copula). Although *să* can also be the first element of the subjunctive clause, as in ex. (16), it does

3. Towards an account: Why some analyses don't work

Our task is to explain the obligatory occurrence of *se* on the embedded verb, in configurations where control is expected. The Romanian data show a prima face resemblance with the double passives encountered in control configurations in other languages (Florian Schäfer, personal communication):

(20) el producto **fue** empeza**do** a **ser** utiliza**do** como conservante
the product was begun.MSG to be used as preservative
(Spanish; Bosque & Gallego 2011)

(21) Slike ting forsøke**s** ofte å gjøre**s.**
such things try.PRES.**PASS** often to do.INF.**PASS**
'One often tries to do such things.' (Norwegian; Lødrup 2014)

(22) Pära tafan-ma-chägi ma-na'fanätuk ni lalahi siha.
FUT 1PL.IR.IN-**PASS**-try NPL.RL.IN.**PASS**-hide OBL men PL
'The men will try to hide all of us.'
(Chamorro; Wurmbrand & Shimamura 2017)

However, these examples involve personal passives in the matrix, which is not acceptable in Romanian:

(23) a. ??Asemenea lucruri **se** încep să **se** facă / a **se** face tot
such things REFL begin.3PL SBJV REFL do.3 / to REFL do ever
mai des.
more often

b. *Asemenea lucruri **sunt** începu**te** greu a **se** face / a **fi** făcute
such things are begun.FPL hard to REFL do / to be done
/ să **se** facă… / să **fie** făcute.
/ SBJV REFL do.3 / SBJV be.3 done

The double passive construction in (20)–(22) is analyzed by Wurmbrand and Shimamura (2017) as an instance of Voice agreement between the embedded and the matrix Voice. Voice agreement is assumed to be a sub-case of Voice restructuring. In Voice restructuring configurations, the embedded verb comes with unspecified Voice. As such, there is no accusative case assignment in the embedded clause, and no embedded external argument (i.e., no PRO). The matrix verb case-licenses the embedded

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not sit in C: in clauses with preverbal constituents, the complementizer *ca*, a form dedicated for subjunctives, normally occurs in C, and *să* stays with the verb, as we can see in Example (9c) and in (i) below (see Dobrovie-Sorin 1994; Hill 2003; Alboiu 2007; Cotfas 2017, a.o.):

(i) Sper ?(ca) cineva să-mi dea dreptate.
hope.1SG that$_{SBJV}$ somebody SBJV-me.DAT give.3.SBJV justice
'I hope somebody will acknowledge that I'm right.'

theme; if it is passive, the embedded theme is licensed as nominative (yielding long object movement). Double passives are claimed to involve an embedded Voice with unvalued voice features, valued by upward (Reverse) Agree with the matrix Voice.

However, if the matrix verb case-licenses the embedded theme, we expect it to show agreement with the theme (word order is not a reliable test, because in Romanian nominative is licensed postverbally and raising to a preverbal position is not required for case or φ-EPP reasons).[8] But agreement of the matrix verb is ruled out, not only in examples of the type in (23), but also in cases where the theme occurs in situ, as in (24):

(24) a. {S-a / ??S-au} început să se aducă obiecţii.
REFL-has / REFL-have.3PL begun SBJV REFL bring.3 objections
'People started to raise objections.'

b. Aici se {va / *vor} continua a se tipări cărţi.
here REFL will.3SG / will.3PL continue to REFL print.INF books
'People will continue to print books here.'

Agreement with the embedded theme is possible if the matrix verb is active (lacks *se*), in which case it may be analyzed as a raising verb (see Alboiu 2007; Cotfas 2012):

(25) a. (*S-) a**u** început să se discute aceste chestiun**i**
(*REFL)- have.3**PL** begun SBJV REFL discuss the**se** issue**s**
la televizor.
on TV

b. (*S-) a**u** început să fie discutate aceste chestiun**i** la televizor.
(REFL-) have.3**PL** begun SBJV be discussed the**se** issue**s** on TV
'These issues began to be discussed on TV.'

Here are attested examples where the matrix verb is singular and the embedded Theme is plural:

(26) În 1994 s -**a** început să se efectueze lucrăr**i** de stabilizare
in 1994 REFL -**has** begun SBJV REFL carry-out.3 work**s** of stabilization
şi restaurare a întregului monument.
and restoration GEN whole-the.GEN monument
'In 1994 works of consolidation and restoration of the whole monument were initiated.' <https://ro.wikipedia.org/wiki/M%C4%83n%C4%83stirea_Zamca> (24 January 2021)

(27) (…) dacă se **va** continua a se tipări cărţ**i**
if REFL will.3SG continue to REFL print books
'if one will continue to print books' (*Cultura creştină*, 1915, nr. 2, p. 47)

8. See Dobrovie-Sorin (1994); Cornilescu (1997), a.o.

No examples were found, on Google, of double *se*-passive constructions with plural *a începe* 'to begin' + subjunctive – the type ***s-au început să se…*** 'REFL-have.3PL begun SBJV REFL…'. As for contexts with singular marking on *începe* (searching for *s-a început* 'refl-has begun'), both with subjunctives and infinitives, out of 67 examples with overt embedded themes (25 with the subjunctive and 42 with the infinitive), 14 have a plural theme (7 with the subjunctive and 7 with the infinitive).

A long passive restructuring construction is found in Romanian with *termina* 'finish', but of a different sort: it involves a supine, which is a more reduced structure, disallowing clitics, negation or voice marking:

(28) Voturile **s-au** terminat de numărat.
votes-the REFL-have(**3PL**) finished of count.SUP
'The counting of the votes is over.'

The absence of number agreement of the matrix verb with the embedded theme in the double *se*-pattern indicates that the embedded theme is licensed in the embedded clause – presumably by the embedded T (lack of differential object marking and accusative clitics clearly indicate that the embedded theme is nominative; as for agreement, the subjunctive does not distinguish singular from plural and +Participant subjects are independently excluded in *se*-passives, see Section 4.1, therefore agreement with the embedded theme cannot be tested).

We conclude that the double-*se* pattern cannot be explained as Voice agreement under restructuring.

Another possibility (Carmen Dobrovie-Sorin, personal communication) is that the double *se*-pattern involves a subject clause, in which there is no control. Indeed, all the relevant verbs have an alternative selectional pattern where they take a nominal object, and this pattern allows passivization, as in (29a). As there presumably is no controlled PRO in this case, the suggestion is that the same absence of control is found in (29b):

(29) a. {S-a început / A fost începută} restaurarea
REFL-has started has been begun.FSG restoration(F)-the
pieţii.
square-the.GEN
'The restoration of the square (has) started.'

b. S-a început [să se restaureze / a se restaura piaţa].
REFL-has started SBJV REFL restore.3 / to REFL restore square-the
'They started to restore the square.'

There are two problems with this account. First, it does not explain why the embedded verb must be a *se*-passive, rather than a participial passive. Thus, examples of the type in (30) are clearly degraded:

(30) ??S-a început [să fie restaurată piața / a fi
REFL-has begun SBJV be.SBJV.3 restored square-the / to be
restaurată piața].
restored square-the

This judgment is supported by corpus research. In the Corola corpus <see https://corola.racai.ro/>, the search for the string REFL.ACC + *începe* 'begin' + *să* only yielded examples with *se* on the subjunctive. For the search REFL.ACC + *începe* + *a* (i.e., 'SE-begin' + *a*-infinitive), we found 12 examples with *se* on the infinitive and only one with an embedded copular passive, given in (31):[9]

(31) **S**-a început [a **fi** împărțită pe hălci].
REFL-has begun to be divided.FSG in pieces
'(The factory) started to be divided in pieces.' <http://confluente.ro/Dring_mihail_lupu_izbanzi_aurel_v_zgheran_1 372168719.html> (25 June 2013)

On Google, for *începe* + subjunctive, we found 82 examples with embedded *se* (44 with transitive verbs and 32 with intransitives), and only 1 example of an embedded copular passive. For *începe* + infinitive, 76 examples of embedded *se* were found (50 with transitive verbs and 26 with intransitives), and only 6 with copular embedded passives.

Such a contrast between participial passives and *se*-passives does not occur in run-of-the-mill subject clauses, see (32). It does not occur in the object position of raising aspectual verbs either, see (33).

(32) a. {Să fie restaurată piața / Să se restaureze piața} e
SBJV be.3 restored square-the SBJV REFL restore.3 square-the is
o bună idee.
a good idea

b. {A fi restaurată piața / A se restaura piața} e o
to be restored square-the to REFL restore square-the is a
bună idee.
good idea
'To restore the square is a good idea.'

(33) A început {să se restaureze / să fie restaurată} piața.
has begun SBJV REFL restore.3 SBJV be.3 restored square-the
'The square has begun to be restored.'

9. We also found 5 examples with an active infinitive, on the pattern in (12), ungrammatical for us as well as for Dobrovie-Sorin (1998). Such examples reflect a different grammar, unproblematic for Pitteroff & Schäfer's analysis.

Thus, neither the subject position nor the matrix verb per se can be the source of the preference for *se*-passives. It is the use of the passive *se* on the matrix that forces the choice of a *se*-passive in the embedded clause. This may be explained if there is a control relation between the two clauses, as we will see in the next section, but remains totally mysterious if no such relation is involved.

Secondly, there is evidence that the subordinate clause in (29b) does not behave on a par with the nominal subject in (29a). Thus, as shown in Section 2, whereas nominal subjects are equally fine with participial passives, clauses are degraded:

(34) a. *A se restaura piața a fost început. / *A fost început a
to REFL restore square-the has been begun has been begun to
se restaura piața.
REFL restore square-the

b. Restaurarea pieții a fost începută.
restoration-the market-the.GEN has been begun
'The restoration of the square began / has begun.'

This indicates that, even in the passive version, the clause selected by aspectual verbs keeps the properties it has in the active version. More concretely, as explained in Section 2, complement clauses lack the D-feature required for functioning as subjects of participial passives, which involve a copular construction. This is what distinguishes them from clauses base-generated as subjects (which are allowed in copular constructions, see (32)).[10] Granting that obligatory control is a property of complement clauses of aspectual verbs in the active version, we expect this property to be preserved when the aspectual verb is passivized.

Summing up, the double-*se* pattern does not have the same syntactic properties as the nominal theme pattern. Therefore, the absence of control in the nominal theme pattern cannot be taken as an argument for the possibility of absence of control in the clausal theme pattern.

4. Our analysis

Having ruled out voice restructuring and a subject clause analysis without control, we have to conclude that our construction involves control. We follow MacDonald & Maddox (2018) and Giurgea (2019) who argue that, in Romanian, *se*-passives project an (arbitrary) null external argument in SpecVoice/vP. Under this analysis,

10. For the distinction between base-generated subject clauses and complement clauses, stated in terms of the presence of a D-feature, see Cornilescu (2019).

the double-*se* pattern involves a control relation between the two external argument positions of '*se*-passives':

(35) [$PRO_{+3\ Arb}$ [*se* [*începe* [$_{FinP}$ să/a T …[$PRO_{+3\ Arb.}$ [*se* ..DP]]]

[$PRO_{+3\ Arb}$ [*se* [*începe* [$_{FinP}$ să/a T …[$PRO+_{3\ Arb.}$ [*se* ..DP]]]

Control

This analysis must address two important problems: (i) how do '*se*-passives' differ from active impersonals, and, in particular, how can they license agent-PPs? (see Section 2, Examples (8)–(9)); (ii) why is *se* obligatory on the embedded verb? We address theses issues in the next two sub-sections.

4.1 On the structure of 'se-passives': Halfway between actives and passives

A first reason for calling these constructions passive is that the finite verb shows agreement with the theme (see (36)); the theme is never marked as a direct object.

(36) S-au adus obiecţii.
REFL-have.3PL brought objections
'Objections have been raised.'

Moreover, as shown by Dobrovie-Sorin (1998), *se* cannot be considered a subject impersonal pronoun, because, contrary to Italian or Spanish, it cannot occur in raising environments, see e.g. copular constructions or *seem*:

(37) a. *Nu se este niciodată mulţumit / mulţumiţi.
not REFL is never satisfied.MSG/MPL
(Romanian; Dobrovie-Sorin 1998: 405)

b. Non si è mai contenti.
not REFL is never satisfied.MPL
'One is never satisfied.' (Italian; ibid.)

c. *În această oglindă se pare tânăr.
in this mirror REFL seems young
Intended: 'One seems young in this mirror.'
(Romanian; Giurgea 2019: 115)

This shows that the implicit external argument in *se*-impersonals must be thematically related with the verb, which indicates that *se*-impersonals rely on a particular Voice, which suspends structural accusative. Depending on the theory of case one adopts, there are various ways of characterizing the case status of the null agent: it may show a 'null case' (Chomsky & Lasnik 1993) or be disregarded by the procedure

of dependent case marking (if one adopts Marantz's 1991 mechanism of assigning morphological case), or else bear an inherent case assigned by Voice.

Most importantly, the presence of this null argument is reflected in the restrictions on the theme, as shown in Giurgea (2019). Thus, the themes of *se*-passives cannot be personal pronouns, proper names as well as certain types of animate definite DPs:

(38) S -a adus {prizonierul / *el / *Ion / *maică-sa} la judecată.
REFL -has brought prisoner-the / he / Ion / mother-his to trial
'The prisoner / *he / *John / *his mother has been brought to court.'

As noticed by Cornilescu (1998), these are precisely the types of DPs that require differential object marking when used as objects; moreover, they allow or require clitic doubling when DOM-ed (Giurgea 2019):

(39) a. {Au adus prizonierul / *el / *Ion / *maică-sa} la judecată.
have.3PL brought prisoner-the / he / Ion / mother-his to trial
b. L -au adus pe el / pe Ion / Au adus
3MS.ACC -have.3PL brought DOM he / DOM Ion / have.3PL brought
-o pe maică-sa la judecată.
-3FS.ACC DOM mother-his to trial
'They brought the prisoner/he/John/his mother to court.'

Giurgea (2019) explains this constraint drawing on the intervention-based account for other types of person-case constraints (see Rezac 2011): the DPs that take DOM and allow or require clitic doubling have a Person feature; the external argument (EA) of *se*-passives, projected in SpecVoice, also has a Person feature, which blocks person agreement, allowing only number agreement. As DPs must be case-licensed by T via Agree in all their φ-features, +Person themes cannot be licensed, whereas themes that lack a person feature are allowed (via number agreement).

The presence of a person feature on the EA of *se*-passives is further supported by its obligatory +human interpretation, by which it differs from the EA of participial passives:

(40) a. Spectacolul {a fost urmat / *s-a urmat} de ovații.
show-the has been followed REFL-has followed by ovations
'The show was followed by ovations.'
b. Aceste modificări {sunt cauzate / *se cauzează} de schimbările
these modifications are caused REFL cause.3 by changes-the
de temperatură.
of temperature
'These transformations are caused by temperature changes.'

Another argument for a projected agent in *se*-passives, proposed by MacDonald and Maddox (2018) and Giurgea (2019), comes from examples with definite inalienable possessees (typically body-parts). In this construction, a definite object is interpreted as possessed by the subject:

(41) Maria a ridicat mâna.
Maria has raised hand-the
'Maria raised her hand.'

MacDonald and Maddox (2018) show that the relation between the object and the possessor argument involves syntactic binding: the possessor must be syntactically projected and the relation must be local. As shown in (42), the EA of *se*-passives can be the possessor of definite inalienable possesses, unlike the EA of copular passives:

(42) Aici, pentru a pune o întrebare {se ridică/ # este ridicată} mâna.
here for to put a question SE raises is raised hand-the
'Here, in order to ask a question, one raises one's hand.'

In (42), the purpose clause indicates that we are dealing with passive *se* rather than anticausative *se*. If both *se*-passives and copular passives had a non-projected EA, the contrast in (42) would remain mysterious.

But how is a projected null EA compatible with the presence of *by*-phrases (see Examples (8)–(9) in Section 2 above)? We assume that *by*-phrases are adjuncts specialiezd for a vP with an unsaturated argument slot (as proposed by Bruening 2013, who formalizes this specialization by devising a system in which adjuncts select their host, and the constituent thus formed retains the label of the host; Bruening uses the label 'VoiceP' for vP and assumes that, in passives, a PassP dominates VoiceP). In order to make this analysis compatible with the projection of a null EA, Giurgea (2019) assigns *by*-phrases an interpretation where they characterize the unsaturated argument without saturating it – in (43), the result of combining *by* with a DP, which introduces the argument *x*, applies to a function from entities into properties of events (type <e,vt>), which corresponds to a vP, and returns the same type of function (λy λe):[11]

(43) $[\![\text{by}]\!] = \lambda x\, \lambda f_{<e, vt>}\, \lambda y\, \lambda e.\, (x = y \wedge f(x, e))$

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11. Legate (2014: 41) proposes a similar semantics for *by*-phrases, the difference being that it makes reference to the Initiator role:

(i) $[\![\text{by}]\!] = \lambda y.\lambda f_{<e, st>}.\lambda x.\lambda e.f(x, e) \wedge \text{Initiator}(e, y) \wedge x=y.$

Given that the EA may have various theta-roles, Giurgea (2019) follows Bruening (2013) in representing the restriction of *by*-phrases to EAs in syntactic terms (as a selectional property of the *by*-phrase) rather than in semantics, hence the representation in (44), which does not make reference to an 'Initiator' role.

The Voice head introduced above (corresponding to Bruening's Pass) selects a null EA specifier or, in the case of participial passives, existentially binds the unsaturated argument.

One might also consider the possibility that *se*-passives allow two patterns, one with a null EA and one with a *by*-phrase and the +Person feature carried by Voice itself (this would still ensure the required intervention effect for the case-licensing of themes, which obtains irrespectively of the presence of a *by*-phrase). However, *by*-phrases do not seem to be disallowed in the double-*se* pattern (they prefer to appear after the two verbs), even though they are quite rare:

(44) S-a început să se aducă îmbunătăţiri de către specialişti.
REFL-has begun SBJV REFL bring.3 improvements by specialists
'Specialists began to make improvements.'

To sum up, we have argued that *se*-passives involve a Voice that selects a null EA in its Spec but fails to assign accusative. The null EA has a Person feature which blocks licensing of +Person themes. Themes are licensed in situ and agree in number with T. This construction is syntactically very similar to what Legate (2014) calls the 'grammatical object passive', a type of impersonal passive, found in Icelandic, Ukrainian, Irish and Welsh, in which the theme remains in object position, marked accusative, and *by*-phrases are allowed. Legate proposes that in the grammatical object passive a null EA is projected as a φP in SpecVoiceP, and, correlatively, Voice assigns accusative. The difference is that in Romanian *se*-passives Voice lacks the accusative assignment property. The theme appears in a default case form (due to the Person constraint, only themes that do not mark the nominative vs. accusative opposition are allowed). In spite of agreement with T, there is evidence, discussed in Cornilescu (1998), that the theme does not function as a grammatical subject, remaining in the object position. The control facts discussed in this article constitute another argument against a subject status of the theme.

4.2 Control in se-passives

The second problem we have to address is the obligatory presence of *se* on the embedded verb. If there is control, why can't the controlled argument be the PRO subject of an active verb? Why doesn't Romanian allow the German-type construction, where only the matrix verb is an impersonal passive (see (45a) vs. (45b))?

(45) a. Es wurde angefangen, das Kinderzimmer aufzuräumen.
it was begun the playroom to.tidy.up
'People / someone began cleaning up the playroom.'
(German; Pitteroff & Schäfer 2019: 150)

b. S-a început {a *(se) curăța / să *(se) cureţe} camera
REFL-has begun to (REFL) clean SBJV REFL clean.3 room-the
copiilor.
children.the.GEN
'People / someone began cleaning up the children's room.' (Romanian)

We propose that this difference relies on the fact that Romanian has agreement in predicative control, as is visible in the case of subjunctive complements (recall that subjunctives differ from infinitives by showing φ-features agreement with the subject, see e.g. *Știu să înot* 'know.1SG SBJV swim.1SG'). Landau (2015) proposes that agreement in predicative control relies on matching by predication between the features of the PRO in SpecFinP and those of the controller. He assumes that the features of PRO are already valued (because the complement of Fin^0 is a spell-out domain) and the predication relation imposes matching between the features of PRO and those of the subject of the predicate (i.e., the controller). In our case, the controller has the features {+3 +Arb}, therefore the controlled PRO must already have the same features by the time the FinP is built. We assume that *se* appears on the embedded verb because PRO can have the {+3 +Arb} features only when selected by a special Voice head, which is morphologically manifested by *se*. In other words, T (where Landau assumes that the features of PRO are born) cannot be inserted from the lexicon with a {+3 +Arb} Person feature.[12] Our analysis is schematized in (46), where the matching features are boldfaced:

(46) Se începe $[_{VoiceP}$ $PRO_{\mathbf{+3+Arb}}$ $[t_{\text{începe}}$ $[_{FinP}$ $PRO_{\mathbf{+3+Arb}}$ să se
REFL begins SBJV REFL
scrie $[_{VoiceP}$ t_{PRO} $[t_{\text{se+începe}}]]]]]$
write.3.SBJV

The fact that *se* must also be replicated in the case of infinitives (see the infinitive version of (45b)) indicates that the matching requirement carries over to infinitival FinPs (although in this case its only manifestation is the presence/absence of *se*). This peculiarity arguably has a historical explanation: as subjunctives became more and more frequent in control environments, their syntax influenced the syntax of infinitives. Note also that complement infinitives resemble finite clauses in allowing, to a certain extent, overt subjects (especially with non-agentive predicates, see Example (15) and footnote 5). The nominative-licensing potential of complement

12. Our analysis is compatible with a view in which null pronouns are not born with features, but receive those features via agreement from verbal heads (this is the view endorsed for *pro* by Landau 2015): under this view, the feature complex {+3 +Arb} is not found on the T of (complement) subjunctives and infinitives, but only on the Voice head that underlies *se*-passives.

infinitives that appears in the double-*se* pattern in examples such as (45b) is not limited to control configurations, as shown by Example (47):

(47) Sper [a nu **se** înțelege greșit **situația**].
hope.1SG to not REFL understand wrongly situation-the
'I hope the situation will not be misunderstood.' <http://forum.seopedia.ro/bar-lobby/12074-recuperare-domeniu-ro.html> (24 January 2021)

A consequence of our approach is that the non-controlled arbitrary subject of active infinitives (e.g. *A cânta e o bucurie* 'to sing is a joy') does not bear the formal features {+3 Arb} – otherwise, in our account, *se* would have been required. We assume that non-controlled PRO merely bears a D-feature and the arbitrary interpretation is the result of the absence of specified φ-features.

Interestingly, there is another environment where Romanian requires impersonal *se* with an infinitive, whereas Italian and French don't: matrix infinitives with an imperative use, stating regulations, exemplified in (48)–(49).

(48) A nu *(se) lăsa fereastra deschisă! (Romanian)
to not REFL leave.INF window-the open
'Don't leave the window open! / The window should not be left open!'

(49) Non lasciare la finestra aperta! (Italian)
Ne pas laisser la fenêtre ouverte! (French)
not leave.INF the window open

Our account can explain this puzzling contrast if imperative infinitives involve a covert controller, endowed with the features {+3rd +Arb}. Zanuttini et al. (2019) proposed that imperatives, in general, involve a Jussive head at the speech-act level, whose specifier hosts the addressee, with which the subject of imperatives agrees:

(50) $[_{\text{JussiveP}}$ Addressee$_i$ [Jussive^0_i $[_{\text{TP}}$ T $[_{\text{vP}}$ DP$_i$ v VP]]]]

In the case of infinitival imperatives, the command applies to anyone who happens to be in the relevant circumstances. We can assume that PRO$_{+3+\text{Arb}}$ occurs in SpecJussiveP. As a consequence, the subject of the infinitive must also bear {+3+Arb}, which explains the necessary use of *se* in Romanian, under our account of control in impersonal passives (we need to assume that the infinitive projects the same FinP as in the case of complement clauses):

(51) $[_{\text{JussiveP}}$ PRO$_{\textbf{+3+Arb}}$ [Jussive^0 $[_{\text{FinP}}$ PRO$_{\textbf{+3+Arb}}$ [T $[_{\text{VoiceP}}$ t$_{\text{PRO}}$ ....]]]]]

As for the exact status of the *se* that occurs in *se*-passives, we do not take a stance here. This element has the syntax of clitic pronouns (ending up in the clitic cluster around T), but it has uses where it is clearly a voice marker (see anticausatives: *se sparge* 'REFL breaks' = 'It's breaking'). Some authors analyzed Romance *se* as a v^0 or $Voice^0$ head (see Folli 2002; Labelle 2008). Giurgea (2017), building on Schäfer (2008); Alexiadou et al. (2015), proposed, instead, that *se* is an accusative pronoun not only in two-place reflexives, but also in one-place reflexives and anticausatives, where it functions as an AgrO-expletive, absorbing v's accusative feature. This analysis cannot extend to *se*-passives because *se*-passives can be built with intransitives (including unaccusatives, e.g. *se moare* 'REFL dies' = 'People die'). A possibility that has been suggested to us by the audience of the Workshop on Control at the 41st Annual Conference of the German Linguistic Society (DGfS) is that *se* is the spell-out of the arbitrary 3rd person pronoun. But it is unexpected for an overt pronoun to be restricted to a certain Voice head (recall Examples (37)).

4.3 Comparing our account with an alternative analysis of control in Romanian

Some studies proposed that Romanian control constructions rely on backward control (Alboiu 2007; Alexiadou et al. 2010). They propose that a single DP, generated in the subordinate clause, receives two theta-roles (from the embedded and the matrix verbs); the assumption is that the matrix v satisfies its theta-feature via Agree with the embedded subject, which remains active because its Case has not yet been licensed (Alboiu assumes that control subjunctives are not phasal domains, the shared subject being case-licensed by the matrix C-T complex). For our construction, this analysis would predict that *se* should only be found on the embedded verb, in whose domain the purported shared subject is generated.

Beyond the issue of double *se* constructions, there are further arguments against the backward control analysis for Romanian. First, this analysis predicts that the word order in which the subject occurs in between material of the embedded clause (see (52)) should be unmarked, because nominative is licensed via long-distance Agree and any further movement is motivated by information-structural reasons.

(52) Încearcă [să cânte **Victor / cineva** la trombon].
tries SBJV sing.3 Victor / somebody at trombone
'Victor / Someone is trying to play the trombone.'

However, such orders are felt as marked. The acceptability of (52) in a thetic context, as an answer to the question 'What's all this noise?' (this is the context used by Alboiu), may be due to the fact that 'try to sing' forms a conceptual unit, used to describe a certain sound (the noise that was under discussion). In other situations, such as those in (53), thetic contexts do not allow this position of the subject:

(53) [Context: What happened?]
a. (Ion) a reuşit (Ion) să supere (*Ion) pe toată lumea.
Ion has succeeded Ion SBJV upset.3 Ion DOM everybody
'Ion managed to make everybody upset.'
b. (Ion) a uitat (Ion) să încuie (??Ion) uşa.
Ion has forgotten Ion SBJV lock.3 Ion door-the
'Ion forgot to lock the door.'

Dragomirescu (2011) tested the word orders in (54) (where we marked the possible positions of the subject with numbers) in various pragmatic contexts:

(54) $(Victor)_1$ s-a apucat $(Victor)_2$ să cânte $(Victor)_3$ la
V. REFL-has started V. SBJV play.3 V. at
trombon $(Victor)_4$.
trombone V.
'Victor began to play the trombone.'

For the context 'What's all this noise?', out of her 15 informants, six used the position 2, five used the position 1, two accepted the positions 1,2 and 3, one accepted the positions 2 and 3, and one accepted all four positions. Similar results were obtained for the question 'What happened?' (four speakers: position 2; four speakers: position 1; 3 speakers: positions 1 and 2; 1 speaker: positions 1, 2, 3; 1 speaker: all four positions).

It seems that orders of the type in (52) are more acceptable in contexts involving unexpectedness (Elena Soare, personal communication), focus on the subject or on the main verb. All these facts indicate that these orders do not show the base position of the subject, but rather rely on complex derivations, which move part of the subordinate material into the matrix, above the matrix subject. Such derivations have been proposed for similar orders with complement infinitives in Spanish by Ordoñez (2009) and Herbeck (2014). Their empirical arguments carry over to Romanian. Thus, placement in between embedded material is also found with matrix objects (which control an embedded subject, see (55a)), and even with matrix subjects in object control constructions (see (55b)):

(55) a. i-a pus să semneze **pe domnii ziarişti** câte
MPL.ACC-has put SBJV sign.3 DOM misters-the journalists DIST
un angajament
a commitment
'He asked the journalists to sign an engagement each.'
<https://www.garbo.ro/comunitate/forum/view_topic/4803/Chestiunea-zilei/Chestiunea-zilei-pagina-488.html> (24 January 2021)

b. Ce te-a pus să faci **şeful** în birou afară
what you.ACC-has put SBJV do.2SG boss-the in office besides
să lucrezi?
SBJV work.2SG
'What did the boss ask you to do in the office, besides working?'
<https://nimfomane.com/forum/topic/8892-cum-te-simti-azi/page/2354/?tab=comments> (24 January 2021)

Moreover, subjects placed in between embedded material show only matrix scope in examples such as (56):

(56) Încearcă să cânte doar Victor la trombon.
tries SBJV play.3 only Victor at trombone
= 'Victor is the only one who tries to play the trombone.'
Impossible reading: 'Victor tries to be the only one who plays the trombone.'

Finally, evidence for the existence of controlled PRO in Romanian comes from the phenomenon of partial control, which can be detected in the case of complement infinitives (see also Jordan 2009: 169). Agentive verbs such as *se întâlni* 'meet' do not allow overt subjects, therefore (57) must involve control (see (57b), which is impossible under the reciprocal reading of *întâlni*, where *vă* is a reflexive clitic which shows the features of the subject). Yet, examples such as (57a), where the first person marking on the reflexive clitic shows that the subject of the infinitive refers to a group that includes the matrix subject, are fully acceptable:

(57) a. Propun a ne întâlni mâine.
propose.1SG to us.ACC meet.INF tomorrow
'I propose to meet tomorrow.'
b. *Propun a vă întâlni mâine.
propose.1SG to you.PL.ACC meet.INF tomorrow
Intended meaning: 'I propose that you should meet tomorrow.'

To sum up, upon closer scrutiny, the existence of backward control in Romanian is highly problematic.

4.4 Summary

Summing up, we proposed an account that explains why the clausal complement of a *se*-passive, with obligatory control verbs, must also contain a *se*-passive: (i) we are in the presence of a control configuration, which requires a projected external argument to be controlled, which is not satisfied in the case of participial passives; this excludes participial passives in the embedded clause; (ii) the controlled argument

must match in features with the controller; in this case, the controlled argument must be PRO_{+3+Arb} and this item only occurs in the Spec of the special Voice head that characterizes *se*-passives. This excludes active verbs in the embedded clause.

5. Conclusions

Starting from the generalizations concerning implicit control in passives discussed in Pitteroff & Schäfer (2019), we have investigated the facts of Romanian. Due to the fact that participial passives do not normally allow clausal complements, the issue only appears in the case of *se*-passives. Due to the diachronic weakening of infinitives in complement position, the relevant contexts involve both infinitival and subjunctive complements. The data show that in control configurations, *se*-passives cannot take active control infinitives or subjunctives, but become grammatical once *se* is replicated on the embedded infinitive or subjunctive.

We have argued that this 'double-*se*' construction is not an instance of voice agreement (a sub-type of voice restructuring), because the matrix verb does not agree with the embedded theme. This shows that the embedded clause has a T-layer capable to license the theme.

We have analyzed the double-*se* pattern as an instance of control of a projected external argument (PRO) by the null external argument of the matrix verb (also PRO). Both PRO arguments are assumed to be generated in the specifier of a special Voice head and to bear the features {+3Person +Arb}. *Se* must appear on the embedded verb because (i) Romanian has a feature matching requirement in predicative control, whereby two independently generated feature sets, on the controller and on the controlled PRO, must match (cf. Landau 2015), and (ii) the features {+3Person +Arb} only occur in the Spec of a special Voice headed by passive *se*. We correlated this matching mechanism underlying control with the weakening of complement infinitives in Romanian and the consequent productivity of the subjunctive in obligatory control environments.

This provides an additional argument for the projection of the external argument in *se*-passives, which are half-way between bona fide passives and actives: on the one hand, their Theme is nominative and agrees with T, whereas *se* is not a nominative pronoun, but rather indicates a special Voice head; on the other hand, there is a projected external argument which is involved in control and blocks nominative assignment for [+Person] Themes.

This leads to the conclusion that Romanian does not display genuine implicit control in passives, because (i) *se*-passives do not involve control by a *non*-projected argument and (ii) copular passives disallow clausal complements for independent reasons.

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On the obligatory versus no control split in Korean

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In Korean, Obligatory Control may, under certain conditions, fail to obtain. We present non-canonical cases of logophoric object control where (1) movement of the control clause, and (2) an overt infinitival subject give rise to configurations unexpectedly lacking the Obligatory Control signature; complements to logophoric object control verbs thus exhibit an alternation between Obligatory Control and No Control. In the No Control case, however, the embedded subject remains subject to the restriction that it cannot refer to the matrix AUTHOR. We model the Obligatory versus No Control split derivationally, and show that control complementizers encode information sensitive to attitudinal function.

1. Introduction

Control is an interpretive dependency between an argument of a matrix clause and the subject of an embedded clause, where – canonically – the reference of an overt controller determines the reference of a null controllee. While canonical cases of Obligatory Control (**OC**) have so far been well-studied, the nature and analysis of No Control (**NC**) are still subject to substantive discussion.

The cases we will be concerned with involve logophoric OC, as laid out in Landau (2015). Logophoric OC arises in complements to attitude verbs, where the complement is interpreted relative to the mental states of a participant. It is further characterized by an obligatory *de se* attitude holding between the controller and the controllee, modelled in Landau (2015) as a logophoric center in the periphery of the control clause, rather than as an inherent property of PRO.

In Korean, logophoric OC involves a matrix control verb and an infinitival complement clause headed by one of various complementizers.[1] (1a) and (1b) are examples of logophoric subject and object control, respectively:

1. Uncited Korean data were elicited with consultants via online elicitations. Many thanks for their patience and helpfulness. Like our consultants, this paper's first author is also a native speaker of Korean.

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(1) a. *Subject control*
Jane$_i$-i Mary$_j$-eykey [e$_{i/*j/*k}$ party-lul ttena-kilo] yaksokhayssta
Jane-NOM Mary-DAT party-ACC leave-COMP promised
'Jane promised Mary to leave the party.' OC

b. *Object control*
Jane$_i$-i Mary$_j$-lul [e$_{*i/j/*k}$ party-lul ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC party-ACC leave-COMP persuaded
'Jane persuaded Mary to leave the party.' OC

Focusing on non-canonical cases of logophoric object control, we investigate the presence of OC versus NC as a function of (1) the position of the control clause, and (2) the overtness of the embedded subject.[2] While previous work (Polinsky & Kwon 2006; Polinsky et al. 2007; Kwon et al. 2010) has reported on contrasts between OC and NC in connection with these two parameters, our novel contribution lies in showing that these contrasts are derivational, i.e. that either movement of the control clause, or an overt infinitival subject, or both give rise to a configuration in which OC cannot obtain, such that NC obtains instead; effectively, OC may thus be bled derivationally. So while the absence of OC has been reported in connection with surface constituent order, that its absence may result from the movement of the control clause is, to our knowledge, hitherto unreported.

Moreover, we show that what is special about control complementizers in Korean is their orientation towards attitudinal function, imposed on the reference of the embedded subject. Regardless of whether OC or NC obtains, the object-control complementizer bars the embedded subject position from referring to the attitude holder. By contrast, subject-control complementizers force this position to refer to the attitude holder.

This paper is structured as follows: Section 2.1 provides an overview of control complementizers in Korean; Section 2.2 explores the distribution of OC and NC as affected by the position of the control clause; in Section 2.3, we show that control complementizers are oriented towards attitudinal function; in Section 2.4, we show that overt subjects in the control clause lead to NC; in Section 3, we provide an analysis of the data; in Section 4, we discuss open issues including subject control, optional control shift due to modality and some predictions; Section 5 concludes the paper.

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2. In the literature, the term NOC 'Non-Obligatory Control' is used to describe null logophoric subjects. Since we will be concerned with positions allowing (null or overt) subjects with free reference – next to canonical null OC subjects – the relevant distinction for us is between OC 'Obligatory Control' and NC 'No Control'. We thank two reviewers for pointing out the correct use of these terms.

2. Data

In Korean, control verbs can select both infinitival and finite complements. The former are headed by one of various control complementizers: *-kilo, -lyeko, -koca, -tolok* (Kim 1994; Cormack & Smith 2004; Choe 2006; Madigan 2008; Park 2011). Yang (1982) is the first to report that OC may obtain in finite contexts (see Gamerschlag (2007); Lee (2009); Park (2011); Sisovics (2018) for other studies). Overt lexical items can be locally controlled (Yang 1985; Madigan 2008), and backward control has been reported to be possible (Monahan (2005); a.o.).[3] Based on Park (2011)'s diagnostics for the finiteness of complements, we take those complements headed by *-kilo, -lyeko, -koca, -tolok* to be infinitival control complements.[4]

In this section, we present Korean infinitival control, and how OC may be lost depending on the position of the control clause. We also show how each complementizer imposes an orientation toward *attitudinal function,* even when OC is lost and the embedded subject can otherwise freely refer.

2.1 Control complementizers

In Korean, different classes of control verbs select for complement clauses headed by distinct complementizers: subject-control verbs select either *-kilo, -lyeko* or *-koca,* sometimes allowing more than one option;[5] object-control verbs invariably

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3. We leave the connection of backward control to our work to future research.

4. Park (2011: 3) provides diagnostics to distinguish the finiteness of complement clauses, as follows:

(i) Infinitival clauses are distinguishable from finite clauses, if
  a. they do not allow for tense or aspectual markers;
  b. they do not permit the presence of clause-typing markers;
  c. they cannot be uttered without being embedded.

According to these diagnostics, -tolok-clauses are infinitival, as they do not meet the requirements in (ib) and (ic), unlike finite control complements in (ii);

(ii) Jane$_i$-i Mary$_j$-eykey [e$_{*i/j/*k}$ party-lul ttena-la-ko] seltukhayssta
Jane-NOM Mary-DAT party-ACC leave-IMP-COMP persuaded
'Jane persuaded Mary that she should leave the party.'

5. Subject-control complementizers share similar lexical meanings: *-kilo* means 'to the result that' / 'leading to', and *-lyeko* and *-koca* mean 'with the intention of' / 'in order to'. Nonetheless, we return to a notable difference between these complementizers in Section 5. Thanks to a reviewer for raising this issue.

require the complementizer *-tolok*.[6] A non-exhaustive list of Korean control verbs and the complementizers they select for is given in Table 1:

Table 1. Control verbs and their complementizers

Subject control	***-kilo***	***-lyeko***	***-koca***	***-tolok***
kyelsimha 'decide, determine'	✓	✓	✓	
keylcengha 'decide'	✓	✓		
kyeyhoykha 'plan'	✓	✓	✓	
yaksokha 'promise'	✓			
ayssu 'endeavor'		✓		
cakcengha 'intend'		✓		
nolyekha 'try'		✓	✓	
huymangha 'hope'			✓	
pala 'want'			✓	
Object control	***-kilo***	***-lyeko***	***-koca***	***-tolok***
ceyanha 'propose'				✓
cwungkoha 'advise, counsel'				✓
kwenkoha 'advise, urge, recommend'				✓
myenglyengha 'order'				✓
pwuthakha 'ask'				✓
seltukha 'persuade'				✓
yochengha 'request'				✓
yokwuha 'demand, request'				✓

2.2 Base and inverse order

Throughout, we will refer to the infinitival clause whose subject position is canonically null and obligatorily controlled by a matrix argument as the *control clause* or *complement (clause),* although we will also consider cases where this position is neither null nor controlled. Similarly, we will use *control configuration* to include all configurations which should give rise to control given their structural properties, even though we will show this to not always be the case. As for constituent order, we will refer to the canonical order of control constructions, in which the control clause follows the matrix object, as the *base order,* and the non-canonical order, in which it precedes the matrix object, as the *inverse order.*

6. *Tolok* is translated as 'so that' or 'to the extent that'. Several works have made the claim that *tolok* can function as either a complementizer or a subordinator of adjunct clauses to convey the degree of a resulting state, purpose and a temporal endpoint (Park 2011: 153–155). *Tolok* is also found in periphrastic causative constructions.

In the base order in (2), the embedded subject position has all the expected logophoric OC properties: it must be bound by the closest c-commanding nominal, i.e. the matrix object *Mary,* must be interpreted *de se,* and forces a sloppy reading under VP-ellipsis.[7] In the inverse order (3), the embedded subject lacks these OC properties, hence NC obtains instead.[8] Despite the general disruption of OC in the inverse order, however, the embedded subject position remains subject to the restriction that it cannot refer to the matrix subject *Jane* in (3):

(2) *Base order*
Jane-i$_i$ Mary-lul$_j$ [e$_{*i/j/*k}$ hakkyo-lul ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC school-ACC leave-COMP persuaded
'Jane persuaded Mary to leave school.' OC

(3) *Inverse order*
Jane-i$_i$ [e$_{*i/j/k}$ hakkyo-lul ttena-tolok] Mary-lul$_j$ seltukhayssta
Jane-NOM school-ACC leave-COMP Mary-ACC persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave school.' NC

As mentioned, the contrast between OC and NC with respect to the surface position of the controller and the control clause has been reported for object control in the literature (Polinsky & Kwon 2006; Polinsky et al. 2007; Kwon et al. 2010). By contrast, this effect is absent in inverse subject control configurations, as shown in (4), where OC is retained:

(4) *Subject control in the inverse order*
Jane-i$_i$$^{\text{AUTH}}$ [e$_{i/*j/*k}$ party-lul ttena-kilo] Mary-eykey$_j$ yaksokhayssta
Jane-NOM party-ACC leave-COMP Mary-DAT promised
'Jane promised Mary to leave the party.' OC

We return to subject control in Section 4.1, and now present a novel observation regarding the role of control complementizers in restricting the reference of the embedded subject.[9]

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7. We consulted 9 speakers to diagnose the obligatory *de se* reading. We constructed a scenario by slightly modifying the amnesia scenario from Hornstein (1999: 35–36), originally mentioned in Castañeda (1966).

8. A reviewer points out that the control verb 'persuade' may determine the implicativeness of the controlled event. Polinsky et al. (2007: 8) show a contrast of (non-)implicativeness between in the base and inverse order. However, as noted in their footnote 2, this contrast is very subtle. When the verb selects an infinitival complement, the controlled event is interpreted as non-implicative; the controlled event in finite complements, or infinitival complemements with deontic modality is interpreted as implicative. In other words, the implicativeness of the controlled event depends on the type of complement, rather than the control verb *per se.*

9. We are indebted to an anonymous reviewer for correctly pointing out the contrast between our observations and those in the previous literature.

2.3 The orientation of control complementizers towards attitudinal function

When a control complement is selected by an attitude verb, it carries logophoric information corresponding to the attitude context, in turn constituting part of the control dependency. The attitude context is a tuple consisting of four coordinates: ⟨X, Y, TIME, WORLD⟩ (Landau 2015: 33), where X and Y are bound by the ATTITUDE HOLDER, the matrix participant whose mental perspective is reported, and the ADDRESSEE, the matrix participant to whom this perspective is reported, respectively; following Landau (2015), we henceforth call the ATTITUDE HOLDER the AUTHOR. This context is evaluated relative to the epistemic or bouletic state of attitude holders in the reported situation, not the actual world (Landau 2015: 19). So under subject control verbs, the embedded subject is interpreted with respect to the matrix subject's perspective, whereas under object control verbs, it is interpreted with respect to the matrix object's perspective.

As shown in Section 2.2, the OC signature in logophoric object control is labile, preserved only in the base order. In the inverse order, NC obtains, such that the embedded subject refers freely – except to the matrix subject. We now show this restriction to actually be due to an anti-AUTHOR restriction associated with the object-control complementizer *-tolok,* rather than due to a restriction sensitive to grammatical function. In contrast, subject-control complementizers impose an AUTHOR restriction.

2.3.1 *The anti-AUTHOR restriction*

In the inverse order lacking OC, repeated in (5), the embedded subject behaves like a covert referential pronoun, i.e. *pro,* in that it is able to refer freely; yet it cannot refer to *Jane* in the matrix clause:

(5) *Inverse order*
Jane-i_i^{AUTH} [$e_{*i/j/k}$ party-lul ttena-tolok] Mary-lul_j seltukhayssta
Jane-NOM party-ACC leave-COMP Mary-ACC persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave the party.' NC

While this restriction appears to be sensitive to grammatical function, it is actually sensitive to *attitudinal function* – i.e. the function of a participant within the attitude context. Specifically, the embedded subject in (5) cannot refer to the matrix subject *Jane* because *Jane* corresponds to the matrix AUTHOR. To see this, consider (6b), in which the matrix verb 'persuade' has been passivized. If the restriction in (5) were oriented towards grammatical function, we should expect the embedded subject in (6b) to be unable to refer to the matrix passive subject *Mary.* Yet (6b) is well-formed under co-reference between the embedded subject and the matrix

subject *Mary* – crucially, because *Mary* in (6b) no longer corresponds to the AUTHOR (but rather the EXPERIENCER). Moreover, if *-tolok* were syntactically oriented towards grammatical function, it should change to one of the subject-control complementizers (*-kilo, -lyeko, -koca),* also contrary to fact:

(6) *Passivization in Object Control*

a. Jane-i_i^{AUTH} Mary-lul_j [$e_{*i/j/*k}$ ttena-**tolok**] seltukhayssta
Jane-NOM Mary-ACC leave-COMP persuaded
'Jane persuaded Mary to leave.' OC

b. Mary-ka_i [$e_{i/*j}$ ttena-**tolok**] seltuk-toy-ess-ta
Mary-NOM leave-COMP persuade-become-PST-DECL
'Mary was persuaded to leave.' OC

2.3.2 *The AUTHOR restriction*

We further support our claim that *-tolok* is oriented towards attitudinal function by briefly turning to subject control. The verb 'promise', for example, requires the subject-control complementizer *-kilo* (7). In both the base (7a) and the inverse order (7b), the embedded subject can only refer to *Jane* in the matrix clause:

(7) a. *Base order*
Jane-i_i^{AUTH} Mary-$eykey_j$ [$e_{i/*j/*k}$ party-lul ttena-kilo] yaksokhayssta
Jane-NOM Mary-DAT party-ACC leave-COMP promised
'Jane promised Mary to leave the party.' OC

b. *Inverse order*
Jane-i_i^{AUTH} [$e_{i/*j/*k}$ party-lul ttena-kilo] Mary-$eykey_j$ yaksokhayssta
Jane-NOM party-ACC leave-COMP Mary-DAT promised
'Jane promised Mary to leave the party.' OC

Yet given that, unlike in object control, the inverse order in subject control retains the full OC signature, this fact is ambiguous between there being a restriction that the embedded subject refer to either the matrix subject, or the matrix AUTHOR. As above, matrix passivization reveals that *-kilo* is indeed oriented towards attitudinal function: in (8), the embedded subject cannot refer to the matrix subject *Mary,* but rather must refer to the AUTHOR (in this case *Jane,* expressed as an optional oblique):

(8) *Passivized Subject Control*
Mary-ka_i (Jane-ey uyhay$_j$) [$e_{*i/j/*k}$ party-lul ttena-kilo]
Mary-NOM Jane-DAT-by party-ACC leave-COMP
yaksok-toy-ess-ta
promise-become-PST-DECL
'Mary was promised to leave the party (by Jane).' OC

2.3.3 *Conditions on the anti-AUTHOR restriction*

The anti-AUTHOR restriction is not a property of the complementizer *-tolok* by itself, but rather of *-tolok* within a complementation configuration. This is evinced by the asymmetry between complement and adjunct clauses headed by *-tolok*; see Example (9):[10]

(9) Jane$_i$-i Mary$_j$-lul [e$_{*i/j/*k}$ party-lul Suzi-wa hamkkey ka-**tolok**]$_1$
Jane-NOM Mary-ACC party-ACC Suzi-and together go-COMP
[kulayse e$_{i/j/k}$ talun chinkwu-lul manna-**tolok**]$_2$ seltukhayssta
so different friend-ACC meet-COMP persuaded
'Jane$_i$ persuaded Mary$_j$ to go to the party with Suzi together so that she$_{i/j/k}$ meets different friends.'

In the first *-tolok*-clause, which functions as a complement to the control verb 'persuade', the null subject position is obligatorily controlled by the matrix object *Mary.* By contrast, the subject position in the second *-tolok*-clause, which is a matrix adjunct purpose clause, refers freely. Since both clauses are headed by *-tolok,* but differ in terms of their relation to the matrix clause, viz. complement versus adjunct, the anti-AUTHOR restriction must be a property of *-tolok* within a complement clause.[11]

The joint necessity of *-tolok* and complementation is further illustrated by nominalized clauses, which – while equally available as complements to the verbs *seltukha* 'persuade' and *yaksokha* 'promise' – lack OC, and also any form of orientation towards attitudinal function (10):

(10) *Nominalized complements*
a. Jane-i$_i^{\text{AUTH}}$ Mary-lul$_j$ [e$_{i/j/k}$ ttena-**ki**-lul] seltukhayssta.
Jane-NOM Mary-ACC leave-NMLZ-ACC persuaded
'Jane persuaded Mary of {her/someone's/the} leaving.'
b. Jane-i$_i^{\text{AUTH}}$ Mary-eykey$_j$ [e$_{i/j/k}$ ttena-**ki**-lul] yaksokhayssta
Jane-NOM Mary-DAT leave-NMLZ-ACC promised
'Jane promised Mary {her/someone's/the} leaving.'

---

10. In (9), we choose an adjunct clause which can naturally be construed either high in the matrix or low in the control clause; we thank a reviewer for raising this issue.

11. Other languages like Japanese might exhibit a similar pattern, both in terms of (i) the absence of OC in the inverse order and (ii) the anti-AUTHOR restriction:

(i) *Japanese* (Takanobu Nakamura, p.c.)
a. Jane-ga$_i$ Mary-ni$_j$ [e$_{*i/j/*k}$ gakko-o tachisaru-yoo] susumeta
Jane-NOM Mary-DAT school-ACC leave-COMP persuaded
'Jane persuaded Mary to leave school.' *base order*
b. Jane-ga$_i$ [e$_{*i/j/??k}$ gakko-o tachisaru-yoo] Mary-ni$_j$ susumeta
Jane-NOM school-ACC leave-COMP Mary-DAT persuaded
'Jane$_i$ persuaded Mary$_j$ that *she*$_{*i/j/??k}$ leave school.' *inverse order*

2.4 Overt infinitival subjects

In Korean, the subject position of infinitival clauses may be overt.[12] In this section, we show that in object control, OC disappears when the subject position in the control clause is filled with an overt infinitival subject (**OIS**). Just like in the inverse order with a null infinitival subject, OC is lost when the embedded subject position is filled with an OIS.

The example in (11) shows a subject control clause with an overt pronominal or reflexive subject, marked with nominative case.[13,14] Just like the inverse order in subject control leaves OC intact, so does an OIS – the control clause in (11) exhibits OC:

(11) *Overt infinitival subjects in subject control*
Jane-i$_i$ [**caki/ku-ka**$_{i/*j}$ ttena-lyeko] nolyekhayssta
Jane-NOM self/(s)he-NOM leave-COMP tried
'Jane tried to leave.' OC (Borer 1989: 85)

In object control configurations, however, OC is lost when control clause hosts an OIS; NC obtains instead. Compare (12) and (13):

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12. In subject control, disjoint lexical DPs are ungrammatical in the embedded subject position:

(i) *Lexical DPs in subject control*
Jane-i$_i$ Mary-eykey$_j$ [Suzi-ka$_{*i/*j/k}$ ttena-kilo] yaksokhayssta
Jane-NOM Mary-DAT Suzi-NOM leave-COMP promissed.
Intended: 'Jane promised to Mary that Suzi will leave.

13. *ku* is a third person pronoun, formally identical to a demonstrative use (Kang 2015). The pronominal use of *ku* can be a complex morpheme: *ku* with a bound morpheme *-nye* 'female', which means 'that female'.

14. Korean has a rich anaphor inventory. The reflexive pronouns *caki* and *casin* can be used as local and long-distance anaphors (Yang 1983). It has been suggested that they are sensitive to logophoricity and must be anteceded by perspective holders in the sense of Sells (1987). While the complex anaphor *caki-casin* has been assumed to be a local anaphor in traditional analyses (Yoon 1989; Cole et al. 1990), it may be exempt from Condition A when logophoricity conditions are met (see Kim & Yoon (2009) and Ahn & Charnavel (2017) for experimental studies):

(i) John-un$_i$ [Mary-ka$_j$ caki$_{i>j}$/casin$_{i<j}$/caki-casin$_{*i/j}$-ul coahan-ta]-ko sayngkakhan-ta
John-TOP Mary-NOM self-ACC like-DECL-COMP think-DECL
'John thinks that Mary likes self.' modified from Ahn (2015: 6)

Ahn (2015) draws attention to the inanimate anaphor *cachey,* which is locally bound and subject to Condition A. However, its anaphoric nature is restricted to inanimate antecedents, so we cannot use it to test OC contexts.

(12) *Null infinitival subject + base order*
Jane-i$_i$ Mary-lul$_j$ [**e**$_{*i/j/*k}$ ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC leave-COMP persuaded
'Jane persuaded Mary to leave.' OC

(13) *Overt infinitival subject + base order*
a. Jane-i$_i$ Mary-lul$_j$ [**kunye-ka**$_{*i/j/k}$ ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC she-NOM leave-COMP persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave.' NC
b. Jane-i$_i$ Mary-lul$_j$ [**Suzi-ka**$_{*i/j/k}$ ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC Suzi-NOM leave-COMP persuaded
'Jane$_i$ persuaded Mary$_j$ that Suzi$_{*i/*j/k}$ leave.' NC

Because the OIS refers freely, except to the matrix AUTHOR, its effect on OC parallels that of an inverse control clause. So NC obtains whenever the control clause hosts an OIS, regardless of whether the control clause is in the base or inverse order, subject to the anti-AUTHOR restriction:

(14) *Overt infinitival subject + inverse order*
Jane-i$_i$ [**kunye-ka**$_{*i/j/k}$ ttena-tolok] Mary-lul$_j$ seltukhayssta
Jane-NOM she-NOM leave-COMP Mary-ACC persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave.' NC

Kwon et al. (2010: 304) report that the OIS in the base order is ungrammatical. We propose instead that this reported judgment is actually a matter of linguistic processing.[15] When there is a pause or an intervening item like an adjunct between the controller and the OIS, the sentence in (15b) becomes well-formed for speakers.[16]

(15) a. ?Chelswu-nun Yenghuy-lul$_i$ [kunye-ka$_i$ ttena-tolok] seltukhayssta
Chelswu-TOP Yenghuy-ACC she-Nom leave-COMP persuaded
'Chelswu persuaded Yenghuy to leave.'
b. Chelswu-nun Yenghuy-lul$_i$ [**kanunghan ppalli** kunye-ka$_i$ ttena-tolok]
Chelswu-TOP Yenghuy-ACC as.possible quick she-Nom leave-COMP
seltukhayssta
persuaded
'Chelswu persuaded Yenghuy to leave as quick as possible.'

15. We collected grammatical judgements for (15) from 12 native speakers.

16. As a reviewer points out, Cormack & Smith (2004: 70) also provide acceptable examples where the OIS is controlled by a dative argument. The reviewer points out that the case alternation on the controller might play a role in the OC-NC split. So far, we have observed that the case alternation is possible in object control with no difference regarding the OC-NC split, whereas in subject control (e.g., 'promise'-type) the dative argument cannot alternate with accusative case. Beyond this empirical observation, we have no explanation for this. However, our analysis does not hinge on it.

2.5 Interim summary

We have seen how control configurations behave with respect to two parameters, namely whether the control clause is in the base or inverse position, and whether or not it hosts an OIS. OC in object control is preserved only if the control clause is both in the base position and has a null subject. If the control clause is either in the inverse position, or has an OIS, or exhibits both of these properties, NC arises instead. In these NC cases, the embedded subject position thus behaves like a (null or overt) referential pronoun, referring freely except to the matrix AUTHOR. In contrast, OC in subject control is always retained, regardless of both the position of the control clause and the overtness of the embedded subject. Therefore, the embedded subject position in subject control behaves like a (null or overt) PRO which always refers to the matrix AUTHOR; note that by *overt PRO,* we mean an overt pronoun with all the properties associated with PRO, except for the fact that it is overt.[17] These results are summarized in Table 2:

Table 2. Summary of object and subject control

Order	**Object control†**		**Subject control‡**	
Subject	**Base**	**Inverse**	**Base**	**Inverse**
Null	OC	**NC**	OC	OC
	PRO	*pro*	PRO	PRO
Overt	**NC**	**NC**	OC	OC
	ref. pronoun	ref. pronoun	PRO	PRO

† The reading in the gray area is subject to the anti-AUTHOR restriction.
‡ The reading in the gray area is subject to the AUTHOR restriction.

3. Analysis

In this section, we argue that the control clause in the inverse order has moved (contra Polinsky & Kwon 2006 *et seq.*), providing arguments from selection, variable binding and extraction. We then present our analysis, which models the OC-NC split in Korean derivationally.

17. See Mensching (2000) and Szabolcsi (2009) for discussion of overt instances of PRO.

3.1 The control clause in the inverse order has moved

There are two possibilities regarding the status of the control clause in the inverse order: it is either an adjunct, or a complement to the control verb that has moved from its base into the inverse position. Based on the distribution of control complementizers, variable binding and extraction data, we show that it indeed originates as a complement to the verb, i.e. that the inverse order is related to the base order derivationally (in line with Cormack & Smith 2004, but *pace* Polinsky & Kwon 2006; Polinsky 2007 and Polinsky et al. 2007). Furthermore, we show that this movement does not reconstruct.

3.1.1 *The inverse control clause is selected by the control verb*

In the inverse order (16b), just like in the base order (16a), the complementizer heading the control clause can only be *-tolok,* i.e. the complementizer selected by object-control verbs like *seltukha* 'persuade'. If the control clause were a base-merged adjunct, no such restriction should hold. This indicates that the control clause must have started out in a local configuration with the control verb, so as to be selected by it.[18]

(16) a. *Base order*
Jane-i$_i$ Mary-lul$_j$ [e$_{*i/j/*k}$ ttena-**tolok/*kilo**] seltukhayssta
Jane-NOM Mary-ACC leave-COMP persuaded
'Jane persuaded Mary to leave.' OC

b. *Inverse order*
Jane-i$_i$ [e$_{*i/j/k}$ ttena-**tolok/*kilo**]$_h$ Mary-lul$_j$ t$_h$ seltukhayssta
Jane-NOM leave-COMP Mary-ACC persuaded
'Jane persuaded Mary to leave.' NC

3.1.2 *Extraction patterns*

We now provide extraction data constituting further evidence against an adjunct analysis of the inverse order. First, under an adjunct analysis, any extraction out of the control clause in the inverse order should be ill-formed, given its status as an adjunct. Consequently, a clause like (17) is wrongly predicted to be ill-formed:

(17) ?Jane-i$_i$ [e$_{*i/j/k}$ t$_m$ ttena-tolok]$_n$ [**ku party-nun**]$_m$ Mary-lul$_j$
Jane-NOM leave-COMP DEM party-TOP Mary-ACC
seltukhayssta
persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave the party.'

---

18. In subject control, the control clause likewise requires the same complementizer in both the base and the inverse order.

If the control clause in (17) were a base-merged adjunct, sub-extraction of its object, *ku party-nun,* in the form of topicalization to a position between the control clause and the matrix VP should be ruled out due to the general ban on lowering.[19] Alternatively, if it were a moved adjunct, (17) should equally be ruled out due to adjuncts being islands for extraction. Under the movement analysis proposed here, (17) is correctly predicted to be well-formed because the movement of the embedded object *ku party* precedes that of its remnant clause – i.e. the latter counter-bleeds the former. In the literature, such movement sequences instantiate what has been termed *Anti-Freezing* or *Remnant Movement* (Müller 1998).[20]

A second piece of extraction data used against the movement account comes from multiple scrambling. In Polinsky (2007), it is argued that Korean bans scrambling over an already scrambled constituent.[21] This is supposedly illustrated by the contrast in (18). (18a) shows the baseline, and in (18b), the embedded object *ku chayk-ul* has scrambled out into the matrix to clause-initial position. (18c), however, is claimed to be ill-formed due to the remnant clause scrambling over the object, which has itself previously scrambled:

(18) a. Chelswu-ka [Yenghi-ka ku chayk-ul ilkessta-ko] sayngkakhanta
C.-NOM Y.-NOM that book-ACC read-COMP think
'Chelswu thinks that Yenghi read that book.'

b. [Ku chayk-ul]$_i$ Chelswu-ka [Yenghi-ka t$_i$ ilkessta-ko] sayngkakhanta
that book-ACC C.-NOM Y.-NOM read-COMP think
'That book, Chelswu thinks that Yenghi read.'

c. *[Yenghi-ka t$_i$ ilkessta-ko]$_k$ [ku chayk-ul]$_i$ Chelswu-ka t$_k$
Y.-NOM read-COMP that book-ACC C.-NOM
sayngkakhanta
think
Intended: 'That Yenghi read it, that book, Chelswu thinks.'

(Polinsky 2007: 210)

---

19. Thanks to a reviewer for clarification on this issue.

20. The following example shows that object topicalization out of a complement clause is available independently in Korean:

(i) Jane-i$_i$ [ku party-nun]$_m$ Mary-lul$_j$ [e*$_{i/j/*k}$ t$_m$ ttena-tolok]$_n$ seltukhayssta
Jane-NOM DEM party-TOP Mary-ACC leave-COMP persuaded
'Jane persuaded Mary to leave the party.'

21. While Ha (2004) and Kwon (2010) argue that clausal scrambling does show reconstruction effects, they only consider long-distance scrambling of finite complements. In Section 3.1.3, we show that local scrambling of the control clause does not obligatorily reconstruct. See also Yoon (1991); Lee (1993); Cho (1994); a.o. for key properties of NP scrambling in Korean and Ko (2018) for a general survey.

Now, the examples in (19) involve a control clause and an adjunct clause. Polinsky argues that the adjunct clause 'for her own benefit' starts out in a position c-commanded by the matrix object *Yenghi.* According to her, no element has scrambled in (19a), while in (19b) the adjunct clause has scrambled over the control clause:

(19) a. Chelswu-nun [e hakkyo-ey ka-tolok] Yenghi-lul$_i$ [kunyecasin$_i$-uy
C.-TOP school-to go-COMP Y.-ACC herself-GEN
yuk-ul wihay] seltukhayssta
benefit-ACC for persuaded
'Chelswu persuaded Yenghi$_i$ to go to school for her$_i$ own benefit.'

b. Chelswu-nun [kunyecasin$_i$-uy yuik-ul wihay]$_j$ [*e* hakkyo-ey
C.-TOP herself-GEN benefit-ACC for school-to
ka-tolok] Yenghi-lul$_i$ t$_j$ seltukhayssta
go-COMP Y.-ACC persuaded
'Chelswu, for her$_i$ own benefit, persuaded Yenghi$_i$ to go to school.'
(Monahan 2005: Example 39)

Given the grammaticality of (19b), but the ungrammaticality of (18c), Polinsky (2007) concludes that the control clause in the inverse order must be an adjunct. She reasons that since Korean disallows scrambling over an already scrambled constituent, and since the adjunct clause in grammatical (19b) has moved, the control clause in the inverse order cannot have come to occupy its position via movement; rather, it must have been adjoined in situ.

Our objection against this argument concerns its conclusion. Specifically, given a well-formed construction and the premises that (1) scrambling of X over Y that has itself scrambled is illicit, (2) X can be shown to have moved over Y, the conclusion that no movement of Y whatsoever can have occurred is invalid. If this were true, a case like (17), repeated in (20), is wrongly predicted to be ungrammatical:

(20) ?Jane-i$_i$ [e$_{*i/j/k}$ t$_m$ ttena-tolok]$_n$ [ku party-nun]$_m$ Mary-lul$_j$
Jane-NOM leave-COMP DEM party-TOP Mary-ACC
seltukhayssta
persuaded
'As for the party, Jane persuaded Mary that she$_{*i/j/k}$ leave it.' NC

In (20), the embedded object *ku party-nun* moves out of the control clause, after which the remnant control clause moves over the moved object. We propose that the ungrammaticality of (18c) on the one hand, and the grammaticality of (19b) and (20) on the other follow from the type of movements involved, rather than movement over a moved constituent *per se.* In other words, the correct generalization is that movement of X over Y that has itself moved is indeed possible, so long as the types of movement involved are distinct. This, in fact, corresponds to the *Müller-Takano Generalization,* formulated in (21):

(21) *Müller-Takano Generalization* (Müller 1998: 209):
Remant XPs cannot undergo Y-movement if the antecedent of the unbound trace has also undergone Y-movement.

According to the Müller-Takano Generalization, a configuration where X moves over Y, and Y has itself moved out of X, is well-formed only if the types of movement undergone by X and Y are distinct. This is illustrated in the following examples. In the baseline in (22), no sub-extraction out of the control clause has occurred:

(22) *No sub-extraction out of the control clause*
Jane-i$_i$ Mary-lul$_j$ [e$_{*i/j/*k}$ ku party-nun ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC DEM party-TOP leave-COMP persuaded
'As for the party, Jane persuaded Mary to leave it.' OC

In (23), the embedded object has been topicalized out of the control clause, and in (24), the control clause has scrambled to a position before the matrix object:

(23) *Object topicalization*
Jane-i$_i$ [**ku party-nun**]$_m$ Mary-lul$_j$ [e$_{*i/j/*k}$ t$_m$ ttena-tolok] seltukhayssta
Jane-NOM DEM party-TOP Mary-ACC leave-COMP persuaded
'As for the party, Jane persuaded Mary to leave it.' OC

(24) *Control clause scrambling*
Jane-i$_i$ [e$_{*i/j/k}$ **ku party-nun ttena-tolok**]$_m$ Mary-lul$_j$ t$_m$ seltukhayssta
Jane-NOM DEM party-TOP leave-COMP Mary-ACC persuaded
'As for the party, Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave it.' NC

In (20), both the embedded object and the control clause have moved. The remnant control clause moves to a position preceding the topicalized object, a position where the trace in the control clause is not bound by its antecedent, the topicalized object. This sequence of movement steps is well-formed because each movement step instantiates a distinct type of movement, viz. topicalization and scrambling. By contrast, (25) is ungrammatical due to a minimal, yet crucial difference: the moved object has not been topicalized, like in (20), but scrambled. Since the movement steps undergone by the embedded object and the control clause both instantiate scrambling, the clause is ill-formed:

(25) *MTG: *Object scrambling ≺ remnant control clause scrambling*
?*Jane-i$_i$ [e$_{*i/j/k}$ t$_y$ **ttena-tolok**] [**ku party-lul**]$_y$ Mary-lul$_j$ seltukhayssta
Jane-NOM leave-COMP DEM party-ACC Mary-ACC persuaded
Intended: 'As for the party, Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave it.'

A prediction made by both the adjunct and the movement account is that sub-extraction from a control clause in inverse position should be ill-formed. Under the adjunct account, this follows from the islandhood of adjuncts, while

under the movement account, this follows from the derived islandhood of moved elements, i.e. Freezing. This prediction is borne out: in (26), topicalizing the embedded object *ku party-nun* out of the control clause in the inverse order leads to ungrammaticality:[22]

(26) *Freezing: *control clause scrambling ≺ object scrambling*
?*[**ku party-nun**]$_n$ Jane-i$_i$ [e$_{*i/j/k}$ t$_n$ **ttena-tolok**]$_m$ Mary-lul$_j$
DEM party-TOP Jane-NOM leave-COMP Mary-ACC
t$_m$ seltukhayssta
persuaded
Intended: 'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave the party.'

Finally, note that the adjunct analysis would leave unexplained the contrast in (9), where one clause exhibits the anti-AUTHOR restriction but the other does not, despite both being headed by *-tolok*.

3.1.3 *The anti-reconstruction of control clause movement*

We now show that the moved control clause does not undergo reconstruction, offering evidence from Condition C and variable binding. First, when the R-expression *Mary* in the control clause co-refers with a matrix object in the base order, it induces a Condition C violation (27a). In the inverse order, we find that the sentence is grammatical (27b) – it does not reconstruct to its base position and hence obviates a Condition C violation:

(27) *No reconstruction for Condition C*
a. *Jane-i$_i$ kunye-lul$_j$ [e$_{*i/j/*k}$ **Mary**$_j$-uy yetongsayng-ul manna-tolok]
Jane-NOM she-ACC Mary-GEN sister-ACC meet-COMP
seltukhayssta
persuaded
Intended: 'Jane persuaded her$_j$ to meet Mary$_j$'s sister.'
b. Jane-i$_i$ [e$_{*i/j/k}$ **Mary**$_j$-uy yetongsayng-ul manna-tolok]$_m$ kunye-lul$_j$
Jane-NOM Mary-GEN sister-ACC meet-COMP she-ACC
t$_m$ seltukhayssta
persuaded
'Jane persuaded her to meet Mary's sister.'

---

22. A reviewer points out that on the Movement Theory of Control (MTC; Hornstein 1999, 2001, 2003), one might relate the lack of OC in the inverse order to the controller's inability to move out of the control clause, due to Freezing. As noted by the reviewer themselves, this argument does not go through because of inverse subject control (7b). We add that on the MTC version of our account, as the controller's movement out of the control clause would precede that of the control clause itself (Anti-Freezing or Remnant Movement), OC is actually predicted to remain.

This shows that the control clause containing the R-expression does not reconstruct, but rather is fed into a new configuration from where its subject is no longer c-commanded by the matrix object. Second, anti-reconstruction is supported by variable binding data. In (28b), the control clause containing a bound variable undergoes scrambling such that the variable pronoun cannot be bound by a *wh*-quantifier, which shows that the moved clause does not reconstruct to its base position:[23]

(28) *No reconstruction for variable binding in the inverse order*

a. Jane-i_i nwukwu-lul_j [[kunye-uy_j emma-ka] ttena-tolok]
Jane-NOM who-ACC she-GEN mom-ACC leave-COMP
seltukhayss-ni?
persuaded-Q
'Who$_j$ did Jane persuade that her$_j$ mom should leave?'

b. Jane-i_i [[kunye-$uy_{i/*j/k}$ emma-ka] ttena-tolok]$_m$ nwukwu-lul_j t_m
Jane-NOM she-GEN mom-NOM leave-COMP who-ACC
seltukhayss-ni?
persuaded-Q
'Who$_j$ did Jane persuade that her$_j$ mom should leave?'

3.2 The OC-NC split

3.2.1 *PRO as a bound minimal pronoun*

Since we have observed that the presence of OC is sensitive to the derivational operation of movement, it would be stipulative to assume that the correct type of null embedded subject, viz. PRO versus *pro,* does not surface as a function of whether the control clause has moved or not. It is instead plausible to depart from a single source consisting of a defective φ-feature set. We thus follow the underspecification view of PRO, according to which PRO starts out as a *minimal pronoun* [D,φ:□] with unvalued φ-features (Kratzer 2009, a.o.). The specific type of pronominal element this minimal pronoun ends up as arises as a result of its syntactic context, rather

23. In recent work, Royer (2020) argues for the Mayan language Chuj that objects in transitive clauses undergo A-movement from Comp,V to Spec,*v*P. Analogous to our case, Royer shows that (i) that this movement bleeds c-command between the moved object and the matrix subject, and (ii) that it does not reconstruct. Unlike in our Korean case, however, where movement of the control clause is always optional, object movement in Chuj is obligatory except in the case of reflexives, which must remain in situ due to Condition A. While the facts relating to the A and A-bar distinction in Korean are beyond the scope of this paper, we conjecture that movement of the control clause to an outer Spec,*v*P also instantiates A-movement, and that, following Boeckx (2001), reconstruction of A-moved elements is only possible to positions which assign Case.

than any inherent featural make-up. With different derivations, [D,φ:□] is thus varyingly realized as e.g. a relative pronoun, a reflexive, *pro* or PRO. For logophoric control, we adopt Landau's (2015) two-tiered approach, where PRO is linked to a *pro* bound by the matrix controller. *pro,* merged in embedded Spec,CP in order to satisfy C's selectional feature [*u*D], becomes bound by either the matrix AUTHOR or ADDRESSE. While *pro* ends up obtaining its reference from the matrix controller via variable binding, it comes to be linked to PRO via predication. *pro* thus encodes a logophoric center overlaid as a second tier on predicative control, the first tier; the special *de se* property arises as a result of a presupposition associated with the control complementizer.

Following Kratzer (2009), both PRO and *pro* start out as minimal pronouns consisting of [D,φ:□].[24] When binding of [D,φ:□] fails, due to there being no c-commanding binder at Spell Out as a result of movement of the control clause, [D,φ:□] is rendered a free variable via *Feature Insertion at LF.* Due to [D,φ:□]'s derived status a free variable, OC can no longer arise, and NC arises instead. Another configuration which disrupts OC is the presence of an OIS in the control clause: because the OIS carries inherent φ-features, it cannot be bound, and hence OC cannot arise. There are thus two routes to NC: (1) movement of the control clause to a position from where its embedded subject cannot be bound, and (2) an OIS in the control clause.

Regarding the anti-AUTHOR restriction, we propose that it be encoded as a presupposition on *-tolok*. While *pro* can generally come to be bound by either the matrix AUTHOR or ADDRESSEE, yielding pro_x and pro_y, respectively (Landau 2015: 43), *-tolok* carries the presupposition that *pro* cannot be pro_x, i.e. that *pro* ≠ pro_x. In the Figures below, we represent this simply with the diacritic ≠ AUTH under *pro*.

3.2.2 *Derivations*

We now give derivations of the OC-NC split, showing how the properties we have established – movement of the control clause, the type of the embedded subject, and the anti-AUTHOR restriction – interact to yield either OC or NC. We begin with the canonical baseline, i.e. the base order with an OC interpretation (29) in Figure 1.

(29) *Inverse order*

Jane-i_i	Mary-lul_j	[$e_{*i/j/*k}$	hakkyo-lul	ttena-tolok]	seltukhayssta
Jane-NOM	Mary-ACC		school-ACC	leave-COMP	persuaded

'Jane persuaded Mary to leave school.' OC

24. We nevertheless keep the labels *pro* and PRO for convenience.

After the object-control complementizer *tolok* merges with TP, a minimal pronoun [D,φ:□] is merged in Spec,CP due to *tolok*'s need to project an individual coordinate of the embedded context in its specifier. The derivation proceeds, ultimately yielding a configuration where the matrix object *Mary* determines the reference of *pro* via variable binding, which is in turn linked to PRO via predication.[25,26]

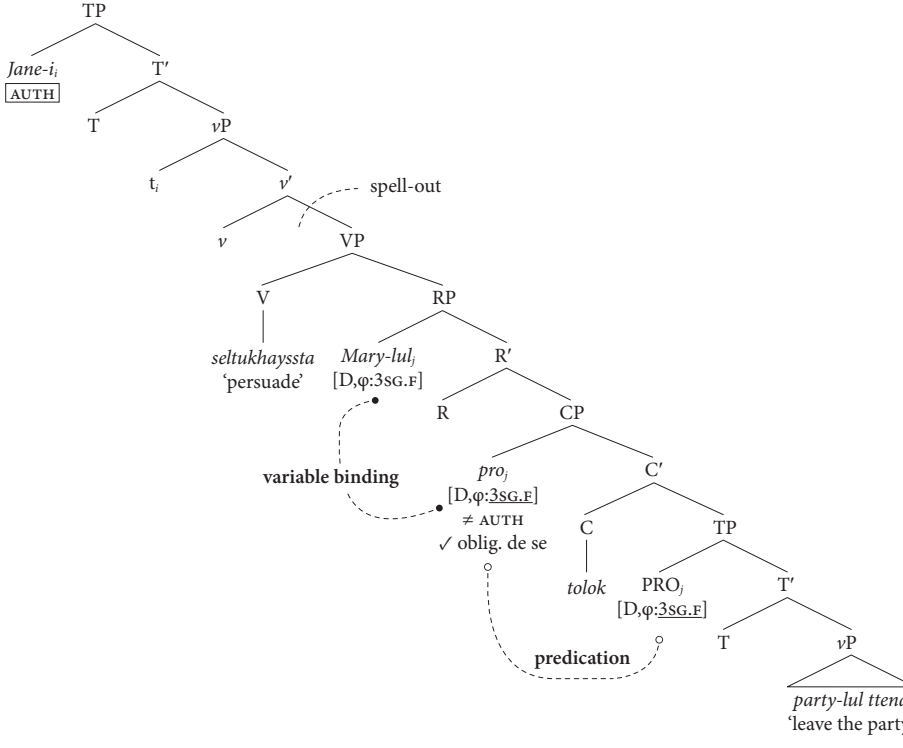

Figure 1. Object control + base order: OC

Next, we turn to the inverse order with an NC interpretation (30) in Figure 2. The complement CP now carries a [SCR] feature, needed for its later movement. The derivation then continues as in the base order up to the merger of *v*, which now carries a [•SCR•] feature (Grewendorf & Sabel 1999; Heck & Müller 2007), the

25. In the Figures, RP is the complement of the object control verb. Its head R^0 functions as a predicative relator between the matrix object and the complement clause.

26. Linking *pro* to PRO via predication is afforded by PRO's movement from Spec,TP to Spec,FinP, which forms a λ-abstract; we omit this step here for simplicity.

triggering counterpart to [SCR]. After the matrix subject *Jane* is merged in Spec,*v*P, the CP moves to an outer Spec,*v*P, thereby satisfying *v*'s [•SCR•] feature. It is the configuration resulting after the subject *Jane*'s movement to Spec,TP which renders the complement CP from a prospective OC clause to an NC clause, because there is no element in the matrix clause that can bind *pro* : the matrix object *Mary* does not c-command *pro,* and the matrix subject *Jane,* despite c-commanding *pro*, corresponds to the matrix AUTHOR, which, however, is barred from binding *pro* due to *tolok*'s inbuilt anti-AUTHOR restriction. Consequently, since there is no matrix element to transmit its φ-values to *pro*, it ends up as a free variable, able to refer to any entity except the matrix AUTHOR. This free reference is passed on to PRO via predication, and hence NC arises instead of OC.

(30) *Inverse order*
Jane-i$_i$ [e$_{*i/j/k}$ hakkyo-lul ttena-tolok] Mary-lul$_j$ seltukhayssta
Jane-NOM self-NOM school-ACC leave-COMP Mary-ACC persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave school.' NC

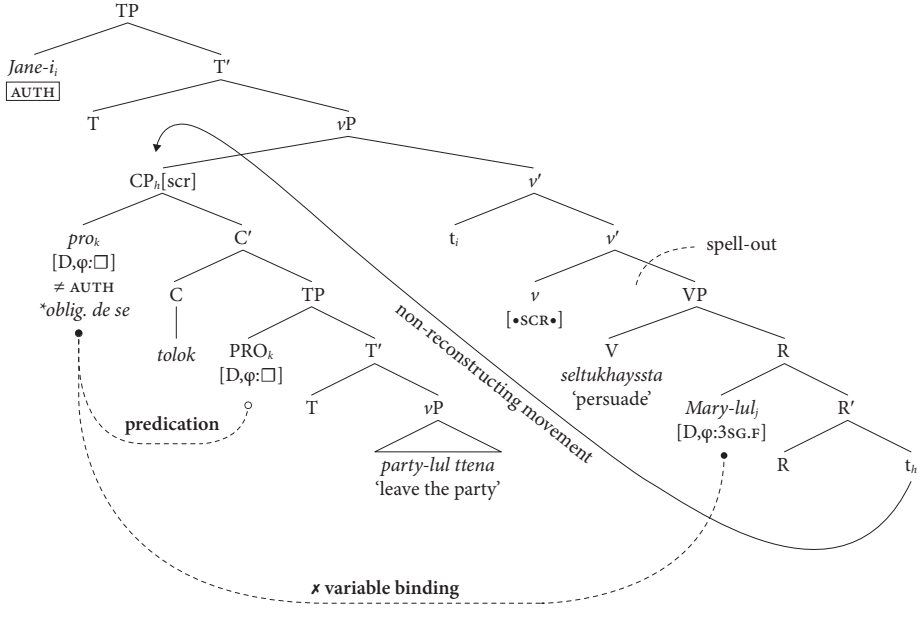

Figure 2. Object control + inverse order: NC

We model the mechanism by which the minimal pronoun *pro* becomes a free variable as a corollary of the semantic condition in (31):

(31) *Semantic condition on bound pronouns* (Landau 2015: 51)
At the semantic interface, bound pronouns must be unvalued.

We propose the operation *Feature Insertion at LF* as a means to satisfy (31) in OC environments: when an unvalued, i.e. minimal pronoun cannot be bound at the interface due to the lack of a c-commanding binder, it receives interpretable φ-values at LF. Feature Insertion thus converts a minimal pronoun into a full pronoun which cannot be bound, thereby satisfying (31). If (31) is understood as a bi-conditional criterion that a pronoun is bound if and only if it is unvalued, Feature Insertion follows as a natural way to satisfy (31). As for why Feature Insertion at LF should be an available option in Korean, it must be afforded by the fact that the conditions on overt subjects are more liberal than those in a language like English. Landau (2015: 51) suggests two other ways of satisfying (31): Feature Transmission at PF and Feature Deletion at LF. Either a bound pronoun never carries interpretable features to begin with, or any interpretable features it has are removed prior to semantics. The two operations are complementary, with Feature Transmission at PF restricted to OC environments, and Feature Deletion at LF to long-distance dependencies.[27]

Lastly, we derive the base order in which the control complement hosts an OIS, with an NC interpretation (32) in Figure 3. That this configuration yields NC rather than OC boils down to the fact that the OIS itself carries fully specified, interpretable φ-values and thereforce cannot be bound by the matrix subject or object. It is a free variable, so NC must arise.

(32) *Overt infinitival subject + base order*
Jane-i$_i$ Mary-lul$_j$ [**kunye-ka**$_{*i/j/k}$ ttena-tolok] seltukhayssta
Jane-NOM Mary-ACC she-NOM leave-COMP persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{*i/j/k}$ leave.' NC

27. A reviewer points out that when OC complements undergo passivization, we should predict NC. As passivization is A-movement, there should be no possible c-commanding controller to bind the null embedded subject in the passivized complement. Although passivized gerundive complements in subject position in English exhibit OC (Landau 2013: 42), we cannot test this in Korean, where OC gerundive complements are not headed by infinitival control complementizers (e.g., *-tolok*).

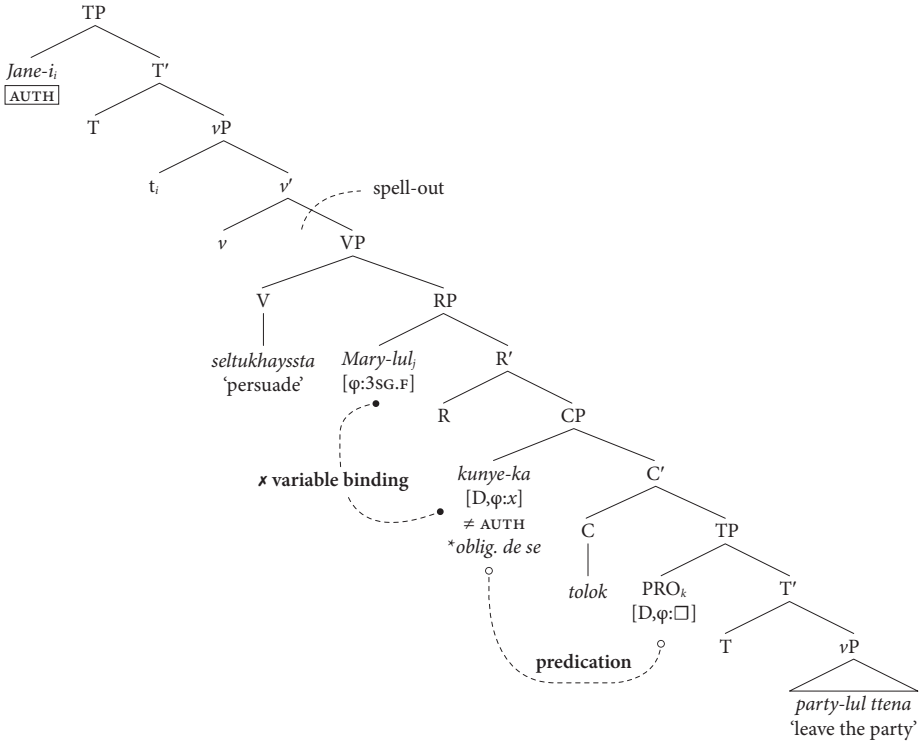

Figure 3. Object control + base order + OIS: NC

In a mixed configuration with both the inverse order and an OIS (cases like (14), not explicitly derived here), OC fails to obtain for two reasons: (1) the fact that the embedded subject cannot be bound in its moved position, and (2) the fact that the embedded subject is a full pronoun. There are hence two factors that yield NC, either individually or jointly: movement of the complement clause, and an OIS.

3.2.3 *The presence vs absence of obligatory de se*

The final issue we turn to in this section concerns the distribution of the obligatory *de se* attitude holding between controller and controllee. It is present only if OC obtains, and absent otherwise. The loss of obligatory *de se* in our NC cases must be directly tied to the absence of a binding relation between a matrix nominal and embedded *pro,* given that *de se* is a special kind of reflexive *de re* belief an attitude holder has about themselves – reified grammatically as a special kind of co-reference. In other words, *de se* is necessarily absent between two individuals x and y if x and y are distinct. In terms of the system in Landau (2015: 41f): as *pro* in Spec,CP is rendered a free, not a bound variable, the conditions for applying the concept generator function G_{SELF} are not met, and hence the obligatory *de se* presupposition cannot arise.

4. Open issues

Before concluding, we touch on subject control, the lifting of the anti-AUTHOR restriction via modality in the control clause, and predictions of our account.

4.1 Subject control

So far, we have mainly been concerned with object control. We briefly consider subject control, where the interactions differ from those in object control. Most importantly, OC is retained both when the control clause appears in inverse position (33a), or its subject is overt (33b):[28]

(33) *Subject control*

a. Jane-i$_i$ [e$_{i/*j/*k}$ party-lul ttena-kilo]$_h$ Mary-eykey$_j$ t$_h$ yaksokhayssta
Jane-NOM party-ACC leave-COMP Mary-DAT promised
'Jane promised Mary to leave.' *inverse order:* OC

b. Jane-i$_i$ Mary-eykey$_j$ [**kunye-ka**$_{i/*j/*k}$ party-lul ttena-kilo] yaksokhayssta
Jane-NOM Mary-DAT she-NOM party-ACC leave-COMP promised
'Jane promised Mary to leave the party.' *OIS:* OC

The embedded subject retains the OC property that it can only refer to the matrix subject. But in fact, the picture is inconclusive: since the AUTHOR restriction holds in subject control, the source of this OC property is ambiguous, such that we should distinguish a genuine case of obligatory subject control via other diagnostics. One of the diagnostics for OC is that the embedded subject resists a strict reading in the context of VP ellipsis, while an NC subject can have both a strict and sloppy reading. (34) shows the interpretive patterns of control clauses headed by two different complementizers under VP ellipsis:

(34) a. *Subject control + -kilo*
Jane-i$_i$ [e$_{i/*j/*k}$ mwutay-ey nam-**kilo**] keylcenghayss-ko,
Jane-NOM stage-at stay-COMP decided-COMP
Mary-to kulayssta
Mary-also did.so

i. Strict: %Jane$_i$ decided [e$_i$ to stay in the scene], and Mary$_j$ decided [e$_i$ to stay in the scene].

ii. Sloppy: Jane$_i$ decided [e$_i$ to stay in the scene], and Mary$_j$ decided [e$_j$ to stay in the scene].

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28. Given that the inverse control clause remains c-commanded by the matrix subject/AUTHOR, we might expect OC to arise; yet this would leave unexplained (33b), where an OIS does not yield NC, but rather behaves like overt PRO.

b. *Subject control + -lyeko*
Jane-i$_i$ [e$_{i/*j/*k}$ mwutay-ey manu-**lyeko**] keylcenghayss-ko,
Jane-NOM stage-at stay-COMP decided-COMP
Mary-to kulayssta
Mary-also did.so
i. Strict: *Jane$_i$ decided [e$_i$ to stay in the scene], and Mary$_j$ decided [e$_i$ to stay in a scene].
ii. Sloppy: Jane$_i$ decided [e$_i$ to stay in the scene], and Mary$_j$ decided [e$_j$ to stay in the scene].

A sloppy and, for some speakers, also strict reading is possible with *-kilo* in (34a), whereas only a sloppy reading is possible with *-lyeko* in (34b).[29,30] (34a) can be viewed as an "illusory" case of OC, due to the AUTHOR restriction. By contrast, the obligatory sloppy identity shown in (34b) suggests that this complement genuinely contributes to the OC signature. To sum up, the full picture of the interaction of subject control configurations with factors like movement and overt subjects is as yet unclear. This puzzle remains to be investigated in future research.

4.2 Lifting the anti-AUTHOR restriction

When the control clause is marked with modal possibility, *-tolok*'s anti-AUTHOR restriction is lifted. In the base order with OC (35), the embedded subject must refer to either *Jane* or *Mary* in the matrix clause; in the inverse order with NC (36), its reference is fully free:[31]

(35) Jane-i$_i$ Mary-lul$_j$ [e$_{i/j/*k}$ hakkyo-lul ttena-lswuiss-tolok]$_h$ seltukhayssta
Jane-NOM Mary-ACC school-ACC leave-can-COMP persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{i/j/*k}$ may / is able to leave school.' OC

(36) Jane-i$_i$ [e$_{i/j/k}$ hakkyo-lul ttena-lswuiss-tolok]$_h$ Mary-lul$_j$
Jane-NOM school-ACC leave-can-COMP Mary-ACC
t$_h$ seltukhayssta
persuaded
'Jane$_i$ persuaded Mary$_j$ that she$_{i/j/k}$ may / is able to leave school.' NC

---

29. We gave 5 speakers a context in which both Mary and Jane are working on a theater production, but in which only Jane is also acting. Mary decides that Jane should stay in a certain scene, and so does Jane.

30. As noted by a reviewer, this suggests that *-kilo* clauses seem to not involve OC.

31. Depending on the context, the modal flavor is deontic or circumstantial. We refer to the modal expression *-(u)l-swu-iss* 'IRR-possibility-exist' as 'can' for simplicity. See Kim (2010) for a syntactic, and Mun (2016) for a semantic analysis.

This change in referential potential is reminiscent of *control shift* and *proxy control,* where non-canonical control typically arises with the introduction of a permission semantics in the control clause. In control shift, the controller shifts from subject to object or vice versa, while in proxy control, it switches to an extra-sentential, discourse-contextually determined entity (Doliana & Sundaresan to appear). (35) thus instantiates optional control shift, while (36) is simply a case of full NC. The same OC-NC split as a function of the control clause's position confirms that the source of the lifted anti-AUTHOR restriction is indeed modality.

Though a full analysis lies outside the scope of this paper, we lean towards Uegaki (2011) in assuming that modality introduces an additional thematic layer which effectively "dissociates" the embedded Agent from PRO: the already indirect link between the matrix controller and PRO is broken up even further by the presence of an additional embedded Agent, such that PRO ceases to be referentially constrained by the logophoric center *pro* in Spec,CP – reference to the AUTHOR is thus indirectly allowed.

4.3 Outlook

In this section, we present a possible extension to the analysis offered in Section 3.2. So far, we have discussed arguments pointing to the conclusion that clausal movement and the overtness of the embedded subject can bleed OC. This conclusion can be extended to logically possible abstract patterns of the OC-NC split across languages.

One of these patterns comes from languages reported to have OISs in control configurations, such as Hungarian and Romance (see e.g. Szabolcsi 2009; Barbosa 2009; a.o.). The most notable difference between Korean and Hungarian OISs in control configurations, for instance, is the fact that the latter behave like overt PROs: there is a full φ-matching requirement between the matrix verb and the OIS, and the OIS must be interpreted *de se* (Szabolcsi 2009: 17, 23).[32]

We conjecture that language-specific pronoun inventories, including the availability of minimal pronouns and their (inherent or derived) featural make-ups, determine the overtness of controllees; OISs can behave like overt PROs or referential pronouns, or PRO is always null in certain languages. Another route to NC is movement of the control clause, a third ingredient in this connection being whether this movement reconstructs or not. We expect the OC interpretation of the embedded subject to be retained if the control clause must reconstruct to its base position.

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32. In addition, Hungarian OISs are only possible in subject control, but not object control (see Szabolcsi (2009: 12, 18) for examples).

The OC-NC split pattern in Korean also provides support for Landau (2015)'s two-tiered Theory of Control, especially for logophoric OC, in which the control complementizer functions as the central locus of control, including casting the *de se* presupposition.[33] A speculation based on our analysis is that there might exist complementizers which lexicalize a distinct orientation towards attitudinal function, such as ADDRESSEE or anti-ADDRESSEE.

5. Conclusion

In this paper, we have investigated the distribution of OC and NC in interaction with certain parameters in Korean control, namely movement of the control clause, overt infinitival subjects and the orientation of control complementizers to attitudinal function. Specifically, we have seen that movement of the control clause, an overt infinitival subject, or both disrupt the OC relation in object control, yielding NC. In all cases, the embedded subject position remains subject to an anti-AUTHOR restriction, which we locate on the complementizer *-tolok*. By contrast, the complementizer in subject control is oriented towards the AUTHOR. Various issues, including subject control and cross-linguistic variation, remain for future research.

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33. A major prediction of our account is that OC should be unaffected by movement of the control clause in predicative control because there is no logophoric *pro,* and hence no variable binding which could be bled. Unfortunately, predicative control complements in Korean involve nominalization, making this prediction untestable.

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Control from inside

Evidence from Japanese

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

1. Introduction

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

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

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

https://doi.org/10.1075/la.270.05mat

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

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

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

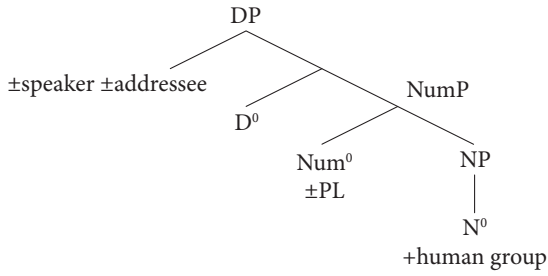
There seems to be a tight connection between nonidentical nondisjoint reference and *de se*. Landau (2015) reveals that in complement control where nonidentical nondisjoint reference (e.g. partial control) is allowed, *de se* is obligatory. But where nonidentical nondisjoint reference is impossible,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

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

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

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

(4)



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

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

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

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

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

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

2. Data

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

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

2.1 Control as force embedding

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2.2 Partial control

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

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

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

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

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

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

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

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

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

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

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

2.3 De se

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

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

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

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

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

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

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

2.4 Nonbiunique selectional relations

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2.5 Forces in roots

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

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

Observe the contrast in the data below.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

(35)

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

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

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

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

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

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

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

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

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

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

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

Table 1. Morphology, person restrictions, and force

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

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

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

3. Interim summary

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

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

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

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

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

4. Extension to English

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

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

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

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

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

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

4.1 Subject, object and split control

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

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

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

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

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

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

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

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

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

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

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

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

4.2 Partial control

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

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

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

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

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

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

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

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

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

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

5. How does the force arise clause-internally?

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

5.1 A force-specific head?

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

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

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

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

5.2 Indexical agreement

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

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

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

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

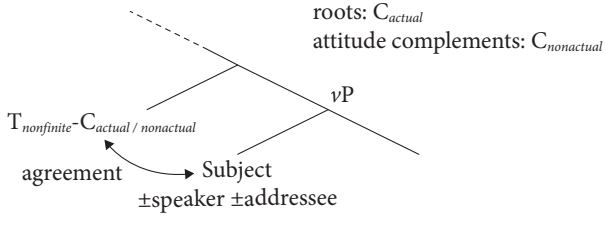
I focus on the subscript *c*, indicating the context of the utterance. This implies that even if the pronoun includes the speaker of a shifted context *c'*, it does not fall under the first person. Another important thing (48) shows is that first-person pronouns are not constants. They are not bound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

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

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

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

(49) Indexical agreement



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

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

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

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

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

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

5.3 Creating a *de se/te* property

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

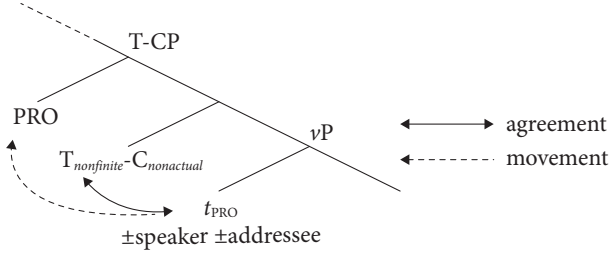
For instance, Chierchia (1990) contends that control complements involving *de se* attitude reports denote properties. At first blush, this may appear to suggest that control complements have a reduced syntactic structure like a VP. However, Chierchia's proposal is just the opposite. He posits a null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

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

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

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

(51)



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

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

6. Associative structure

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

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

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

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

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

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

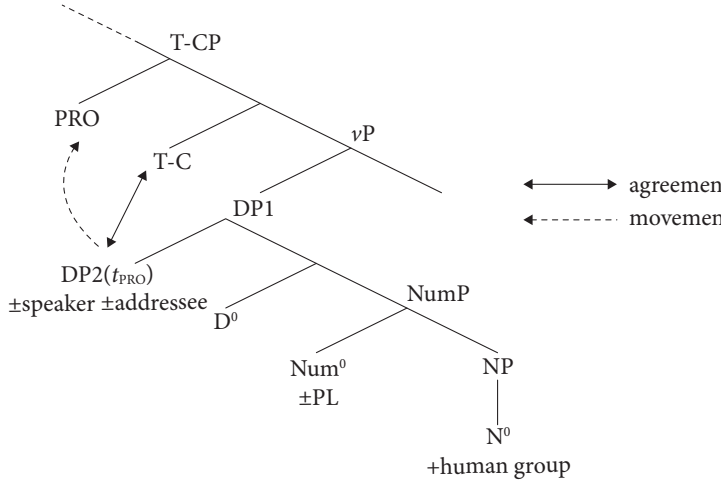
Vassilieva extends this structure to first/second-person plural pronouns such as *we* and *you*.PL, which also display associative semantics. (54a, b) exemplify simplified structures of her proposal (adapted from Vassilieva 2005: 50).

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

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

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

(55)



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

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

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

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

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

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

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

7. Remaining issues and conclusion

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

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

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

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17. I appreciate the anonymous reviewers for alerting me to some of these issues.

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Control and covert modality in Hungarian

MECs and postverbal-only focus constructions

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We discuss two seemingly unrelated constructions of Hungarian: a type of modal existential *wh*-construction (MEC), and a structure that on the surface seems to be a monoclausal focus construction. They are argued to have a similar biclausal underlying structure involving control and covert modality, the latter triggering the raising of the embedded verb to the selecting predicate. To account for this movement and other transparency phenomena attested in these constructions, adjunction of the moved wh-words to a non-finite TP-domain is proposed following Šimík (2011, 2013a). This analysis is closer to standard cross-linguistic accounts of both control and restructuring: though infinitival clauses can contain their own focus-related elements, it seems justifiable to assume that they are smaller than CPs.

1. Introduction

The focus of the present paper is on two Hungarian constructions with at first sight rather idiosyncratic properties. One of them is the postverbal-only focus construction of Hungarian: sentences that seem to be monoclausal, containing only a postverbal focus without there being a preverbal focus as shown in (1a). That postverbal focus usually necessitates a preverbal focus constituent in Hungarian is indicated by the contrast in grammaticality between (1b) and (1c), also discussed in É. Kiss (1998). The *only*-DP, when appearing as the only focus-related constituent within the sentence, must occupy the preverbal focus position (1c). To ease understanding, a context is provided for (1a).

Context for (1): Family at a restaurant: finished with the main course, everybody is full except one person who is ready for dessert. However, when it turns out that there is no one else who wants to have dessert, this person also decides against it, saying:

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(1) a. Nem esz-ek csak én desszert-et.
not eat-1SG only I.NOM dessert-ACC
'I am not **willing to/going to** be the only one who eats dessert.'
b. *Esz-ek desszert-et csak én.
eat-1SG dessert-ACC only I.NOM
'Only I eat dessert.'
c. Csak én eszek desszert-et.
only I.NOM eat-1SG dessert-ACC
'Only I eat dessert.'

The second construction-type under consideration in this paper is modal existential constructions (MECs), among them one particular pattern that is attested only in Hungarian in the corpus of Šimík (2011). In (2a) we can see a regular Hungarian MEC with many cross-linguistic parallels regarding the selecting predicate. In (2b) there is a variant of it with the verb *tud* 'can, know' unparalleled as the selecting verb in the languages of the world according to Šimík, in spite of the fact that MECs always express circumstantial modality. This is also indicated by the presence of *can* in the English translations of the sentences in (2), even when it does not overtly appear in the Hungarian sentence.

(2) a. (Nekem) nincs mi-t olvas-n-om.
I.DAT NEG.EXIST what-ACC read-INF-1SG
'There is nothing that I can read.'
b. (Én) nem tud-ok mi-t olvas-ni.
I.NOM not can-1SG what-ACC read-INF
'There is nothing that I can read.'

What connects (1a) and the MEC examples in (2) is that, as the glosses also indicate, both construction types express more than what actually appears on the surface. In (1a) we need to account for how the willingness interpretation arises. In the MECs either the existential or the circumstantial verb has an overt presence, to the exclusion of the other, with the option in (2b) apparently restricted to Hungarian, similarly to the sentence in (1a) with the given interpretation as far as I know. These observations are what determine the main research questions of this paper:

1. How to derive the covert modal meanings in these different constructions? This raises further questions related to the interaction between the clauses involved such as the size of the embedded clause and the nature of obligatory control.
2. How to account for the exceptional nature of the Hungarian patterns in (1a) and (2b)?

By juxtaposing (1a) with the somewhat better studied MEC constructions we discuss the implications of an account in terms of a biclausal obligatory control structure for postverbal-only focus constructions. This results in an analysis more in line with the general properties of Hungarian, with the irregular nature of the construction being only apparent. The surface monoclausality results from the presence of a covert modal in the sentence, another property shared with MECs.

The structure of the paper is as follows: In Section 2 the properties of the two constructions are presented in more detail highlighting parallels with better studied related constructions. Section 3 presents earlier accounts of these structures together with a brief discussion of covert modality and clausal transparency. Section 4 refines the earlier accounts and presents the main proposal of this paper: the raising of the embedded verb to the covert modal head indeed happens in a local domain and the differences in the Hungarian constructions can be accounted for by assuming parametric variation regarding the presence of an applicative head. Section 5 focuses on specific properties of control and the nature of the empty subject in different types of MECs and argues that a raising analysis is more suitable for one of them. Section 6 briefly summarizes our findings.

2. General overview of the data

2.1 Postverbal-only focus

To my knowledge it was Csaba Olsvay (p.c.) who first emphasized the importance of the postverbal-only focus data as potential counterargument to Szabolcsi's (2005, 2009a; b) account of embedded infinitival clauses with nominative subjects (3a). These constructions have a special signature: they show a kind of overt DP/PRO alternation where what is usually the obligatorily controlled PRO in a control infinitive (3b) is realized in the form of an overt DP in the left periphery of the embedded clause. Summarizing briefly, Szabolcsi claims that the nominative DP with a focus interpretation (*csak ő* 'only he/she in (3)) is the subject of the infinitive that appears in the FocusP (FocP) of the infinitival clause.[1]

1. The fact that the infinitive and the *only*-DP are adjacent in (3a) (as opposed to (3b)) indicates that the *only*-DP is indeed in the directly preverbal focus position of the embedded clause.

(3) a. Péter nem akart [csak ő men-ni busz-szal]
Peter not want.PST.3SG only he.NOM go-INF bus-INSTR
'Peter didn't want to be the only one to take the bus.'
b. Péter$_i$ nem akart [PRO$_i$ busz-szal men-ni]
Peter not want.PST.3SG bus-INSTR go-INF
'Peter did not want to go by bus.'

Indeed, if it is possible to have a postverbal focus in a monoclausal construction such as (1a), Szabolcsi's claims for the *only*-DP of Example (3) as belonging to the infinitive are substantially weakened. Szécsényi (2018a) demonstrates parallels between the Szabolcsi-sentences and the postverbal-only focus construction. Here let's focus on one of the arguments to reinstantiate the claim that the exceptional nature of the postverbal-only focus construction is only apparent. The two sentences actually have very similar underlying representations, which is to say that Szabolcsi's account can be maintained.

Crucial evidence comes from scope interaction. In this regard the two sentences behave on a par, whereby scope relationships are reflected in the surface ordering of constituents. Hungarian is well known for this kind of mapping of scope readings to linear order. What we can see in (4) is the biclausal construction discussed by Szabolcsi (2005, 2009a; b) with different scope interpretations regarding negation and *only*-focus. In order to account for why this pattern is not more frequently attested in the languages of the world Szécsényi (2018a; b) identifies conditions regarding the size of the embedded infinitival clause that relatively few languages meet: the scope interpretation of (4a) hinges on the presence of a left periphery in the infinitival clause where the *only*-focus can appear in the scope of matrix negation.

(4) a. Péter$_i$ nem akar-t csak ő$_i$ men-ni busz-szal.
Peter not want-PST.3SG only he.NOM go-INF bus-INSTR
'Peter didn't want to be the only one to take the bus.' negation >> *only*
b. Csak Péter nem akar-t busz-szal men-ni
only Peter.NOM not want-PST.3SG bus-INSTR go-INF
'Only Peter didn't want to take the bus.' *only* >> negation

Szabolcsi (2009a; b) discusses further evidence for the *only*-DP being the subject of the infinitival clause: in this obligatory control construction the nominative DP can only be a pronoun.

Interestingly, when we factor in scope in the postverbal-only seemingly monoclausal sentences, we find a similar alternation (5a, b) as far as scope interaction is

concerned. (5c) has been added to show that in the absence of negation postverbal focus indeed leads to ungrammaticality.[2]

(5) a. Nem esz-ek csak én desszert-et.
not eat-1SG only I.NOM dessert-ACC
'I am not **willing to/going to** be the only one who eats dessert.'
negation >> *only*

b. Csak én nem esz-ek desszert-et.
only I.NOM not eat-1SG dessert-ACC
'It is only me who does not eat dessert.' *only* >> negation

c. *Esz-ek csak én desszert-et.
eat-1SG only I.NOM dessert-ACC

However, as we have seen before, there is an additional meaning component appearing in the sentence with postverbal-only focus (5a). As the translation indicates, a volitional meaning, absent in (5b), emerges in this case. Explaining its source is one of the main aims of this paper. In order to do so, we consider a better studied construction type in the next section: modal existential wh-constructions, which also have a covert modal component.

2.2 Modal existential wh-constructions

Cross-linguistically, and in Hungarian as well, modal existential wh-constructions (MECs) come in different forms.[3] The sentences in (6) show some of the variation. Hungarian MECs, as discussed in Lipták (2003) have two major classes: those with infinitival (6a, b) or subjunctive (6c) embedding. When the MEC is in the subjunctive mood, the form of the *wh*-word can be either interrogative or relative, in the latter case appearing with an *a-* relativizing prefix added to the *wh*-root (6c).

(6) a. (Nekem) van mi-t olvas-n-om.
I.DAT be what-ACC read-INF-1SG
'I've got something to read./There is something that I can read'

b. (Nekem/PRO_{arb}) nincs mi-t ten-ni.
I.DAT NEG.EXIST what-ACC do-INF
'I've got nothing to do.' OR 'There's nothing to do.'

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2. Szabolcsi used similar sentences to emphasize the ban on postverbal-only focus in Hungarian. While postverbal focus is not impossible, it is contingent on the presence of a preverbal one.

3. For an extensive discussion of the possible patterns see Šimík (2011).

c. (?Nekem/?Én) nincs (a-)mi-t olvas-sak.[4]
I.DAT/NOM NEG.EXIST REL-what-ACC read-SBJV.1SG
'I've got nothing to read.'

As indicated by the examples in (6a, b), infinitival MECs can differ in whether the infinitive is inflected or not. When the infinitive is not inflected and there is no overt DP subject present in the sentence, the result is an arbitrary control interpretation (6b).[5] The construction is limited to a small class of selecting verbs with an availability meaning component in the languages of the world, in Hungarian MECs are available with the stative MEC-embedder *van* 'be', the dynamic MEC-embedder *talál* 'find' with a richer lexical content, and, rather idiosyncratically, the verbs *tud* 'can, be able to/know' and *bír* 'be able to',[6] which is going to become highly significant shortly.[7] Notice the special form of negation in the sentences with the

4. I am rather puzzled by the uncertainty of the case form of the subject of (6c). It seems that neither the dative nor the nominative form is fully grammatical, and the fact that Hungarian is a pro-drop language cannot account for this observation, since the judgments do not improve under focus either. It is as if grammar could not decide between the two competing forms: the dative associated with the existential part of the construction similarly to the BE-possessives of Hungarian that also have dative possessors (i) and the nominative case form associated with the subject of an embedded subjunctive clause (ii).

(i) (Nekem) nincs erkély-em.
I.DAT NEG.EXIST balcony-1SG.POSS
'I have no balcony.'

(ii) Fontos, hogy (én) nyerjek.
important that I.NOM win-1SG.SUBJ
'It is important that I win.'

5. Whether an infinitive is inflected in Hungarian or not also depends on the selecting verb. If it shows no phi-agreement with its subject (the reasons for this can vary: it can be an impersonal predicate, an evaluative one, etc.), the infinitival clause is inflected and the overt subject of the sentence has dative case. If the verb selecting an infinitival clause agrees with the subject in person and number, the infinitive is never inflected and the overt subject is nominative typically controlling a covert subject in the infinitival clause.

6. One of the reviewers asks why the discussion is limted to *tud* 'can, know', as opposed to *talál* 'find'. It is because *tud* is what is exceptional. The verb *talál* 'find' is one of the definiteness effect verbs of Hungarian, so it is not unexpected that it can be a MEC-embedder. A different form of the verb with a perfectivizing preverb, *megtalál*, can take a definite object. The reason why it is only verbs meaning 'can' that appear as extras is that they are those that can express circumstantial modality. What I find puzzling is why it cannot appear more frequently in MECs cross-linguistically.

7. As circumstantial modals, the two verbs are interchangeable, with *bír* being a slightly substandard variant of *tud*, possibly with a mildly stronger flavour of agentivity. In the rest of the paper I will use examples with *tud* only, *bír* behaves by and large the same way in MECs. However, as opposed to *tud*, it cannot ever mean 'know'.

existential verb: whereas the ordinary negative particle of Hungarian is *nem* 'not', we find the negative existential verb *nincs* 'there is not' in (7b, c). Note that in simple copular constructions a zero form of the copula is used in the present tense as opposed to the overt BE-verb of MECs, and, as it will become relevant later, also possessive constructions. The negative existential verb *nincs* therefore can be identified as the negated form of that overt BE. The dative subject can be dropped in the presence of inflection on the infinitive.[8,9]

3. Earlier accounts

In this section existing proposals for related constructions are presented focusing not only on postverbal-only focus and the analysis of MECs, but also on covert modality and clausal transparency.

3.1 Postverbal-only focus

Postverbal-only focus constructions are relatively rarely addressed in the literature. Surányi (2002) discusses examples similar to ours concluding that postverbal foci are justifiable in case the constructions with postverbal and preverbal foci result in potentially distinct interpretations (7). This also accounts for the ungrammaticality of postverbal focus in those cases when there is no difference between the interpretations of sentences with preverbal and postverbal focus (8).

(7) Surányi (2002: 44–45 (53)):
a. Nem láthatta AZT A LÁNYT.
not saw.may.PAST.3SG that the girl.ACC
'He cannot have seen THAT GIRL.' negation > epistemic modal > focus

8. Due to limitations of space this paper cannot include a cross-linguistic comparison of inflected and non-inflected infinitives in MECs. What I find especially promising is the Portuguese data: similarly to Hungarian, European Portuguese has inflected infinitives, and it is also possible to have constructions parallel to (1). However, though Portuguese has infinitival MECs, it does not have MECs with inflected infinitives, which can shed further light on the microparametric variation involved in these cases. For more information on differences between the inflected infinitives of Portuguese and Hungarian see Barbosa (2018) and Szécsényi (2018c).

9. And, somewhat unexpectedly, it is true vice versa as well: in the presence of an overt subject the agreement marker on the infinitive is optional. This variation does not affect the proposal in the present paper and is hence disregarded. For more about potential reasons see Tóth (2000: Chapter 4)

b. Nem AZT A LÁNYT láthatta.
not that the girl.ACC saw.may.PAST.3SG
'It's not that girl that he can have seen.'
negation > focus > epistemic modal

(8) a. Nem MARI ment el.
not Mary.NOM went.3SG PV
'It's not Mary who went along.'
b. *Nem ment el MARI.
not went.3SG PV Mary-NOM
'It's not the case that it's Mary who went along.'

The difference between our data and those of Surányi (200) is that modality is overtly realized in the latter. Our grammatical postverbal-only focus construction resembles the ungrammatical construction in (8b) on the surface. As we saw in (5), however, the trigger for the different orders can be identified as being scope-driven, just like in the grammatical sentence pair in (7). What needs to be accounted for, again, is how the covert modal meaning emerges.

To capture the richer meaning of (1) repeated here as (9b), Szécsényi (2018a) claims that (9b) and the Szabolcsi-sentence repeated as (9a) should be described as having similar underlying structures, where (9b) also has a biclausal underlying structure as indicated below. Sentence (9b) is a seemingly monoclausal structure, where the lower verb moves to the higher clause to support a bound empty modal as shown in (9b′) (based on Szécsényi 2018a: 498). In both of the sentences below the verbs undergo further movement to a position within the FocP of the matrix clause due to the presence of a negative particle. The exact details of negation need not concern us here.[10,11]

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10. Strictly speaking, Kenesei (2001) identifies only three verbs as auxiliaries in Hungarian not targeting an independent VP projection: *fog* 'will', *szokott* 'usually does' and *talál* 'happen to (do sg)'. Since *akar* 'want' is not one of them we place it in a VP for now in line with traditional assumptions that we have two full CPs in these constructions.

11. Responding to the reviewers' remarks: the verbs leave the matrix VP because of negation and move to the head position of a FocP, as evidenced by preverb-verb inversion elsewhere in the presence of negation and focusing, cf. (i). Since *akar* 'want' and other verbs participating in this construction do not take preverbs, this inversion cannot be made overt in examples like (9a).

(i) a. Péter el-olvasta a könyv-et.
Peter PV-read.PST the book-ACC
'Peter read the book.'
b. Péter nem olvasta el a könyv-et.
Peter not read.PST PV the book-ACC
'Peter did not read the book.'

(9) a. (=(3)) Péter nem akart csak ő men-ni busz-szal.
Peter not want.PST.3SG only he/she.NOM go-INF bus-INSTR
'Peter didn't want to be the only one to take the bus.'

a′. [$_{TopP}$ **Peter**$_j$ [$_{FocP}$ **not want**$_i$ [$_{VP/ModP}$ **t**$_i$ [$_{CP}$ [$_{FocP}$ **[only he**$_j$**]** [$_F$ **go-INF**$_k$ [$_{vP}$ **t**$_j$ **t**$_k$ **by.bus**]]]]]]]

b. (=(1)) (Én) Nem esz-ek csak én desszert-et.
I.NOM not eat-1SG only I.NOM dessert-ACC
'I am not **willing to/going to** be the only one who eats dessert.'

b′. [$_{TopP}$ **I/*pro*** [$_{FocP}$ **not eat**$_i$ **-1sg** [$_{VP/ModP}$ **t**$_i$ [$_{CP}$ [$_{FocP}$ **only I**$_j$][$_F$ **t**$_i$ [$_{FocP}$ **dessert**$_k$] … [$_{vP}$ **t**$_j$ **t**$_i$ **t**$_k$]]]]]]

Reaching the conclusion concerning the need for movement, Szécsényi (2018a) fails to consider whether this movement is possible at all, a matter far from being trivial. Under standard assumptions it is not clear how to move the embedded verb to the matrix CP observing the locality restrictions on movement. This paper is meant to fill in this lacuna in argumentation, where accounts of MECs and control (Landau 2015; Livitz 2013; Šimík 2013a; Burukina 2020) turn out to offer important insights.

3.2 Modal existential wh-constructions

Moving on to modal existential wh-constructions, Šimík (2011) highlights the fact that the class of verbs selecting MECs always contains an availability meaning component, which not only accounts for the highly restricted nature of the relevant group but also makes it predictable.[12] Typically MEC-selecting predicates are a proper subset of Szabolcsi's (1986) definiteness effect verbs (Grosu 2004). This offers a straightforward explanation for why it is often only the verbs *be* and *have* that participate in this construction with equivalents of *send, bring*, and *find* being further likely candidates in the languages of the world.

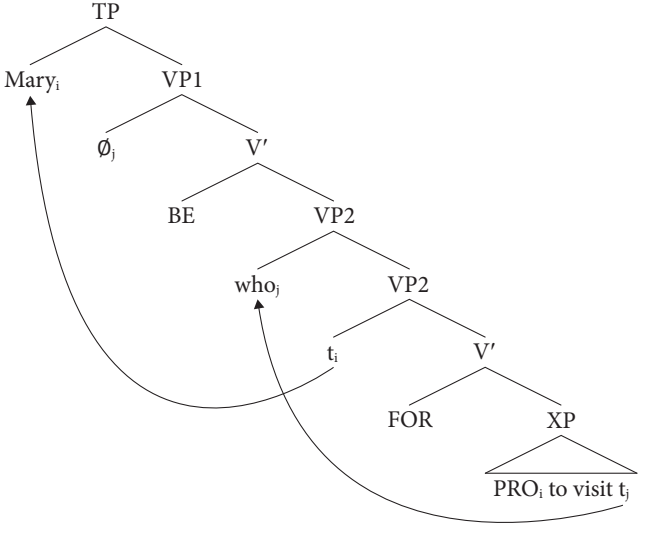
The *wh*-word of MECs does not have the usual wh-operator reading, rather, it is interpreted as an existentially construed indefinite, as also indicated in the translations. Šimík (2011) captures the essence of a MEC as a clause that always has a modal meaning of circumstantial possibility resulting from pragmatic inference that is grammaticalized in MECs with the modality ending up conventionally encoded in the selecting verb BE. In order to account for the transparency effects often but not always observed he proposes that the movement of the wh-word takes place within a domain smaller than the CP, which is far from being a trivial matter. Under such assumptions the fact that *tud* 'can/know' and *bír* 'be able to' also select MECs

12. Šimík (2013b) further refines this availability semantics and accounts for MECs in terms of affordances, where MECs specify the value of affordance variables, the events that it affords. This is what accounts for the obligatory circumstantial modality interpretation of MECs.

in Hungarian indeed seems rather idiosyncratic, since these verbs are typically not associated with an existential meaning component and do not belong to the group of definiteness effect verbs as defined by (Szabolcsi 1986). They do not trigger the definiteness effect requiring that one of their complements be an indefinite.

In subsequent work Šimík (2013a) develops a more detailed analysis of control MECs. An applicative analysis is adopted, proposing the structure in (10) for a sentence like '*Mary has who to visit*'. This is intended to account for Hungarian control MECs as well. Out of the data introduced in Section 2.2, it is the subjunctive MECs that are discussed in Šimík's work.

(10) Šimík (2013a: 1186 (44))



The main idea is that a MEC-embedding control predicate is always a combination of the impersonal availability predicate BE and the abstract predicate FOR, with the latter accounting for control itself. It is a two-argument predicate taking a property and an individual to whom that property is attributed. The specifier of this applicative head is an entity benefitting from the event described in its complement, which is formally licensed in the matrix TP (Šimík 2013a: 1185). It also serves as the controller of PRO in the embedded clause. The movement of the wh-word is motivated by semantic considerations and corresponds to lambda abstraction turning the MEC into a property. The circumstantial modal meaning results from the semantics of BE. It introduces availability, a possibility operator "ranging over a set of situations circumstantially accessible" (Šimík 2013a: 1183).

Before we move on to the proposal of the present paper, alternative ways of accounting for covert modality are considered in the next section.

3.3 Covert modality

Covert modal constructions have been identified to be present in a lot of the languages of the world (Bhatt 2006 and references cited therein), and, similarly to the cross-linguistic variation among MECs, they show systematic variation, so meaningful correlations can be established. One shared property is that they are typically associated with infinitives, or, in broader terms, non-finiteness (see e.g. Rooryck & Postma 2007 for a discussion of Dutch participle clauses) if the language under consideration has such clauses.

In Hungarian, there exists a construction with a covert circumstantial modal meaning where movement that is similar to the one proposed for postverbal-only focus constructions (see (9b')) can be assumed to take place. On the surface we seem to be dealing with a root infinitive (11), but this infinitive actually behaves like a finite verb does: among others it triggers obligatory preverb-verb inversion (11b, Bartos's (2002: 25 his Example (22b)) in the presence of focus (see (15a, b) vs. (16a, b) in Section 3.4 for comparison).

(11) a. Halla-ni a-mi-t mondok?
hear-INF REL-what-ACC say.1SG
'**Is it possible** to hear what I say?'

b. Alig érez-ni meg/*meg-érez-ni ez-t a finom remegés-t.
hardly feel-INF PV/PV-feel-INF this-ACC the gentle quiver-ACC
'This gentle quivering can hardly be felt.'

The properties of this construction are described in detail in Bartos (2002), where the author argues for the presence of a minimal covert modality layer selecting the infinitival clause without the movement of the predicate itself (12a). Szécsényi (2018a) goes one step further and claims that by assuming the movement of the predicate into the matrix clause along the lines of (12b) we can straightforwardly account for the observation that the infinitive present in the sentence as the only overt verb behaves as if it were finite. The difference between postverbal-only focus constructions and the circumstantial modals here is in the size of the moved constituent: in the case of postverbal focus only the verbal head moves, whereas in Bartos's circumstantial modality constructions the verb moves together with its infinitive marker suggesting a bigger embedded structure.[13] Again, under standard

13. Bartos (2002) leaves the infinitival verb form as an unanalyzed unit. For our purposes a FinP headed by the infinitive marker should be assumed that the verb lands in on its way to the finite clause. This can account for the different constructions where an infinitive (11) vs. just an uninflected verb (9b) undergoes movement.

assumptions according to which infinitival clauses are CPs in Hungarian, the details of this movement are not clear.

(12) a. $Mod_{circ}P$ [CP … [VP Vinf]] (Bartos 2002)
b. $Mod_{circ}P$ [$_{Mod}$ V_i [CP … [VP t_i]]] (Szécsényi 2018a)

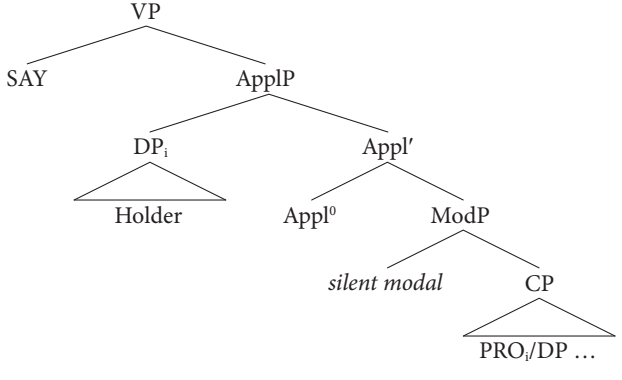
In recent work accounting for the DP/PRO alternation attested in Russian mandatives and deontic modal constructions, Burukina (2020) argues for the presence of a silent deontic modal in the complement position of mandative verbs in Russian. Such an analysis accounts for the parallels observed between mandative verbs and deontic modal constructions, where overt DPs alternate with PRO showing correlations with whether there is an overt dative DP in the matrix clause: overt embedded DPs in dative case are possible only in the absence of a matrix one. In (13), Burukina's (1a and c), we can see the mandative construction.

(13) a. Maša velela Anne$_i$ [PRO$_{i+}$ sdelat' vmeste zadanije].
Maša.NOM ordered Anna.DAT do.INF together task.ACC
'Maša ordered Anna to do the task together.'
b. Maša velela [projektu zakončit'sja k srede].
Maša.NOM ordered project.DAT complete.INF by Wednesday
'Maša ordered for the project to be complete by Wednesday.'

The source of dative case is identified as the applicative head itself with either the matrix DP or the embedded one assigned case, the latter via long-distance case assignment.

Though the modality involved is different in this case, the proposed structure is strikingly similar to Šimík's treatment of control MECs as shown in (14).

(14) Burukina (2020: 3(3))



In both of the cases there is an applicative phrase (see Pylkkänen 2008) proposed to host an argument. Burukina makes the explicit claim that "an applied object related by the applicative head to a saturated modal constituent (…) always gets interpreted as a Holder" (Burukina 2020: 12). This is different from the Beneficiary role that Šimík (2013a) identifies in MECs, but there is room for making refinements. The kind of modal that the applicative head takes as its complement should affect the role of the applied object: Obligation Holder when combining with deontic modality, Beneficiary with a circumstantial modal, etc. Future research can establish further correlations.

A more spectacular difference between the two approaches is how covert modality is accounted for. For Burukina (2020) a silent modal appears as the complement of the applicative head, for Šimík (2011) it is the consequence of the availability interpretation of the main predicate, BE. This variation will become important in accounting for the Hungarian data.

3.4 Transparency and clause size

One of the main problems with the Hungarian data concerns the size of the clauses involved: Hungarian infinitival clauses are standardly claimed to be CP-sized (Dalmi 2004; Kenesei 2005; Szécsényi 2009), undergo restructuring and establish control nevertheless. It is far from clear how to integrate the Hungarian data into cross-linguistic accounts of control systematically, assuming that only clauses that are smaller than full-fledged CPs can contain a controlled minimal pronoun (Wurmbrand 2001, 2002 and subsequent work). This section focuses on how this apparent paradox can be reconciled.

While it is true that infinitival clauses can have their own foci, and we do find *wh*-words on the edge of the embedded clause in MECs, these constituents behave differently from focus in finite clauses.

The standard test for identifying movement to FocP in Hungarian is preverb-verb inversion, which is obligatory in finite clauses. This is the position that wh-words are also assumed to target. In (15) we can see a neutral simple sentence contrasted with one containing the subject as the focus. (15c) shows that *wh*-words also trigger the same inversion. In the latter case the perfectivizing preverb *meg* has to appear in the postverbal domain.

(15) a. Péter meg-érkez-ett.
Peter PV-arrive-3SG.PST
'Peter arrived.'

b. PÉTER érkez-ett meg.
Peter arrive-3SG.PST PV
'It is Peter who arrived.'

c. Ki érkez-ett meg?
who arrive-3SG.PST PV
'Who arrived?'

In infinitival clauses preverb-verb inversion is optional with the inverted version being slightly more marked than the uninverted one (16).

(16) a. Szeret-nék CSAK HOLNAP meg-érkez-ni.
would.like-1SG only tomorrow PV-arrive-INF
'It is only tomorrow that I would like to arrive.'
b. ?Szeret-nék CSAK HOLNAP érkez-ni meg. ibid.
would.like-1SG only tomorrow arrive-INF PV

In MECs even optional preverb-verb inversion is ruled out (17) as pointed out in Surányi (2005).[14]

(17) a. Van mit meg-beszél-n-ünk.
be what-ACC PV-talk-INF-1PL
'There are things for us to discuss.'
b. *Van mit beszélnünk meg.
be what-ACC talk-INF-1PL PV

The lack of inversion can be taken as evidence for a lower position for foci and wh-words, possibly along the lines proposed in Šimík (2011). The wh-word does not move to a designated FocP, but adjoins to the edge of the verbal domain. Based on the semantics of fronted wh-words it is claimed that wh-movement applies freely: " wh-words (…) undergo operator movement to the edge of some XP, serving to lambda abstract over a variable (their trace). They literally map to a lambda operator and hence have no semantic type" (Šimík 2013a: 1179). Based on this it is claimed that syntactically wh-movement translates into adjunction as opposed to movement necessarily driven by feature-checking considerations. This opens up the possibility of analyzing embedded wh-clauses as something smaller than a CP, especially in those cases when there is no [+wh] feature involved in the derivation.[15]

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14. Though Lipták (2003) judges both orders grammatical, the author of the present paper strongly disagrees. The survey carried out in Prohászka (2019) also confirms that native speakers of Hungarian systematically judge the inverted forms ungrammatical.

15. Observations of Tabatowski (2020), according to which *wh*-words can precede infinitival topics, quantifiers and the focus in MECs, seem to undermine the proposal for a low position for the *wh*-word in MECs. Nevertheless, they are not incompatible with the adjunction analysis, but rather predicted by it: the *wh*-word adjoins to the lowest XP possible (e.g. as the scope interpretation of the sentence requires).

The relatively low position of focus in Hungarian (the position directly preceding the verb) also suggests that an account along these lines is feasible. This makes cross-clausal head-movement of the embedded verb a possibility.

3.5 Interim summary

To capture the properties of postverbal-only focus constructions and circumstantial modality clauses in Hungarian, movement of the embedded verb to a higher clause with a modal verbal head has already been proposed in Szécsényi (2018a). This section has shown that under the assumption that the embedded clauses are not CPs in spite of the presence of left peripheral constituents the proposed movement of the embedded verb can be defended.

The account of MECs proposed by Šimík (2013a) and Burukina's (2020) treatment of mandatives contain important parallels that we are going to compare with the Hungarian data in working out the details of the analysis: the applicative head that functions both as an argument taking predicate (as emphasized by Šimík) and a case assigner (as highlighted by Burukina) will be used to account for some properties of the Hungarian sentences as well.

The next section contains further details of the proposal for the Hungarian data.

4. The proposal

4.1 Verb movement and covert modals

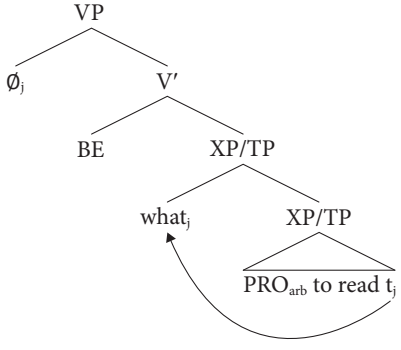
Relatively few adjustments are required at this point to account for Hungarian MECs and postverbal-only focus constructions. I claim that Hungarian MECs involve a novel derivational path compared with what is discussed in Šimík (2011, 2013a). On the one hand there is what can be considered the standard pattern, but in Hungarian the circumstantial modal *tud* 'can, know' can also be realized overtly. I assume that in the latter case the modal verb selecting the non-finite clause headed by *tud* 'can, know' triggers the movement of *tud* to the higher existential matrix clause. This way the analysis of postverbal-only focus constructions and *tud*-MECs converges nicely: in both cases we have an embedded verb undergoing movement to the matrix clause to support a bound empty modal verb.

The details of the analysis are as follows: for MECs with the existential verb we can use the analysis proposed by Šimík (2013a) containing a FOR component functioning as an argument-selector applicative head. This is very similar to what Burukina (2020) proposes for Russian mandatives. This also helps us distinguish impersonal MECs from MECs with a subject argument the same way as proposed

in Šimík: whereas in impersonal MECs there is no applicative head (18), dative subjects indicate its presence (19).

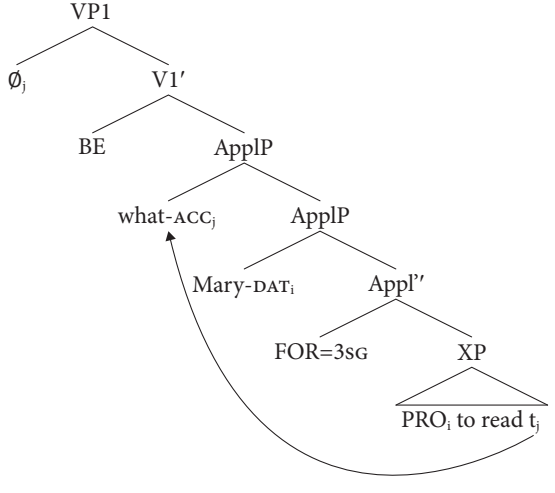
(18) a. Van mi-t olvas-ni.
BE what-ACC read-INF
'There is something to read.'

b.



(19) a. Mari-nak van mi-t olvas-ni-a.
Mary-DAT BE what-ACC read-INF-3SG
'Mary has something to read.'

b.



The inflection appearing on the infinitive can be identified as the overt realization of the applicative head triggering the movement of the infinitive to the head of ApplP. The dative subject usually undergoes further movement to the matrix Topic positions.

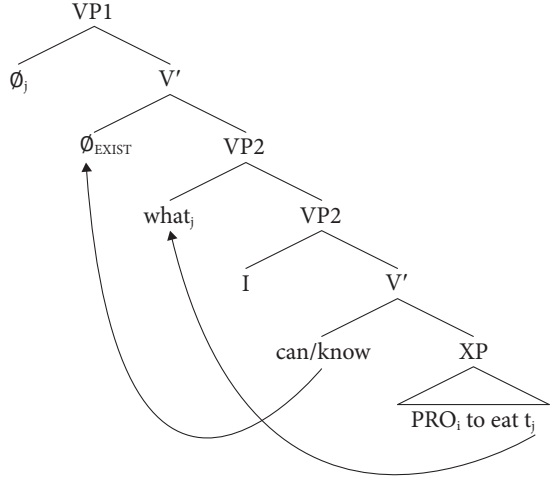
I propose that in the case of *tud*-MECs the circumstantial modal is base-generated in the position of Burukina's (2020) silent modal and then undergoes

movement to the empty zero existential followed by further movement to the TP head. Importantly, in this case, in this position, *tud* cannot mean 'know'. The two sentences in (20) have the same truth-conditional meaning. Crucially, in sentence (20b) the emphasis is on the availability of food as well, it can never mean 'I can eat something'. The difference between the two sentences is which of the verbs remains covert: the circumstantial modal in (a), existential be in (b). The structure of (20a) is analogous to (19b) with a potentially dropped *pro* subject.

(20) a. Nekem/*pro* van mi-t en-n-em.
I-DAT be what-ACC eat-INF-1SG
'There is something that I can eat.'

b. Én/*pro* tud-ok mi-t en-ni.
I-NOM can-1SG what-ACC eat-INF
'There is something that I can eat.'
never: '~~I can eat something~~.'

b′.



In *tud*-MECs the verb introduces its own argument without the need for an applicative phrase. The absence of the applicative head is supported by the case form of the argument: it receives nominative case in the TP above VP1 as opposed to the dative case assigned by the applicative head. It also serves as the controller of the subject of the infinitival clause.

Negation facts provide support for the proposed movement: the interpretation of (21a) indicates that the surface position of *tud* is actually higher than the clause directly preceding the infinitive, where it is base generated. In a sentence like (21a) negation does not directly scope over circumstantial possibility but the existential verb, just like in (21b).

(21) a. Nem tud-ok mi-t en-ni.
not can-1SG what-ACC eat-INF
'There's nothing that I can eat.' never '~~I cannot eat anything~~.'
negative > existential > circumstantial modality

b. Nincs mi-t en-n-em.
NEG.EXIST what-ACC eat-INF-1SG
'There is nothing that I can eat.'

Admittedly, at this point it remains a question why equivalents of *tud* 'can' cannot undergo this kind of movement more frequently cross-linguistically.[16] We expect another somewhat idiosyncratic feature of Hungarian to be responsible for this. The next subsection tackles cross-clausal object agreement as a potential candidate.

4.1.1 *Agree*

Den Dikken (2018: 118), following Rackowski & Richards (2005) highlights the role of Agree as a key factor in transparency: "the active ingredient in determining whether a particular domain Δ is an absolute island or not is its participation in an Agree relation with an asymmetrically c-commanding head π: whenever Δ Agrees with π, it is not an absolute island; whenever it does not Agree with π, it is."

Crucially for us, a Hungarian verb selecting an object always seems to agree with it, be it nominal or clausal. Object agreement depends on the definiteness of a nominal object (22a, b),[17] whereas in case of clausal agreement finiteness is the main factor. Descriptively speaking, with infinitival clauses we use the indefinite/unmarked agreement form on the selecting verb (23a), whereas with finite clauses the definite agreement form is used (23b, c).[18]

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16. Šimík (2011: 153) discusses similar Italian data concluding that in MECs can/know has to be a restructuring verb.

17. In retrospect it seems important to highlight the fact that we always have the indefinite object agreement form of the verb *tud* 'can' in the MECs. This automatically follows from the obligatorily indefinite interpretation of the wh-word in this construction. An embedded question after *tud* 'can, know', however, triggers definite agreement on the selecting verb, cf. the contrast between (i) and (ii).

(i) Tud-ok mi-t en-ni.
can-1SG.INDEF what-ACC eat-INF
'There is something that I can eat.'

(ii) Tudom, (hogy) mit egyek.
know-1SG.DEF that what-ACC eat-INF
'I know what to eat.'

18. Upon closer inspection, however, finite clauses may turn out not to agree with the selecting verb at all. Rather, agreement can be argued to be with an optional proleptic pronoun in accusative case. For the purposes of the present paper it is immaterial which account we adopt.

(22) a. Szeretné-k egy könyv-et.
would.like-1SG.INDEF a book-ACC
'I would like a book.'
b. Szeretné-m a könyv-et.
would.like-1SG.DEF the book-ACC
'I would like the book.'

(23) a. Olvasni szeretné-k.
read-INF woul.like-1SG.INDEF
'I would like to read.'
b. (Azt) szeretné-m, hogy Péter elolvas-son
that/it-ACC would.like-1SG.DEF that Peter read-3SG.SBJV
egy könyv-et.
a book-ACC
'I would like Peter to read a book.'
c. Tudom (azt), hogy Péter el-olvas-ott egy könyvet.
know-1SG.DEF that/it-ACC that Peter PV-read-3SG.PST a book-ACC
'I know that Peter read a book.'

There is further variation possible when verbs select infinitives, which is also one of the transparency diagnostics: when an infinitival complement clause has an object of its own the selecting verb agrees with the object of the infinitive (Szécsényi & Szécsényi 2017, 2019):

(24) a. Szeretné-*k* olvasni *egy* könyvet.
Would.like-1SG.INDEF read-INF a book-ACC
'I would like to read a book.'
b. Szeretné-*m* olvasni *a* könyvet.
Would.like-1SG.DEF read-INF the book-ACC
'I would like to read the book.'

As sentence (23b) indicates, a subjunctive CP in Hungarian is not a domain for this kind of Agree. The embedded clause contains an indefinite object, but the selecting verb still has a definite agreement form, solely determined by the finiteness of the complement clause. The ban on agreement with the object of the embedded verb can be accounted for under the assumption that object agreement does not make the embedded clause transparent when it is finite, as the finiteness feature of the clause itself triggers definite agreement, making the complement clause an opaque domain for further Agree operations.

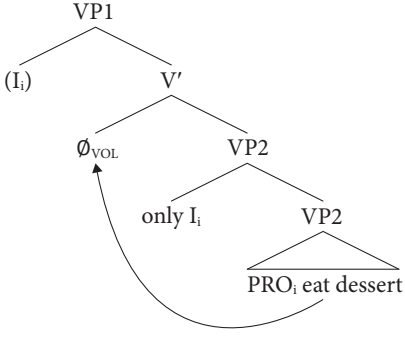
Object agreement is not frequently attested in the languages of the world, not to mention object agreement with clauses. Szécsényi and Szécsényi (2017, 2019) make the explicit claim that in order for agreement to take place the infinitival clause itself needs to be equipped with agreement features and cross-clausal agreement is not

the result of long-distance Agree in Hungarian.[19] If something like object agreement is a condition for clausal transparency, possibly even irrespective of clause size, it is easier to see why it is not the default option cross-linguistically.

To complete this section let us consider the derivation for the relevant part of the postverbal-only focus construction.

(25) a. (Én) nem esz-ek csak én desszert-et.
I-NOM not eat-1SG only I.NOM dessert-ACC
'I am not willing to be the only one who eats dessert.'

b.



The head of the matrix verb is a covert volitional verb triggering the movement of the embedded verb. The *only*-focus is in the scope of negation so it is confined to the lower clause. Since it is focused, this PRO cannot remain covert. The controller is the subject of the volitional verb case-licensed in the TP.

The properties of the four constructions are summarized in Table 1 below. The wh-word and the focused subject are adjoined to the lowest embedded clause everywhere.

---

19. One of the arguments is that non-agreeing infinitives block object agreement in multiple infinitival constructions, as shown by the contrast between (ia, b) with a sequence of agreeing infinitives and (ic, d) containing a non-agreeing one, *fél* 'be.afraid':

(i) a. Péter fog/*fogja akarni nézni egy filmet.
Peter will.INDEF/will.DEF to.want to.watch a film.ACC
"Peter will want to watch a film."

b. Péter *fog/fogja akarni nézni a filmet.
Peter will.INDEF/will.DEF to.want to.watch the film.ACC
"Peter will want to watch the film."

c. Péter fog/*fogja félni nézni egy filmet.
Peter will.INDEF/will.DEF to.be.afraid to.watch a film.ACC
"Peter will be afraid to watch a film."

d. Péter fog/*fogja félni nézni a filmet.
Peter will.INDEF/will.DEF to.be.afraid to.watch the film.ACC

Table 1. Properties of MECS and postverbal-only focus constructions

	Impersonal BE-MEC	**BE-MEC with an inflected infinitive**	**TUD-MEC**	**Postverbal-only focus**
matrix subject	empty	overt: dative DP	overt: nominative DP	overt: nominative DP
embedded infinitival subject	PRO_{arb}	OC PRO (but see Section 5.1 for raising MECs)	OC PRO	OC PRO, (overt in the focus position)
Applicative head present	no	yes	no	no
Modality involved	circumstantial possibility	circumstantial possibility	circumstantial possibility	volition
realization of modal	covert	covert	overt	covert

5. Control and raising MECs in Hungarian

After the discussion of the structural representations of MECs and postverbal-only focus constructions in Section 4, this section focuses on control. The Hungarian facts indicate that a property analysis of obligatory control is on the right track (Šimík 2013a; Landau 2015).

Most Hungarian MECs are obligatory control constructions and, as we have seen, the biclausal derivation of postverbal-only focus constructions also has to involve control to account for the restriction on the interpretation of the subject of these sentences: the subject of the matrix clause and that of the embedded clause have to be coreferent (26).

(26) $[_{CP}\ [_{NegP}$ **not eat$_i$ -1sg** $[_{vP1}$ **t$_i$** $[_{vP2}\ [_{vP2}$ **only I$_j$ …** $[_{vP}$ **PRO$_j$ t$_i$ dessert**]]]]]]

In discussing similar data, Livitz (2013) assumes that the overt subjects of the infinitival clause are equivalent of PRO, a minimal pronoun, and what forces the pronunciation of the element is the fact that they are associated with a focus feature.

The standard analysis of MECs is in terms of obligatory control cross-linguistically (Šimík 2011; Pancheva-Izvorski 2000) with occasional instances of independent reference in a subjunctive clause. Though subjunctive mood is a possibility in Hungarian, such MECs are also always obligatory control constructions, their subjects being referentially dependent on the matrix subject (27).

(27) a. *Nekem nincs (a-)mi-t egy-él.
I.DAT NEG.EXIST REL-what-ACC eat-SUBJ.2SG
Intended meaning: 'I have nothing for you to eat.'
b. Péter$_i$ nincs (a-)kit {PRO$_i$/*pro$_j$/Mari} meghív-jon.
Peter(-DAT) NEG.EXIST REL-what-ACC PRO/pro/Mary invite-SBJV.3SG
'Peter has no one who he can invite.'
Not available: 'Peter has no one who Mari could invite.'

The analysis of Hungarian infinitival MECs is not that straightforward, which is partly due to the fact that they come in two forms: inflected infinitives and uninflected ones. In the former case there seems to be evidence for a raising analysis coming from parallels with possessive constructions showing the same agreement marking as inflected infinitives.

5.1 Control vs. raising

In order to distinguish base-generation from movement, É. Kiss (2002, 2014) and Dalmi (2020) highlight a difference between possessive nominals and clauses regarding agreement: when the possessor is a third person plural lexical DP, plural agreement is ruled out within the DP (28a). In possessive clauses either singular or plural agreement is possible (28b).

(28) a. A fiúk/A fiúk-nak a kutyá-ja/*kutyá-juk.
the boys.NOM/the boys-DAT the dog-3SG/dog-3PL
'The boys' dog(s)'
b. A fiúk-nak van kutyá-ja/kutyájuk.
The boys-DAT be.3SG dog-POSS/dog-3PL.POSS
'The boys have a dog/dogs.'

Based on these observations É. Kiss introduces the following diagnostic for different possessive constructions: structures with third person plural lexical possessors that do not agree must contain the possessor as base-generated within the possessive DP followed by a raising operation (29a). The presence of plural agreement is taken as evidence for external base-generation as in (29b).

(29) a. A fiúk-nak$_i$ fáj a t_i fej-e.
the boys-DAT hurts the head-POSS
'The boys' heads hurt.'
b. A fiúk-nak fáj a *pro* fej-ük.
the boys-DAT hurts the head-POSS.3PL
'The boys' heads hurt.' (É. Kiss's (2014: (17))

Using this diagnostic for the infinitival MECs of Hungarian we see that they pattern with (29b), with obligatory plural agreement (30).

(30) A fiú-k-nak van mi-t olvas-ni-uk/*olvas-ni-a.
the boys-PL-DAT is what-ACC read-INF-3PL/read-INF-3SG
'There is something that the boys can read.'

Based on É. Kiss (2014), this observation can be used to rule out an account in terms of raising, since under a raising analysis a third person singular verb form should also be possible. However, instead of the small *pro* analysis of É. Kiss, we need to propose a PRO in the infinitival clause to account for the obligatory referential dependency. It has an important consequence for the analysis of possessive predication as well, indicating that the different derivations of possessive sentences discussed in É. Kiss should actually be complemented by a control structure containing a PRO with a referential dependency between the possessor and the pronominal within the DP.

However, there is evidence for a raising analysis as well. This comes from the domain of infinitival embedding. Sentences with uninflected infinitives selected by verbs such as *akar* 'want' or *szeret* 'like' are unequivocally control constructions: the selecting verb theta-marks its subject and controls the PRO subject of the infinitival clause (31).

(31) (Mi_i) szeret-ünk [PRO_i olvas-ni/*olvas-nunk].
We like-1PL read-INF/read-INF.1PL
'We like reading.'

Tóth (2000), however, argues that the inflection of inflected infinitival constructions assigns structural dative case to the subject in Hungarian clause-internally. This clearly suggests a raising analysis for MECs as well, where the existential verb has a dative subject an inflected infinitive complement. Is there any evidence for a raising vs. control analysis of these constructions?

This question is all the more interesting as at this point we are facing a problem similar to that of Burukina (2020): one and the same construction showing control and raising properties at the same time. Assuming an applicative head in the structure helps resolve this paradox. As shown in (19b), the PRO subject of the infinitive is controlled by the DP in the specifier of the ApplP, it is this overt DP that can undergo raising. The source of the mixed properties is these different components within the structure: the controller is indeed outside the infinitive accounting for the obligatory plural agreement.

The syntax of MECs also seems to support a raising analysis based on an important observation Šimík (2013a) makes, which he labels the PRO-wh generalization: "Whenever a control MEC has a referentially independent subject, the subject is a wh-expression" (Šimík 2013a: 1174). This is used as a crucial component in arguing for an account of PRO as a lambda-abstractor, similarly to the analysis of control in Landau (2015). The following Hungarian and Spanish examples are discussed (32):

(32) a. Nekem van (a-)ki elmenjen a postá-ra.
I-DAT be (REL-)who.NOM go.3SG.SBJ the post.office.to
'I have somebody who can go to the post office.'
b. No tengo quién me ayud-e/*ayud-ar.
NEG have.1SG who me.DAT help-3SG.SBJ/help-INF
'I don't have anyone who can help me.'

In accounting for the requirement for subjunctive mood in the Spanish case Šimík claims that it is to do with the formal (case) licensing of the wh-word: the subjunctive mood emerges exactly when the subject of the MEC is overtly realized and as such needs to be licensed. However, if Tóth (2000) is right, and inflected infinitives can assign structural dative case to their subjects, there should not be any difference between the judgements on Hungarian MECs depending on whether the MEC is infinitival or subjunctive: the sentence in (33a) should be grammatical since the subject is case-marked clause internally, contrary to fact. This, however, can also be taken as evidence for a raising derivation of MECs with a wh-subject in inflected infinitives: if the dative marked subject originates in the infinitival clause as indicated in (33b), the ungrammaticality of (33a) is accounted for: a different subject is not possible in the embedded clause. This way Šimik's PRO-wh generalization can also be maintained.

(33) a. *Nekem van ki-nek elmen-ni-e a postára.
I.DAT be who-DAT go-INF-3SG the post.office.to
Intended meaning: 'There is someone who can go to the post office for me.'
b. (Nekem$_i$) van [miért t_i elmen-nem a postára]
I.DAT be why go-INF.1SG the post.office.to
'I have a reason to go to the post office.'

It is also correctly predicted that (34), where the subject of the MEC is a wh-word without there being another subject in the matrix clause is grammatical:

(34) Van ki-nek elmen-ni-e a postá-ra.
is who-DAT go-INF-3SG the post.office-to
'There is someone who can go to the post office.'[20]

The fact that inanimate subjects are also possible in this construction ((35), (36)) may further confirm the assumption that a raising is an available option to derive MECs with inflected infinitives.[21]

(35) A vonat-nak nem volt miért kés-ni-e (de mégis késett).
the train-DAT not was why be.late-INF-3SG (but still was.late)
'There was no reason for the train to be late (but it was still late).'

(36) A szél-nek nincs mi-t elfúj-ni-a.
the wind-DAT NEG.EXIST what-ACC away-blow-INF-3SG
'There is nothing that the wind can blow away.'

6. Conclusion

In this paper we have discussed two seemingly unrelated constructions of Hungarian: postverbal-only focus and modal existential wh-constructions. They have been argued to share properties in terms of control and covert modality. An applicative-based component of the analysis not only accounts for the differences between subjects in dative and nominative case, but also resolves the control vs. raising paradox. The suggested analysis in terms of movement of an embedded verb into the matrix clause is in line with independently established properties of Hungarian. The proposal in terms of smaller clause size has the advantage of fitting the Hungarian data into cross-linguistic patterns of control, also resulting in a more explanatory account of clausal transparency form a cross-linguistic perspective.

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20. Notice that the inflection on the infinitive in (27) and (28) unequivocally indicates that the dative wh-word is a subject and not e.g. a beneficiary argument with inherent dative case, as in (i). Actually, this sentence is ambiguous. Due to the fact that in the presence of an overt dative subject the agreement morpheme on the infinitive can be dropped, the wh-word (less dominantly) can also be understood as referring to the subject of the infinitive (when the beneficiary argument is contextually salient and hence can be left implicit).

(i) Van kinek odaadni a csoki-t.
be who-DAT give-INF the chocolate-ACC
'There is someone the chocolate can be given to.'

21. But see Šimík's (2013a: 1189–90) reservations regarding the reliability of such data.

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PART II

Non-canonical control in adjunct clauses

Event control

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In this paper, we argue that a set of small clause adjuncts involves a control relation with the event in the main clause functioning as controller – we call this instance of control event control. First, we clarify the empirical picture by looking at data from German, Norwegian, and English. Second, we show that event control is obligatory control and therefore suggest that it should be syntactically licensed in the same way. Our theoretical account is based on ideas by Whelpton (1995, 2002), Lohndal (2014), Fischer (2018), and Høyem (2018, 2019), and we ultimately propose that event control is syntactically licensed under upward Agree with underspecified PRO as probe and a Davidsonian event argument in the main clause as goal.

1. Introduction

Many languages, including English, German, and Norwegian, employ non-finite clauses (besides finite clauses) as adverbial adjuncts, for instance infinitival, participial, and other small clause adjuncts. The subject of these adjunct clauses is left unexpressed and must usually be interpreted co-referentially with the subject or object of the matrix clause, known as subject or object control in the literature. There is, however, another possible control relation that, to our knowledge, has been overlooked or at best marginalized in the recent control debate, namely event control, cf. (1) and (2):

(1) [Unknown to Mr. Mori,] the other big trading houses were also putting together a consortium. (cf. Kortmann 1991: 73; Kortmann 1995: 207)

(2) [Als letzten Arbeitsgang] hat Peter den Boden gebohnert.
as last work.task has Peter the floor waxed
'As a last step, Peter waxed the floor.' (cf. Pütz 1988: 199)

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As illustrated in (3) and (4), the adjuncts in (1) and (2) can be paraphrased using a relative clause (cf. (3b) and (4b), respectively) or an independent finite clause (cf. (3a) and (4a), respectively).

(3) a. The other big trading houses were also putting together a consortium. *This* was unknown to Mr. Mori.
b. The other big trading houses were also putting together a consortium, *which* was unknown to Mr. Mori.
c. *this/which* = the other big trading houses were also putting together a consortium

(4) a. Peter hat den Boden gebohnert. *Das* war der letzte Arbeitsgang.
Peter has the$_{ACC}$ floor waxed this was the$_{NOM}$ last work.task
'Peter waxed the floor. This was the last step.'
b. Peter hat den Boden gebohnert, *was* der letzte
Peter has the$_{ACC}$ floor waxed which the$_{NOM}$ last
Arbeitsgang war.
work.task was
'Peter waxed the floor, which was the last step.'
c. *das/was* = den Boden bohnern
that/which = the$_{ACC}$ floor wax$_{INF}$

This reveals two things: (i) although the adjuncts in (1) and (2) might not look like clauses at first sight, they ultimately turn out to be clause-like, involving PRO as empty subject;[1] (ii) the subject, which must be expressed overtly in the examples above (as *this, which, das, was*), refers to the event expressed in the main clause. As a consequence, event control does not only classify as a non-canonical instance of control because the controllee is part of a seemingly non-clausal structure; besides, it also involves an unusual type of controller, namely the event of the main clause. So why is this control, after all? What all (obligatory) control relations have in common is the following: there is an underspecified covert argument whose reference is identified by an accessible argument in the matrix clause – this relationship is what we call control. Standardly, the range of controlling arguments includes subjects, objects, or implicit agents (yielding subject, object, or implicit agent control, respectively); in this paper, we argue that this set should be extended by one further potential controlling argument, namely a Davidsonian event argument (yielding event control). Like other arguments, events are referential entities that can be represented by overt pronouns, as shown, for instance, in (3a)/(4a), where *this* and

1. Note that these adjuncts express the same predication relation as their finite counterparts and contain everything a full clause contains except a lexical subject and a finite verb.

das ('this') refer to the events in the preceding sentence. If this predication relation is expressed with a small clause (as in (1) or (2)), the overt pronoun referring to the event must be replaced by a covert pronoun that is controlled by the event argument. We argue that this element is PRO – a covert pronoun whose interpretation hinges on an argument in the matrix clause and which is underspecified in such a way that it is compatible with both, a DP argument as a controller as well as an event argument.

In the literature, this type of control seems to have faded out of the debate since the dispute on control into rationale clauses (RC) in the 80s and 90s (cf. Landau 2000, 2013), with one camp arguing for the implicit agent as the controller of PRO in RCs adjoined to a passive or impersonal copula matrix clause (Chomsky 1981; Manzini 1983, 1986; Manzini 1983, 1986; Jaeggli 1986; Roeper 1987; Clark 1990; Higginbotham 1999), cf. (5), and another one arguing for the matrix event as controller of PRO (Williams 1985; Lasnik 1988; Grimshaw 1990; Whelpton 1995), cf. (6).

(5) The boat was sunk [in order to collect the insurance]. (cf. Manzini 1983)

(6) Grass is green [to promote photosynthesis]. (cf. Williams 1974)

While examples like (5) clearly involve some implicit agent (i.e. somebody who wants to collect the insurance), this is much less clear in (6). At best, it could be argued that it is evolution or God "under whose control is the circumstance 'grass is green'" (Williams 1985: 311); but such a purposeful agent cannot be the underlying subject in examples like (1) or (2) – here, the covert subject can only refer to the event denoted in the matrix clause. Hence, we argue that event control must be distinguished from implicit agentive control and is a control type of its own.

The paper is structured as follows: Section 2 presents empirical evidence that the different types of event-controlled adjuncts are found in two different syntactic domains and are adjoined to CP and vP/VP, respectively. In Section 3, it is argued that event control can be analyzed within the hybrid theory of control (see Fischer 2018), and Section 4 provides a brief conclusion.

2. Empirical evidence

Our data are taken from German, Norwegian, and English and comprise four adjunct types: appositional nominative DPs (Germ. *Satzappositionen*) (= type A), adverbial small clauses headed by the particle *als/som/as* (= type B), adverbial present and past participle constructions (= type C), and adverbial infinitives headed by *um/for/to* (= type D) (see (7)–(10) below).[2] To highlight event control visually, we use the notation PRO_e in our examples;[3] but keep in mind that this index is only added for increased clarity and is not an inherent feature of PRO. We take PRO to be the same covert element in all control constructions and assume that its underspecification allows it to be controlled by different entities – including event arguments.

(7) TYPE A: Appositional (nominative) DPs

a. *German*
Martin will nun doch auswandern, [PRO_e ein schwerer Entschluss].
Martin wants now still emigrate a_{NOM} difficult decision
'Martin wants to emigrate after all, a difficult decision.'
(cf. Duden 2005: 911)

b. *Norwegian*
Jon fortalte at han hadde sett ville indianer i Amerika, [PRO_e
Jon told that he had seen wild Indians in America
en aldeles utrolig historie].
a completely amazing story
'Jon told that he had seen wild Indians in America, a completely amazing story.'

c. *English*
He went to see her at the hospital, [PRO_e a bad idea]. (Andrew Weir, p.c.)

(8) TYPE B: Adverbial small clauses headed by *als/som/as*

a. *German*
[PRO_e Als letzten Arbeitsgang] hat Peter den Boden gebohnert.
as $last_{ACC}$ work.task has Peter the_{ACC} floor waxed
'As the last task, Peter waxed the floor.'

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2. Note that we do not intend to provide an exhaustive overview of event control and that there might well be further contexts in which event control can be found. The goal of this paper is to draw attention to these data in the first place and to show that this is a robust phenomenon which deserves more attention. Hence, the four types of adjuncts we start out with only represent a sample of a potentially bigger set of environments in which event control could occur.

3. In the literature, this notation can be found, for instance, in Whelpton (1995, 2002), Eide (1996), Flaate (2007).

b. *Norwegian*
[PRO$_e$ Som kompensasjon] fikk de møte kapteinen
as compensation$_{\text{INDF}}$ were.allowed they meet captain$_{\text{DEF}}$
på skipet.
on ship$_{\text{DEF}}$
'As a compensation, they got to meet the captain of the ship.'

c. *English*
The Six agreed to draft a treaty on these lines, but [PRO$_e$ as a compromise] de Gaulle was asked to accept that the Atlantic alliance with America should be safeguarded and that 'Community co-operation' on economic issues in the EEC should continue to be developed. (BNCW F9P 820)

(9) TYPE C: Adverbial present and past participle constructions

a. *German*
Die erste Plauderstunde von St. Hildegard findet nicht, [PRO$_e$
the first discussion.session from St. Hildegard takes not
wie irrtümlich gemeldet], am heutigen Dienstag statt.
as wrongly reported on today$_{\text{ACC}}$ Tuesday place.
'The first discussion session at St. Hildegard will not, as wrongly reported, take place on Tuesday.' (cf. Høyem 2019: 509)

b. *Norwegian*
[PRO$_e$ Passende for anledningen] var begge kledd i svart.
fitting for occasion$_{\text{DEF}}$ were both dressed in black
'Befitting the occasion, they were both dressed in black.'

c. *English*
The siren sounded, [PRO$_e$ indicating that the air raid was over].
(cf. Kortmann 1991: 8; Quirk et al. 1985: 1122)

(10) TYPE D: Adverbial infinitives headed by *um/for/to*

a. *German*
Gras ist grün, [PRO$_e$ um Photosynthese zu begünstigen].
grass is green for photosynthesis to promote
'Grass is green to promote photosynthesis.'

b. *Norwegian*
Gresset er grønt [PRO$_e$ for å lokke til seg biene.]
grass$_{\text{DEF}}$ is green for to call to REFL bees$_{\text{DEF}}$
'Grass is green to lure the bees.'

c. *English*
John$_i$ introduced Sally to Mary [PRO$_e$ to give him$_i$ the chance of meeting Mary's friend, Rachel]. (cf. Whelpton 2002: 198)

Since these adjuncts may contain a range of different adverbials and can be substituted by equivalent finite adverbial clauses (cf. Brodahl 2016, 2018; Flaate 2007; Høyem 2015, 2019; Høyem & Brodahl 2019), we argue that these adjuncts are small clauses with PRO as syntactic subject.

In the following, we will present syntactic evidence that these adverbial clauses differ with respect to their external syntax and adjoin to CP and vP/VP, respectively. In fact, they seem to behave like Haegeman's peripheral vs. central adverbial clauses (Haegeman 2012: 149ff.; see also Frey & Truckenbrodt 2015). Based on their syntactic-semantic behavior concerning scopal relations (negation, coordination, co-occurrence) and binding, we thus argue that appositional nominative DPs (type A) are adjoined in the CP domain, whereas the others (type B, C, D) are adjoined to vP/VP (cf. also Høyem 2019). We will explore this in detail in the following sections.[4]

2.1 Scope: Negation, co-occurrence, coordination

According to Haegeman (2012: 178–181), central adverbials may be in the scope of matrix negation, while peripheral adverbials cannot. This dichotomy is attested among the adjuncts discussed here: sentence appositions (type A) always take scope over negation, as in (11), while type B, C, and D adjuncts can be in- or outside the scope of matrix negation, cf. (12).[5]

(11) *Type A adjuncts > negation*
He did not visit her at the hospital, [PRO_e a bad idea].
= It was a bad idea that he did not visit her at the hospital.
≠ It was not the case that it was a bad idea that he visited her at the hospital.

4. In fact, these positional differences between appositional adjuncts and the other three types might be an indication of a more fine-grained system which distinguishes between event and propositional control, suggesting that events control adjuncts in the verbal domain, whereas propositions control appositional adjuncts in the CP domain. In the literature, allusions to both can be found: Fabricius-Hansen and Haug (2012: 40; 143), for instance, also use the term event control for control "by that matrix event itself", while Kortmann (1991: 72) suggests that "the whole matrix proposition may serve as the controller of a given free adjunct".

Semantically, propositions are more complex than events, which fits nicely with the observation that they control into higher adjuncts; but from a syntactic perspective, the licensing mechanism is in both scenarios basically the same, as we will discuss in more detail in Section 3.2.2. This is why we generally use the term event control as an umbrella term for both subtypes and leave a more nuanced semantic analysis for future research.

5. For reasons of space, we do not provide data for all three languages with all types of adjuncts.

(12) *Type B, C, D adjuncts < > negation*

a. *English* (type B)
She did not eat the fish [PRO_e as a compromise].
= It was a compromise that she did not eat the fish.
= She ate the fish, not as a compromise (but because she loves fish).

b. *German* (type C)[6]
[PRO_e Dem Verkehrsabkommen entsprechend] stellten sie die A81
the$_{DAT}$ transport.agreement corresponding made they the A81
nicht fertig.
not ready.
'They did not finish the A81 according to the transport agreement.'
= It was in accordance with the transport agreement that they did not finish the A81.
= They did not finish the A81 according to the transport agreement (but according to their own preferences).

c. *Norwegian* (type D)
Jon bruker ikke såpe [PRO_e for å spare penger].
Jon uses not soap for to save money
'Jon does not use soap to save money.'
= Jon saves money by not using soap.
= Jon does not use soap to save money (but to save the environment).

Another piece of syntactic evidence for different adjunction sites comes from coordination and co-occurrence data. According to Haegeman (2012: 164), "[c]entral adverbial clauses can only be coordinated with central adverbial clauses, and peripheral adverbial clauses can only be coordinated with peripheral adverbial clauses" since they are merged in different syntactic positions. If appositional nominative DPs (type A adjuncts) are peripheral adverbial clauses, while the other adjuncts are central ones, one would expect that the former cannot be coordinated with the latter ones, whereas it should be possible to coordinate adjuncts of type B, C, and D with each other. As the data below illustrate, this prediction is indeed borne out (for reasons of space, we do not include all combinations in all languages).

(13) a. *English (coordination of type A+B)*
*He went to see her at the hospital, [[PRO_e a good idea] and [PRO_e as a nice surprise]].[7]

---

6. This example has been taken from a data collection gathered by Kristin Klubbo Brodahl.

7. As the following examples demonstrate, each adjunct is completely fine alone:

(i) He went to see her at the hospital, [PRO_e a good idea].

(ii) [PRO_e As a nice surprise], he went to see her at the hospital.

b. *German (coordination of type C+A)*
*Peter hat [[PRO$_e$ passend zum Thema] und [PRO$_e$ eine nette
Peter has fitting to.the theme and a$_{NOM}$ nice
Überraschung]] zu Halloween einen Dracula-Kuchen gebacken.
surprise for Halloween a$_{ACC}$ Dracula-cake baked
'Peter has – befitting the occasion and a nice surprise – baked a Dracula cake for Halloween.'

(14) a. *Norwegian (coordination of type C+B)*
[[PRO$_e$ Passende for anledningen] og [PRO$_e$ som en morsom
fitting with occasion$_{DEF}$ and as a fun
overraskelse]] hadde foreldrene kledd seg ut som spøkelser på
surprise had parents$_{DEF}$ dressed REFL out as ghosts at
barnas Halloween-fest.
childrens Halloween-party
'Befitting the occasion and as a funny surprise, the parents dressed up as ghosts at the children's Halloween party.'

b. *English (coordination of type B+D)*
[[PRO$_e$ As a friendly favor] and [PRO$_e$ to give him$_i$ the opportunity to meet a nice girl]], John$_i$ was introduced to Mary.

A similar piece of evidence comes from co-occurrence data. The appositional (nominative) DPs (type A) must be adjoined higher in the clause than the other adjuncts (type B, C, D) since they always take scope over the other adjuncts, as indicated in the readings below (15a–c).

(15) a. *German (type A > type B; *type B > type A)*
[[[PRO$_e$ Als letzten Arbeitsgang] hat Peter den Boden gebohnert],
as last$_{ACC}$ work.task has Peter the$_{ACC}$ floor waxed
eine nette Überraschung].
a$_{NOM}$ nice surprise
'As the last task, Peter waxed the floor, a nice surprice.'
= That Peter as the last task waxed the floor was a nice surprise.
≠ That it was a nice surprise that Peter waxed the floor was the last task.

b. *German (type A > type C; *type C > type A)*
[[[PRO$_e$ Passend zum Thema] hat Peter zu Halloween einen
fitting to.the theme has Peter for Halloween a$_{ACC}$
Dracula-Kuchen gebacken], PRO$_e$ eine nette Überraschung].
Dracula-cake baked a$_{NOM}$ nice surprise
'Befitting the occasion, Peter baked a Dracula cake for Halloween, a nice surprise.'
= That Peter, befitting the occasion, baked a Dracula cake for Halloween was a nice surprise.
≠ That it was a nice surprise that Peter baked a Dracula cake for Halloween befitted the occasion.

c. *German (type A > type D; *type D > type A)*
[[Die Einwohner wurden in das Nachbardorf evakuiert,
the$_{NOM}$ inhabitants were in the$_{ACC}$ neighbour.village evacuated
[PRO$_e$ um eine Katastrophe zu vermeiden]], PRO$_e$ nach Angaben
for a disaster to avoid after informations
der Polizei eine äußerst vernünftige Maßnahme].
the$_{GEN}$ police a highly reasonable precaution
'The inhabitants were evacuated to the nearest village to prevent a disaster, a most reasonable precaution according to the police.'
= That the inhabitants were evacuated to the nearest village to prevent a disaster was a most reasonable precaution according to the police.
≠ That it was a most reasonable precaution according to the police that the inhabitants were evacuated to the nearest village should prevent a disaster.

2.2 Binding effects

Another major contrast between central and peripheral adjunct clauses concerns variable binding (Haegeman 2012: 179 f.; Frey & Truckenbrodt 2015: 82 f.). Interestingly, the same difference is found among the adjuncts discussed here (cf. also Høyem 2019). As can be seen in the sentences below, the quantifier phrase *jeder säumige Zahler* ('every defaulting payer') is able to bind a pronoun if the latter is part of an adverbial infinitival clause headed by *um* ('for'), cf. (16a), a small clause headed by the participle *als* ('as'), cf. (16b), or a participle construction, cf. (16c). However, if the pronoun is located inside an appositional nominative DP, variable binding is blocked (cf. (16d)).

(16) *German*
a. [Jeder säumige Zahler]$_i$ wurde angerufen, [PRO$_e$ um ihn$_i$ an die
every defaulting payer was phoned to him at the
fälligen Zahlungen zu erinnern].
due payments to remind
'Every unwilling payer was phoned to remind him of the impending payments.'
b. [Jeder säumige Zahler]$_i$ wurde angerufen, [PRO$_e$ als letzter
every defaulting payer was phoned as final
Versuch, ihn$_i$ an die fälligen Zahlungen zu erinnern].
attempt him at the due payments to remind
'Every unwilling payer was phoned as a final attempt to remind him of the impending payments.'

c. [Jeder säumige Zahler]$_i$ wurde der Reihe nach angerufen, [PRO$_e$ basierend auf der Höhe seiner$_i$ ausstehenden Zahlungen].
every defaulting payer was the order after phoned based on the height his$_{GEN}$ due payments
'Every unwilling payer was phoned, based on the amount of his outstanding payments.'

d. *[Jeder säumige Zahler]$_i$ wurde wegen ausstehender Zahlungen angerufen, [PRO$_e$ ein furchtbares Erlebnis für ihn$_i$].
every defaulting payer was because.of outstanding payments phoned a terrible experience for him
intended reading: 'Every unwilling payer was phoned because of outstanding payments, a terrible experience for every unwilling payer.'

The same holds for Norwegian and English, but for reasons of space, we will skip these data.

Following Haegeman (2012), Frey & Truckenbrodt (2015), and Høyem (2019), this must be due to different adjunction sites: only the adjuncts in (16a–c) seem to be c-commanded by the quantified phrase *jeder säumige Zahler* ('every defaulting payer'). This, again, suggests that these three adjunct types (type B, C, D adjuncts) are adjoined in the verbal domain, whereas appositional nominative DPs (type A adjuncts) must occur higher in the tree structure, namely in the CP domain.

This is furthermore corroborated by Principle C effects. If type A adjuncts are adjoined in the CP domain, i.e. above the subject, one would not expect principle C effects to arise in these adjuncts. And indeed, no such effects can be seen in the following examples taken from English. (The same holds for German and Norwegian.)

(17) He$_i$ invited the whole family for dinner, [PRO$_e$ a nice gesture by Peter$_i$].

On the other hand, if adjoined to a projection in the c-command domain of the subject, i.e. in the verbal domain, one would expect a principle C violation to arise in type B, C, and D adjuncts. This is confirmed by the data in (18) (see also Frey & Truckenbrodt 2015). (The same holds for German and Norwegian, which we omit for reasons of space.)

(18) a. *Type B: adverbial small clause headed by 'as'*
*He$_i$ invited the whole family for dinner [PRO$_e$ as an attempt to discuss Peter$_i$'s health problems].

b. *Type C: adverbial present participle construction*
*He$_i$ invited the whole family for dinner [PRO$_e$ befitting the occasion of Peter$_i$'s 50th birthday].

c. *Type D: adverbial infinitive headed by 'to'*
*He$_i$ invited the whole family for dinner [PRO$_e$ in order to discuss Peter$_i$'s health problems].

To sum up, the data in this section have shown that appositional adjuncts (type A) differ from type B, C, and D adjuncts with respect to their adjunction sites, which gives rise to a different behavior concerning binding and scopal relations. Therefore, we can conclude that type A adjuncts classify as peripheral adverbial clauses and are adjoined in the CP domain, while type B, C, and D adjuncts classify as central adverbial clauses and are adjoined in the verbal domain.

2.3 Event control is obligatory control

In this section, we will briefly outline why we consider event control to be obligatory control before we then turn to a potential technical implementation. In order to do so, we will apply OC diagnostics as described, for instance, in Landau (2013). For illustration, we will mainly use German examples.

First, in OC constructions, the controller is obligatorily an argument of the embedding predicate, i.e. we have a local c-commanding controller. In our case, the controller is indeed an argument of the adjunct's matrix clause, namely a Davidsonian event argument in the main clause (cf. Davidson 1967). Regarding the c-command relationship, we will come back to the concrete underlying structure below, where we will see that this requirement is indeed also fulfilled. The locality restriction moreover implies that long distance (LD) control is ruled out in OC. That this is true in the case of event control is illustrated in (19).

(19) Hans berichtete, dass Peter [PRO_e als letzten Schritt] den Boden
Hans reported that Peter as last work.task the floor
gebohnert habe.
waxed $have_{SBJV}$
'Hans reported that, as a last step, Peter had waxed the floor.'
a. $event_1$: *berichten* ('report') in the matrix clause
$event_2$: *den Boden bohnern* ('wax the floor') in the emb. clause
b. *letzter Schritt ≠ berichten*: # Hans berichtete als letzten Schritt …
'Hans reported as a last step …'
letzter Schritt = den Boden bohnern ('wax the floor')

As illustrated in (19b), PRO must be controlled by the event in the embedded clause (= waxing of the floor) – i.e., the adjunct *als letzten Schritt* ('as a last step') cannot refer to the reporting event of the matrix clause, but obligatorily modifies the embedded event *den Boden bohnern* ('wax the floor'). Thus, we can conclude that LD control is indeed impossible.

Furthermore, it has been shown that arbitrary control is illicit in OC constructions. Since events cannot receive an arbitrary interpretation, this follows

automatically.[8] Last but not least, in the case of NOC, the controller must be human, whereas it can also be non-human in OC contexts. In the case of event control, the controller is obviously always non-human, since it is an event; hence this also suggests that event control must be obligatory control.[9]

To sum up, various tests have shown that event control behaves like other instances of OC, and therefore we argue that it should be syntactically licensed in the same way.

3. Theoretical approach

Let us now explore how event control can be syntactically modeled on a par with standard obligatory control. Following the hybrid theory of control (HTC) outlined in Fischer (2018), we aim to show that event control can be accounted for along the same lines. In the subsequent sections we will therefore briefly introduce the basic ideas of the HTC before we will come back to event control and show how it can be integrated into this theory.

3.1 Basic assumptions of the hybrid theory of control (HTC)

The HTC is a phase-based theory of control that assumes that OC is licensed under (upward) Agree. That is, we deal with a derivational control theory that takes the Phase Impenetrability Condition (PIC) seriously insofar as it assumes that syntactic licensing must occur within the respective accessible domain in the course of the syntactic derivation. Hence, it follows a central minimalist assumption which requires that syntactic licensing be locally constrained (principle of economy). We adopt the following definitions:

(20) *Phase Impenetrability Condition* (PIC):
The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations.
(Chomsky 2000: 108)[10]

---

8. By contrast, DPs can have the meaning *(any)one* (= arbitrary interpretation).

9. Another well-known criterion for OC is that OC PRO only allows a sloppy interpretation under ellipsis; however, we do not see how we could apply this test to event control.

10. Note that Chomsky (2001) proposes in addition a second, more liberal version of the PIC. We follow the more restrictive version in (20) for conceptual reasons; but this does not have any consequences for our analysis of event control.

(21) CPs and vPs are phases.

Let us now briefly look at the licensing of standard OC, i.e. OC with a DP as obligatory controller. The basic idea of the HTC is this: the controllee is merged into the derivation as an empty argument which is referentially defective.[11] This is encoded in syntax in terms of the feature specification {D, β:_}. The β-feature can be viewed as a syntactically reified binding index feature, and that PRO carries an unvalued β-feature indicates that PRO needs to be referentially identified, which is achieved under Agree (involving upward probing, see (22)) with another element bearing a valued β-feature. At the C-I interface, Agree involving β-feature checking is interpreted as binding.[12] That is, syntax establishes the link between OC PRO and its controller, which is then semantically interpreted as binding.

The version of Agree that we adopt is defined in (22).

(22) *Agree:*[13]
A feature [F:_] on α is valued by a feature [F: *val*] on γ iff
a. γ c-commands α,
b. γ is the closest goal, and
c. α and γ are both accessible.

Standard OC is then derived as follows: the D-feature allows PRO to be merged into an argument position; from here it probes upwards to find a goal/licensor.[14] If PRO cannot be licensed in the current phase, it moves to the phase's edge to remain accessible and thereby retain the possibility to get licensed later in the derivation (in accordance with the PIC). When an element bearing a valued β-feature is merged, PRO finds a goal and can be licensed under Agree; i.e., the β-feature of PRO is valued, which means that PRO is interpreted as being bound by this element (= the controller).

---

11. This empty argument is not necessarily a control-specific formative; but since we focus on control, we can equate it with PRO.

12. Note that this feature does not really display a specific syntactic property; it just signals whether a DP is referentially identified or not (if yes, the corresponding β-feature is valued, if not, it is unvalued; if an unvalued feature is valued under Agree, this relation is interpreted as a binding relation). For similar assumptions, cf. also Hicks (2009). See also Fischer (2004, 2006), where such a β-feature has already been introduced in the context of a derivational analysis of anaphoric/pronominal binding.

13. This is a version of Wurmbrand's definition of (Reverse) Agree (see Wurmbrand 2011: 3). Following Pesetsky & Torrego (2007), Bošković (2009 et seq.), Wurmbrand (2011) a.o., Agree is thus assumed to be valuation-driven.

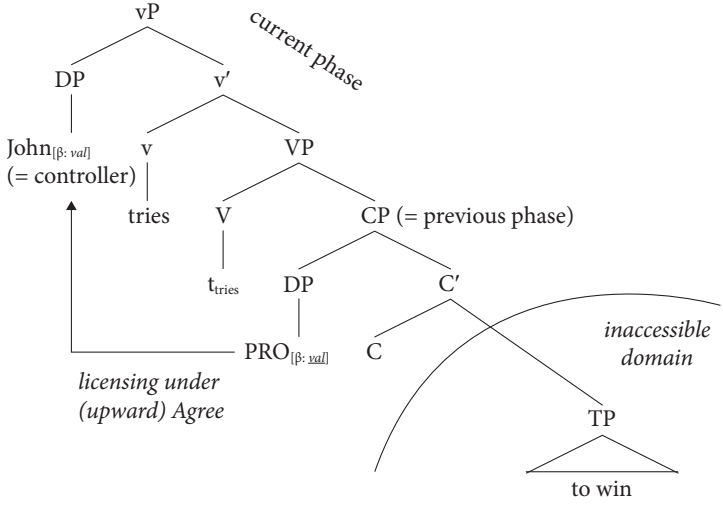
14. As regards upward probing, see also Baker 2008, Schäfer 2008, Haegeman & Lohndal 2010, Bjorkman 2011, Wurmbrand 2011, Zeijlstra 2012, Bjorkman & Zeijlstra 2019.

(23) *General licensing of OC in a nutshell:*
controller$_{[\beta:\ val]}$ … [$_{previous\ phase\ edge}$ PRO$_{[\beta_:]}$ …]

For a sentence like (24), which involves standard subject control, the point in the derivation when the control relation is licensed is illustrated in (25).[15]

(24) John$_i$ tries [PRO$_i$ to win].

(25) *Valuation of PRO's previously unvalued β-feature under Agree*



3.2 Event control: Technical implementation

In Section 2.3, we have shown that event control behaves like other instances of OC. In fact, the only difference seems to be that, in the case of event control, OC PRO refers to an event (or proposition, see also footnote 4 and Section 3.2.2) in the main clause (and not to a DP). So we suggest that, due to its similar behavior, the licensing of event control should occur in a similar way.

In analogy to the HTC analysis of subject control, we therefore suggest that small clause adjuncts selecting an event subject merge an empty argument in their subject position with the feature specification {D, ε:_}. In principle, the ε-feature is identical to the β-feature above since selection requirements of the control predicate determine whether PRO needs a DP or an event (or proposition) as a controller; so there is no need to implement this in the feature specification of PRO itself. Instead, PRO is rather so underspecified that it can be interpreted in either way, depending on the requirements of the selecting predicate; we will come back to this issue in

15. For further details concerning the licensing of control involving DPs as a controller within the framework of the HTC, see Fischer (2018) and Fischer & Høyem (2021).

greater detail in Section 3.4. But for the sake of convenience, we use the ε-notation if PRO ends up being interpreted as an event or proposition and call this argument PRO_e to distinguish it visually from DP-controlled PRO.

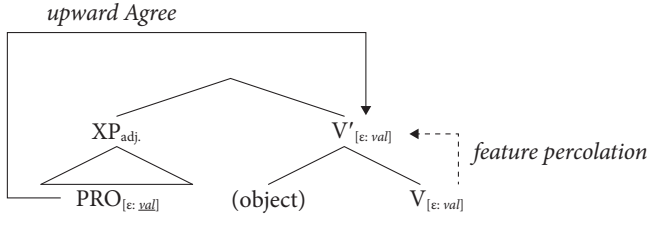
So what happens in syntax? PRO_e with its unvalued ε-feature probes upwards to find a licensor with which to agree. Crucially, in line with Whelpton (2002), Lohndal (2014),[16] a.o., we assume that event variables are syntactically active, and we suggest that this is encoded in syntax as follows: the Davidsonian event argument that ultimately licenses PRO_e has its origin in the verb's lexical representation. In syntax, this is encoded in terms of a valued ε-feature; i.e. a verb enters the syntactic derivation with a valued ε-feature (indicating that it introduces an event). This feature percolates from the verbal head to the projections of the verb (cf. also Whelpton 2002: 199), and as a result, when probing upwards, PRO_e finds a suitable goal. At the C-I interface, valued PRO_e is thus interpreted as referring to the event denoted by its syntactic licensor (= the controller), in analogy to the situation in standard control outlined in Section 3.1.

To sum up, in syntax, OC simply boils down to this: since PRO is defective, an Agree relation between PRO and its controller must be established to referentially identify PRO by stating that in whichever way the controller is interpreted, this is how PRO is interpreted as well. That is, syntax links PRO to its controller (i.e. it determines the latter); semantics, on the other hand, later on determines their concrete interpretation. (And in the case of event control, PRO and its controller simply refer to an event or proposition.)

Crucially, the ε-feature is a syntactic object and has to be distinguished from the semantic event argument. In this paper, we focus on what is going on in the syntactic component.

As a first illustration, consider (26), which shows the syntactic licensing of event control into a (head-final) VP.

(26) *Valuation of PRO's previously unvalued ε-feature under Agree*[17]



16. "[Event variables] are introduced in the syntax." (Lohndal 2014: 133)

17. Following Bare Phrase Structure, the mother node of the object turns (notationally) into an intermediate projection (V′) if another constituent is merged within the same phrase (like an adjunct). So the VP adjunct in (26), XP, is *not* meant to be in a specifier position.

3.2.1 *Licensing of PRO$_e$ in VP adjuncts (= type B, C, D adjuncts)*

Let us now get back to the concrete examples from the first sections. How are instances of event control like these derived?

(27) a. [Als letzten Arbeitsgang] hat Peter den Boden gebohnert.
as last work.task has Peter the floor waxed
'As a last step, Peter waxed the floor.'

b. underlying word order:
dass Peter [$_{VP}$ [PRO$_e$ als letzten Arbeitsgang] den Boden
that Peter as last work.task the floor
gebohnert] hat.
waxed has
'… that Peter, as a last step, waxed the floor.'

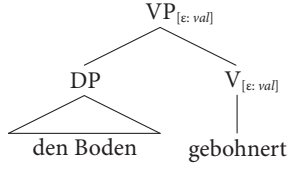
(28) a. Peter hat den Boden gebohnert. *Das* war der letzte Arbeitsgang.
Peter has the floor waxed this was the last work.task
'Peter waxed the floor. This was the last task.'

b. *das* ('this') = *den Boden bohnern* ('wax the floor')

The verb (*bohnern*) enters the derivation with a valued ε-feature, which percolates to the verbal projection, see (29a).[18] PRO is in the accessible domain inside the adjunct (i.e. at its edge if the adjunct is a CP, otherwise at the edge of the highest phase inside the adjunct),[19] and moreover, V′ is an accessible goal for PRO: PRO and V′ are both accessible at this point in the derivation, V′ c-commands PRO, and V′ bears a matching feature ([ε: *val*]).[20]

(29) *Structure before and after VP adjunction*[21]

a.



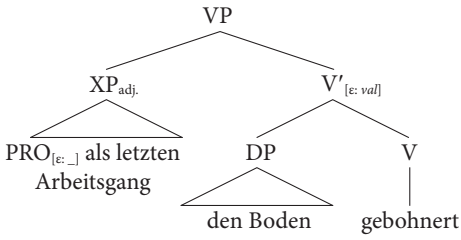
18. Recall that, in terms of notation, the VP node from (29a) turns into a V′ node in (29b) when the tree is extended and CP is adjoined (following Bare Phrase Structure).

19. Depending on what we assume to be the internal structure of the adjunct, parts of it might already have been rendered inaccessible at this point, which is ignored in tree (29). The only thing that counts is that PRO is still accessible.

20. Note that [ε: *val*] can also percolate to VP in (29b); but VP is not a potential goal for PRO due to lack of c-command.

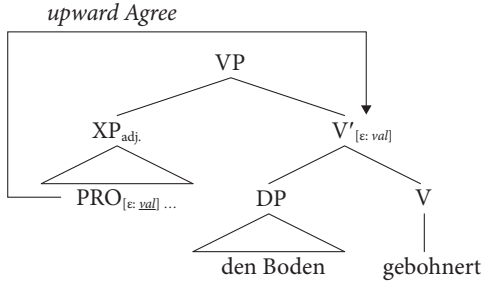
21. Note that, for the sake of clarity, we only represent the valued ε-feature on the *goal* in the trees that illustrate control licensing (and ignore other instances of [ε: *val*]). Moreover, we use the label XP for all adjuncts in the trees since the categories might vary and are not relevant for the theory.

b.



Hence, Agree can be established and the OC relation is derived; as desired, the semantic interpretation of this event at the C-I interface is *den Boden bohnern* ('wax the floor') (see (30)).

(30) *Licensing of the control relation under Agree*



3.2.2 *Licensing of PRO$_e$ in CP adjuncts (= type A adjuncts)*

Now what about event control into appositional nominative DPs, as in (31)? Recall that we have shown in Section 2 that they are adjoined at the CP level.

(31) Martin hat einen neuen Job, [PRO$_e$ eine tolle Nachricht].
Martin has a new job a great news
'Great news, Martin has a new job.'

(32) a. Martin hat einen neuen Job. *Das* ist eine tolle Nachricht.
Martin has a new job this is a great news
'Martin has a new job. These are great news.'
b. *das* ('this') =
Martin hat einen neuen Job ('Martin has a new job')

As the paraphase in (32) suggests, the "controlling event" is that Martin has a new job; i.e. in this case, *das* ('this') refers to a bigger entity compared to the previous examples (cf. (28), for instance) – it refers to the whole proposition, which is semantically more complex than an event[22] and corresponds, syntactically speaking, to the whole clause.

---

22. Following Pittner (1999: 181), propositions contain "*vollständig spezifizierte Ereignisse*" ('completely specified events').

What can be observed in addition is that these appositional CP adjuncts can only be adjoined to finite declarative clauses (cf. (33)).

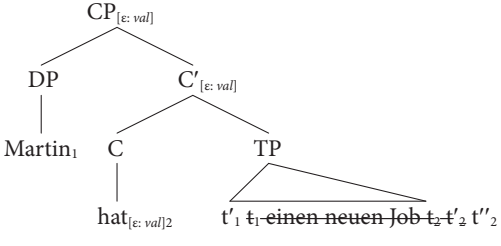
(33) a. *Hat Martin einen neuen Job, [PRO_e eine tolle Nachricht]?
has Martin a new job a great news

b. Martin glaubt, einen neuen Job zu haben, [PRO_e eine
Martin believes a new job to have a
tolle Nachricht].
great news
'Great news, Martin believes to have a new job.'
→ *great news*: must refer to the finite matrix clause, i.e. to '*Martin believing* to have a new job'.

If finiteness and a [−Q] specification are additional prerequisites for successful licensing in the case of appositional type A adjuncts, this suggests that the features of the T- and C-head (where these properties are encoded) also play a central role. So this seems to be what distinguishes event control in the verbal domain from propositional control in the CP domain: in the latter case, the verb also introduces information about the event in the verbal domain, but when the TP and CP layer are built, additional pieces of information (like tense) are added.

Syntactically, the licensing mechanism of the control relation basically remains the same: licensing occurs under upward Agree between PRO_e and the C-head bearing the valued features that are needed for the referential identification of underspecified PRO. In order not to complicate the tree structures below, we stick to the ε-notation in (34) and (35), although we have seen by now that, strictly speaking, it actually refers to the whole proposition.

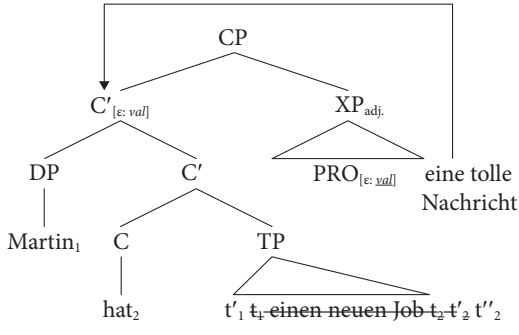
(34) *Structure before CP adjunction takes place*



After CP adjunction has taken place, the configuration looks as indicated in (35). Recall that, notationally, the CP node from (34) turns into a C′ node in (35) when the tree is extended and CP is adjoined (following Bare Phrase Structure).

The control relation can now be derived as follows: C′ is an accessible goal for PRO since both PRO and C′ are accessible at this point in the derivation,[23] C′ c-commands PRO, and C′ bears a matching feature ([ε: *val*]). Hence, Agree can be established and the OC relation is derived. At the C-I interface, the semantic interpretation of this event will thus turn out to be *Martin hat einen neuen Job* ('Martin has a new job').

(35) *Licensing of the control relation under Agree*



3.3 Multiple agree

In the literature, instances of multiple Agree have often served as a motivation for upward Agree (see, for instance, Hiraiwa 2001; Haegeman & Lohndal 2010; Zeijlstra 2012; Bjorkman & Zeijlstra 2019). In fact, an analysis in terms of multiple upward Agree can also straightforwardly account for sentences with several small clause adjuncts that refer to the same event (see (36)).

(36) Ich habe gehört, dass Peter [passend zum Thema] [als kleine
I have heard that Peter fitting to.the topic] as little
Überraschung] einen Dracula-Kuchen gebacken hat.
surprise a Dracula-cake baked has
'I heard that Peter, befitting the occasion, had baked a Dracula cake as a little surprise.'

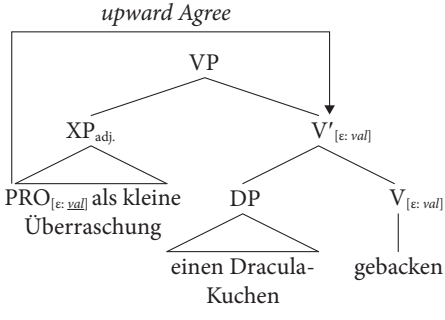
The first adjunct in (36) involves an adverbial present participle construction (type C adjunct), the second one an adverbial small clause headed by the particle *als* ('as') (type B adjunct); i.e., we deal with two small clause adjuncts adjoined at the same

23. PRO is in the accessible domain inside the adjunct, namely at its edge if the adjunct is a CP, otherwise at the edge of the highest phase inside the adjunct in case PRO's earlier positions have already been rendered inaccessible.

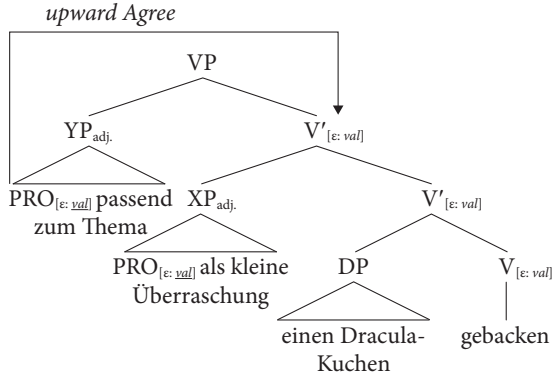
level, namely VP. Since the controlling event is in both cases the event introduced by the predicate *bake*, an analysis based on upward Agree can indeed straightforwardly account for these data since the two instances of PRO function as two probes which ultimately find the same goal as a licensor.[24]

More specifically, the licensing of this control relation comes about as follows: when the first adjunct is adjoined to VP, the PRO it contains probes upwards for a goal to value its unvalued ε-feature. V′ turns out to be such a suitable goal – PRO and V′ are both accessible at this point in the derivation, V′ c-commands PRO, and V′ bears a matching feature ([ε: *val*]) (see (37a)). Next, the second adjunct is adjoined, and since the valued ε-feature of the matrix event can again function as a goal, the second instance of PRO can be licensed in the same way (see (37b)).

(37) a.



b.



As a result, OC is derived, which in this case involves control into both adjuncts by the same event. At the C-I interface, the semantic interpretation of this event is finally determined as *einen Dracula-Kuchen backen* ('bake a Dracula cake').

24. As discussed by Zeijlstra (2012), downward licensing, by contrast, would not work in such a configuration: if the controller were the probe, it could not license two goals since it would be valued already after the first instance of Agree.

3.4 On the distinction between standard PRO and PRO_e

One question that remains to be answered concerns the distinction between PRO being controlled by a DP (= standard PRO) vs. PRO being controlled by an event (= PRO_e). As alluded to before, this distinction is not inherent to the element PRO as such, but rather follows from the context in which PRO occurs and the fact that PRO is initially so underspecified that it is compatible with both types of interpretations.

Whether a non-finite adjunct selects an agent or event subject in the active depends on the involved predicates and is reminiscent of the situation in passives, where we also find event passives.[25] Similarly, OC can involve either PRO_e, which is controlled by an event, or agentive PRO, which gives rise to subject, object, or implicit agent control; see (38) vs. (39). As the paraphrase in (38a) shows, the adjunct in (38) involves event control, whereas in (39), PRO is controlled by the subject DP *Peter*, as illustrated in (39a).

(38) *event control:*
[PRO_e Als letzten Versuch (ihn umzustimmen)] [schrieb Peter einen
as last attempt (him round.to.bring) wrote Peter a
Brief an den Vermieter]$_e$.
letter to the landlord
'In a last attempt to make him change his mind, Peter wrote a letter to the landlord.'
meaning:
a. Peter schrieb einen Brief an den Vermieter. *Das* war der letzte
Peter wrote a letter to the landlord this was the last
Versuch (ihn umzustimmen).
attempt (him round.to.bring)
'Peter wrote a letter to the landlord. This was the last attempt to make him change his mind.'
b. *das* ('this') = *einen Brief an den Vermieter schreiben* (→ event)
('write a letter to the landlord')

(39) *subject control:*
[PRO_1 Als Arbeitsloser] hatte $Peter_1$ keine Chance auf die Wohnung.
as unemployed had Peter no chance on the apartment
'Being unemployed, Peter had no chance to get the apartment.'

---

25. As Solstad puts it, "(e)vent passives are verbal passives which involve only a causing event and no agent, where the notion of agent should be interpreted narrowly to involve only individuals capable of volitional action. Put differently, in event passives, no causing individual is assumed to be implicitly present semantically" (Solstad 2009: 366).

meaning:

a. Da Peter arbeitslos war, hatte er keine Chance auf
since Peter unemployed was had he no chance on
die Wohnung.
the apartment
'Since Peter was unemployed, he had no chance to get the apartment.'

b. external argument of *arbeitslos/Arbeitsloser* ('unemployed')
= *Peter* (→ DP)

Moreover, there are also ambiguous adjuncts which can either select PRO_e or agentive PRO controlled by an implicit agent; i.e., some sentences can be interpreted as either involving event control or implicit agent control; see (40) vs. (41) (cf. also Høyem 2015: 179).

(40) *event control:*
[Die Einwohner wurden evakuiert,]$_e$ [um PRO_e eine Katastrophe
the inhabitants were evacuated for a disaster
zu verhindern].
to prevent
'The inhabitants were evacuated to prevent a disaster.'
meaning:

a. Die Einwohner wurden evakuiert. *Dies* verhinderte eine Katastrophe.
the inhabitants were evacuated this prevented a disaster

b. *dies* ('this') = *die Einwohner evakuieren* (→ event)
('evacuate the inhabitants')

(41) *implicit agent control:*
Die Einwohner wurden evakuiert, [um $PRO_{agentive}$ eine Katastrophe
the inhabitants were evacuated for a disaster
zu verhindern].
to prevent
'The inhabitants were evacuated to prevent a disaster.'
meaning:

a. Die Einwohner wurden evakuiert. *Die Verantwortlichen* verhinderten
the inhabitants were evacuated the responsible prevented
so eine Katastrophe.
thus a disaster
'The inhabitants were evacuated. In doing so, the responsible persons prevented a disaster.'

b. external argument of *(eine Katastrophe) verhindern*
= *die Verantwortlichen* ('the responsible persons') (→ DP)

As a result, we can generally conclude that it depends on the predicate inside the adjunct whether PRO is ultimately controlled by an event or a DP – and as the examples in (40) and (41) have shown, there are in addition ambiguous adjuncts in which both interpretations are viable. In any case, it is not an inherent property of PRO itself which is responsible for this decision – but its underspecification makes it compatible with both syntactic environments.

4. Conclusion

Based on a huge set of data from German, English, and Norwegian, we have argued that the set of obligatory control relations should be extended to include event control, a control relation between PRO inside a small clause adjunct and a Davidsonian event argument in the matrix clause. In this paper, we have focused on the following types of adverbial adjuncts: appositional nominative DPs, adverbial small clauses headed by the particle *als/som/as*, adverbial present and past participle constructions, and adverbial infinitives headed by *um/for/to*. Based on their different behavior concerning binding and scopal relations, we concluded that appositional nominative DPs (type A adjuncts) are adjoined at the CP level, whereas the others (type B, C, D adjuncts) are adjoined in the verbal domain. The systematic differences between these two classes suggested moreover that there might be a more fine-grained distinction between events and propositions as controllers, and so the term event control has to be read as an umbrella term for both subtypes.

Since it behaves like standard OC, we argued that event control should be syntactically licensed in the same way and therefore proposed, following the hybrid theory of control, that the control relation is licensed under upward Agree with PRO_e as probe and an event (or proposition) in the matrix clause as goal. In line with Whelpton (2002), Lohndal (2014), a.o., we assumed that event variables are syntactically active, and we proposed that this is encoded in syntax as follows: verbs come into the derivation with a valued ε-feature (which indicates that they introduce an event); this feature percolates from the head to the verb's (extended) projections.[26] PRO_e, on the other hand, is referentially defective and needs to be referentially identified in the course of the derivation; technically, this means that PRO_e is underspecified and bears an unvalued feature which can be checked by a valued ε-feature.[27]

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26. In fact, if control takes place in the CP domain, additional information is added by the T- and C-head; this then leads to propositional control.

27. Recall that it depends on the predicate that selects PRO as its argument whether the unvalued feature is checked by an event or an argument DP (the former yielding event control, the latter yielding subject or object control).

PRO's concrete interpretation can be determined once feature valuation has taken place under Agree; i.e., Agree syntactically links PRO to the controller and thus entails that PRO ultimately has the same interpretation. As a result, at the C-I interface, valued PRO_e is interpreted as referring to the same event as its controller.

So event control integrates smoothly with existing analyses of standard control, and the data have shown that we deal with a robust phenomenon that deserves further attention in future research.

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Adjunct control and the poverty of the stimulus

Availability vs. evidence

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Subject control in non-finite adjuncts is observed across languages (as in 'John called Mary after drawing a picture'). Research on the acquisition of adjunct control has generally focused on the relevant grammatical components and when they are acquired. This paper considers these components in the context of the linguistic input to ask how control in adjuncts is acquired. Although adjunct control is available in the input, the instances themselves do not provide evidence for abstract syntactic relations. Implications are considered for linguistic dependencies and the evidence in the input.

1. Introduction

This paper focuses on obligatory control in non-finite adjuncts, as in (1):

(1) John$_1$ called Mary$_2$ after PRO$_{1/*2/*3}$ drawing a picture.

In particular, adjunct control is used as a case study for the role of the linguistic input in acquiring dependencies: while some properties of adjunct control are observed across languages, others are language-specific. Additionally, exceptions to canonical control structures raise questions about the type of information needed from the input.

In (1), the adjunct subject PRO is obligatorily controlled by the main clause subject *John*. This pattern is observed across languages, and is captured by high attachment of the adjunct clause and c-command by the controller (Chomsky 1981).[1] Therefore, evidence for these features must be available in the linguistic input or they must be innate (Chomsky 1965).

1. This paper is based on these components, but may also be considered in the context of other frameworks; importantly, adjunct control involves a locality constraint which is structurally defined. This constraint is the focus of this paper.

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The goal of this paper is to evaluate these features and their predictions for the linguistic input, and the primary question is how the features of obligatory control are acquired. As abstract features, they cannot be observed directly. Therefore, if evidence is available in the input then this evidence must be inferred from observable features or patterns in the input. For example, this inference may be possible based on the context or distribution of the surface features (Pullum & Scholz 2002; Scholz & Pullum 2006; Ambridge et al. 2008; Ambridge 2019; Tomasello 2009; Regier & Gahl 2004; Perfors, Tenenbaum & Regier 2011; Pullum 2020, i.a.), or on frequencies of n-grams that make up a complex structure (Pearl & Sprouse 2013a; Pearl & Sprouse 2013b; Pullum & Scholz 2002; Mintz, Newport & Bever 2002).

For adjunct control, this question depends on the availability of adjunct control in the input, children's perception of the input, and the relevant form of evidence for the abstract features of control. If evidence is available for attachment height and the c-command dependency, this evidence may be observed in sentences with adjunct control, specifically; alternatively, the features may be generalized from other structures. However, if evidence is not available in the input, then some aspects of these features must be innate (i.e. specified in Universal Grammar, or UG), and evidence is needed for language-specific aspects of the dependency.

These factors are considered for adverbial adjuncts like (1) with obligatory control.[2] The analysis is based on a critical review of predictions from previous studies, with support from novel corpus data. Importantly, while the input does include sentences with adjunct control, it does not provide evidence for the abstract components of adjunct control, i.e. attachment height and a c-commanding controller. This includes both direct evidence (from observing instances of adjunct control in the input) and indirect evidence (by generalizing from similar structures).

If attachment height and c-command are innate, this makes further predictions about the linguistic input. Finally, implications are considered for the acquisition of non-obligatory control, linguistic dependencies in general, and the role of evidence in the input.

2. What is evidence?

The primary question of this paper is how control in adjuncts is acquired. The following sections consider two preliminary issues: first, evidence for adjunct control must be available in the input; and second, children must be receptive to this evidence when they encounter it.

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2. These are the most frequently used adjuncts in previous acquisition studies. Other adjuncts with obligatory control are not discussed in this paper (e.g. rational clauses, purpose clauses, telic clauses), although the paper's conclusions have broader implications for control in general.

This raises the question, what kind of input constitutes evidence for adjunct control? Attachment height and c-command cannot be observed directly; therefore, the availability of adjunct control in the input does not equate to evidence in the input. Additionally, this question *cannot* be answered solely by observing children's behavior, either in naturalistic productions or in an experimental context: although children's behavior can be indicative of their linguistic knowledge, it does not reveal how that knowledge is acquired. At the same time, children's perception of the input depends on their linguistic knowledge: for example, a child with a non-adult grammar will access non-adultlike interpretations of the input; this has consequences for the evidence that's needed for the adult grammar.

The above issues therefore depend both on external factors – here, the syntactic structures in the input – and internal factors – the grammatical competence needed for interpreting the input. These factors are discussed in the following sections.

2.1 Considerations for the input

If evidence for adjunct control is available in the input, then the relevant input will depend on several factors. First, the timeframe for the input is determined by the ages when a child is receptive to the evidence. Next, the relevant input within this timeframe depends on the source of the evidence. Also important is the signal to noise ratio, with multiple sources of noise to consider.

2.1.1 *The input: Timeframe*

In previous studies, children have shown non-adultlike behavior for adjunct control at age 4, but were generally adultlike by age 7 (Goodluck 1981; Hsu, Cairns & Fiengo 1985; Goodluck & Behne 1992; Janke & Bailey 2017; Janke & Perovic 2017; Janke 2018). Therefore, evidence for the adult grammar must be available before this.

Meanwhile, a lower limit may be considered based on prerequisite knowledge and parsing capacity (Sutton 2015). For example, evidence for attachment height requires a distinction between arguments and adjuncts, while a c-commanding controller assumes hierarchical structure and involves the deployment of binding relations. Additionally, identifying control in non-finite (rather than finite) adjuncts involves language-specific realization of tense.

Children are sensitive to argument structure by 24 months (Naigles 1990; Gertner, Fisher & Eisengart 2006; Arunachalam et al. 2011; for a review see Fisher et al. 2010); if this is indicative of a distinction between arguments and adjuncts, then evidence may be available for some properties of adjunct control at this age. Moreover, some binding relations may be computed by 30 months (Sutton, Fetters & Lidz 2012; Lukyanenko, Conroy & Lidz 2014). However, evidence may also be

limited by children's parsing capacity at a given age. For example, even when binding is available within clauses, cross-clausal binding relations may not yet be a reliable source of evidence.

In general, if evidence is available for adjunct control in the input then it should be available before age 7, but a lower limit will depend on the form of the evidence: more salient, early-acquired forms like tense are likely to be available earlier than more complex elements of control, like binding relations. As a tradeoff, complex elements may provide more information about abstract features than the early acquired forms. Either way, this evidence must be provided by a reliable source in the input.

2.1.2 *The input: Sources of evidence*

This paper is concerned primarily with evidence in the linguistic input. Importantly, this is not the same type of evidence that is provided by an experiment for testing children's knowledge. This second type of evidence – experimental evidence – is based on children's behavior, and can be used by researchers to make inferences about children's grammatical knowledge at the time of testing.

Meanwhile, evidence in the input is used by children to acquire the adult grammar. This evidence is therefore not based directly on children's behavior, and does not allow for direct inferences about children's knowledge. However, since children's experience of the input depends on their grammatical knowledge, experimental evidence can help to identify a potential mismatch between the input and children's perception of the input – i.e. the linguistic *intake* (Lidz & Gagliardi 2015; Omaki & Lidz 2015); this mismatch can have implications for the evidence in the input (discussed further below).

Another relevant contrast is between children's own productions and the input that they receive (from caretakers, sibling, etc.). Like experimental evidence, children's productions may be used to make inferences about their grammatical knowledge; for example, if children produce only adultlike utterances at a given age, this is likely evidence that children have acquired the adult grammar by that age.

In contrast, evidence in the input occurs in speech *to* children. Therefore, for a given child, the relevant evidence for adjunct control will not depend on their own utterances.

2.1.3 *The input: Signal to noise*

Before moving on to internal factors, a final external consideration is the noise in the input from extragrammatical sources (Lidz & Gagliardi 2015; Omaki & Lidz 2015; Phillips 2013; for a review, see Pearl 2019). In addition to children's grammatical competence, important factors include speech errors in the input and parsing errors in the intake, with implications for input frequency and the relative contribution of a single instance.

While non-adult interpretations are expected from a non-adult grammar, errors may also be observed for adjunct control with the adult grammar, due to extra-grammatical factors (Parker, Lago & Phillips 2015; Kwon & Sturt 2014; Kush & Dillon 2020; Gerard et al. 2017). For example, speech errors like disfluencies may disrupt encoding of the input (Banbury et al. 2001), while a non-subject antecedent of PRO will introduce noise for adjunct control, specifically.

In addition, noise is likely to result from the deployment of immature parsing mechanisms, independent of children's grammatical knowledge. For sentences with adjunct control, the antecedent of PRO must be retrieved from memory; however, a similar referent in memory can interfere with the retrieval mechanism (Gordon, Hendrick & Johnson 2001; Gordon, Hendrick & Johnson 2004; Warren & Gibson 2002; Warren & Gibson 2005; Gordon et al. 2006; for a review, see Gordon & Lowder 2012). This interference may occur for any grammar (adultlike or non-adultlike), and the resulting interpretation may be consistent or inconsistent with the child's grammar.

If an interpretation in the intake is inconsistent with the adult grammar, this is a problem: such an interpretation should be taken as evidence against the adult grammar (Belletti 2017; Pearl 2019). To avoid this conclusion, a learning strategy is needed which can filter the input, depending on the likelihood of a parsing error in the intake (Perkins, Feldman & Lidz 2017). For any single utterance in the input, this likelihood is non-zero, with a higher likelihood of a parsing error for more complex utterances (Boyle & Coltheart 1996). As a result, the relevant evidence may also require multiple observations.

This strategy is important for adjunct control, since a single observation in the input may be inconsistent with the adult grammar in the intake. Consequently, the relative frequency of adultlike interpretations must be high enough to override the non-adultlike ones, regardless of how they arise (non-adult grammar, speech error, or parsing error). A further implication of this strategy is that a single observation is not sufficient for acquiring the adult grammar. This also avoids a transition to a non-adult grammar for every non-adult observation in the intake.

This section has discussed several considerations for adjunct control in the input. If evidence is available in the input, it is expected within a certain timeframe, from an external source (rather than the child themself), and at a high enough frequency to override expected noise in the input. These factors are important for determining the availability of evidence. In addition to availability, however, children must also be receptive to this evidence to acquire the adult grammar.

2.2 Considerations for grammatical competence

Previous studies on children's acquisition of adjunct control have generally used sentences with a structure like in (1), repeated below:

(1) John$_1$ called Mary$_2$ after PRO$_{1/*2/*3}$ drawing a picture.

Importantly, there are two animate antecedents in the main clause, both of which are a semantically plausible antecedent for PRO (Goodluck 1981; Hsu, Cairns & Fiengo 1985; McDaniel, Cairns & Hsu 1991; Goodluck & Behne 1992; Cairns et al. 1994; Broihier & Wexler 1995; Adler 2006; Janke & Bailey 2017; Janke & Perovic 2017; Gerard et al. 2017; Gerard et al. 2018; for a review see Janke 2018).

This isolates children's syntactic knowledge as the source of their interpretation:[3] in (1), the adult grammar identifies the main clause subject as the antecedent of PRO; however, for a non-adult grammar which does not rule out the main clause object as an antecedent, (1) is ambiguous since there are multiple plausible antecedents. That is, a non-adult grammar of adjunct control can generate an adultlike (subject control) interpretation of (1), or a non-adultlike (object control) interpretation.

In previous studies on adjunct control, children have allowed both adultlike and non-adultlike interpretations of (1). This is consistent with a non-adult grammar which generates both interpretations. However, with a non-adult grammar, evidence is required at some point for the adult grammar. Importantly, this evidence must be available not only in the linguistic input, but also in the *intake*.[4]

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3. See work by Janke & Bailey (2017), Janke (2018) and Gerard et al. (2017, 2018) for pragmatic and extragrammatical sources of children's interpretations.

4. One concern with sentences like (1) is that both plausible antecedents are sentence-internal, making the sentence ambiguous for a non-adult grammar that allows object control. In contrast, the following sentences have just one plausible sentence-internal antecedent:

(i) John$_1$ called a taxi$_2$ after PRO$_{1/*2/*3}$ drawing a picture.

(ii) John$_1$ called after PRO$_{1/*2}$ drawing a picture.

These sentences make contrasting predictions for different grammars: with a non-adult grammar that allows any internal antecedent for PRO, but not an external antecedent, (i) and (ii) may be disambiguated based on plausibility alone. However, a grammar which does allow external antecedents, i.e. a free reference grammar, may still generate a non-adultlike interpretation for (i) and (ii), if another referent is available in the discourse.

In previous studies, children who accepted a non-adultlike internal antecedent also tended to accept an external antecedent for PRO, consistent with a free reference grammar (McDaniel, Cairns & Hsu 1991; Cairns et al. 1994; Broihier & Wexler 1995; Adler 2006). Therefore, if children need evidence for the adult grammar of adjunct control, this evidence must be available even with the interpretations allowed by a free reference grammar, i.e., with any referent in the discourse.

The fact that a non-adult grammar generates non-adultlike interpretations presents a puzzle: for adjunct control in the input, if children have a non-adult grammar, then they will access both adultlike *and* non-adultlike interpretations, as in previous experimental contexts (Wexler 1990).

Another consideration, however, is that the antecedent of PRO is a realization of the abstract features of control, i.e. attachment height and c-command by the controller. In previous studies, children's interpretations were non-adultlike if they identified a non-subject antecedent of PRO; accordingly, non-adult grammars have been proposed with the incorrect attachment height (Goodluck 1981; Hsu, Cairns & Fiengo 1985; McDaniel, Cairns & Hsu 1991; Cairns et al. 1994; Adler 2006) or an immature representation of the control relation (Goodluck 2001; Goodluck & Behne 1992; Broihier & Wexler 1995; Wexler 2019). Evidence for the adult grammar would therefore relate to attachment height or the correct control relation, respectively.

These features cannot be observed directly, so this evidence must be available indirectly, from observable features of the input. Additionally, the evidence must be robust to children's non-adultlike interpretations – that is, a non-subject antecedent must not interfere with evidence for the adult grammar. Evidence for the adult grammar must therefore involve other features of adjunct control, instead of (or in addition to) the antecedent of PRO.

In this section, several issues have been considered for the linguistic input, as well as children's perception of the input. These have implications in general for the relevant input where evidence would be observed, and the form of evidence for the adult grammar. The next sections consider these implications for adjunct control, focusing first on the availability of adjunct control in the input, followed by evidence in the input.

3. Availability

The linguistic input is represented here by transcripts of speech to children from CHILDES (MacWhinney 2000). The analysis included all transcripts from the North American English corpus,[5] with the exception of transcripts from children older than age 7 as discussed above, and transcripts with interviews between a parent and interviewer with no child present.

5. All transcripts are from the following corpora: Bates, Bernstein, Bloom, Braunwald, Brent, Brown, Clark, Garvey, Gathercole, Gelman, Gleason, Hall, HSLLD, Kuczaj, MacWhinney, Morisset, Nelson, NewEngland, NewmanRatner, Peters, Post, Sachs, Snow, Soderstrom, Suppes, Tardif, Valian, VanKleeck, and Weist.

Instances of adjunct control were identified by searching for each complementizer followed by the string "ing" (Broihier & Wexler 1995). Non-finite complementizers included in the search were *after, before, while, when, without,* and *instead of*, which were then hand coded to exclude false positives (e.g. "what happens after spring"). The results for each complementizer are presented in Table 1, which shows the number of utterances with adjunct control in the input (adult), and the number produced by the target child.

Table 1. Adjunct control in North American CHILDES, raw counts

Complementizer	Adult	Target child
after	35	5
before	31	1
while	11	3
when	5	3
without	128	26
instead of	121	23
Total	**331**	**61**

Based on these counts, the following observations can be made for adjunct control in this timeframe:

- Adjunct control is available in the input before age 7.
- Children produce adjunct control before age 7.
- The instances with *without* and *instead of* are much more frequent than with *after, before, while* and *when*, for both children and adults; this contrast reflects the optionality for the lower frequency set of complementizers between a non-finite or finite frame, compared to *without* and *instead of*, which can only appear in a non-finite frame:

(2) a. John called Mary {after / before / while / when} PRO drawing a picture.

b. John called Mary {after / before / while / when} he drew a picture.

(3) a. John called Mary {without / instead of} PRO drawing a picture.

b. *John called Mary {without / instead of} he drew a picture.

Therefore, adjunct control is available in the input, and children are sensitive to at least some aspects of the dependency, particularly the respective frequency by complementizer.

Meanwhile, the counts in Table 1 do not illustrate the frequency of the utterances with adjunct control compared to other utterances in the input, or the distribution of these counts over time (Gries 2008; Gries 2010; Wang & Trueswell 2019). This information is represented in Figure 1, which plots children's and adults' utterances with adjunct control by two measures of development: children's age in years and children's mean length of utterance (MLU). These measures are correlated, although in children's own productions, adjunct control is better predicted by MLU than by age. To illustrate the frequency of these utterances, Figure 1 also shows all transcripts in the corpus plotted by the age and MLU of the target child; a mean of 341 utterances were produced in each transcript.

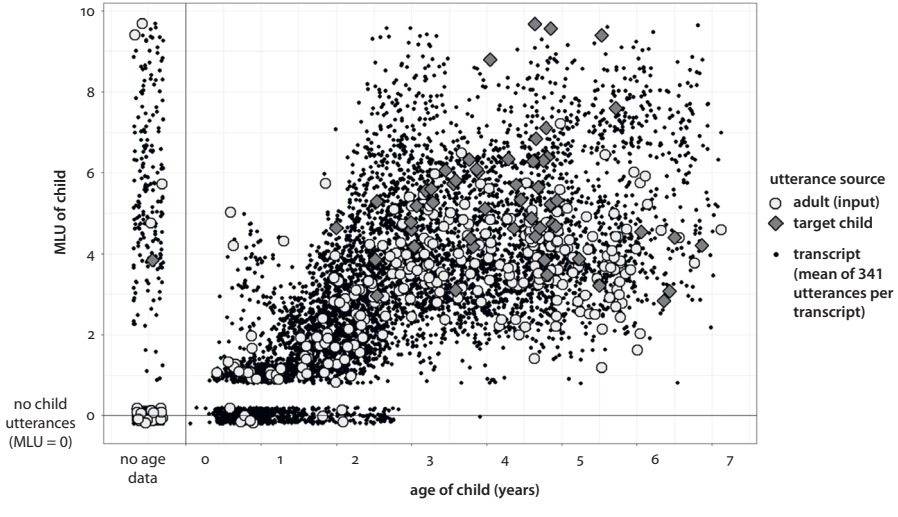

Figure 1. Instances of adjunct control in the input (produced by adults and siblings of the target child), and instances produced by the target child, plotted by age and mean length of utterance (MLU) of the target child

Importantly, adjunct control is available in the input at all ages, although at a relatively low frequency throughout: from the ages of 2–5 years, children encounter one utterance with adjunct control for every 2,000–3,000 utterances. For comparison with other complex structures, this is less than 10% of the frequency of passive constructions (Nguyen & Pearl 2018; Nguyen & Pearl 2019), which in turn are less frequent than object relative clauses (Roland, Dick & Elman 2007).[6] That is, adjunct control does occur in the input, but at a lower frequency than other structures for which non-adultlike behavior is reported at similar ages (for reviews, see Huang et al. 2013; Adani, Stegenwallner-Schütz & Niesel 2017).

Next, sentences with adjunct control are generally produced by children with an MLU of at least 4 (with the earliest productions between the ages of 3 and 4). This shows that children produce the relevant non-finite contexts far younger than age 7; however, children's non-adultlike behavior in previous studies was determined based on interpretation (of the antecedent), rather than form (of the non-finite adjunct). Therefore, evidence in the input may also depend on the availability of subject control, compared to other antecedents.

To assess this availability, the utterances from Table 1 were hand coded for the antecedent of PRO. In addition to subject control, possible antecedents included the following categories (Wexler 1992; Goodluck 2001; Williams 1992; Landau 2015; Landau 2017; Green 2018a):

- a non-subject antecedent in an otherwise expected subject control context, e.g. *Mary* in (1)
- arbitrary PRO, as in (4)
- logophoric PRO, as in (5)
- an unclear antecedent – although this could be resolved in most cases by referring to previous discourse, this was not possible in a few cases when the utterance wasn't coherent, or when the speaker switched topics in the conversation before completing the utterance

(4) It was good to call after PRO drawing a picture.

(5) The flower wilted after PRO drawing a picture of it.

Of the 392 utterances with adjunct control from Table 1, nearly all had a subject control interpretation. The instances which did not are presented in Table 2 (input utterances) and Table 3 (target child's utterances):

6. In an analysis of the Brown and Valian corpora, Nguyen and Pearl (2018, 2019) reported 361 passive utterances in 113,024 total utterances, or 1 passive for every 313 utterances. Meanwhile, Roland et al. (2007) reported even greater raw counts for object relative clauses in the Brown corpus alone, with 608 object relatives, 1,460 reduced object relatives, and 658 object infinitive relatives.

Table 2. Adjunct control with non-subject antecedent, input utterances

Child age (years)	PRO referent	Utterance
1	arb	That would be a good way to get <to things>. instead of reaching.
2	arb	I have a good rule that we have at school. to raise our hand instead of yelling.
	unclear	Without finishing it.
	unclear	Nothing without spelling anything.
3	non-subject	I thought we could give her some tea before going to bed from this pretty little tea pot. (from discourse, PRO clearly refers to "her")
	logophoric	So it won't fall down without tying it to your chin.
	unclear	After (.) sliding though.
4	unclear	&-um when you're here alone with, when you, after reading the four seasons get him to just tell me for a few minutes about something that you did and then we'll do the same thing with Jake.
	unclear	Eleven o'clock at night after sitting up in bed for two and three hours.
	unclear	Even after being here all this time.
	unclear	Maybe after (.) coming back [unintelligible].
5	logophoric	An(d) I knew that if anyone would takes this home it would take up too much room, so it would be easier to carry without dropping.
	arb	Going three days without making a juice circle really blew your mind.
	arb	Humming while eating noodles.
	arb	There's no breaking without breaking.
	arb	It helps to show that maybe these are muscles. without having to draw all the in, all the muscles there.

Table 3. Adjunct control with non-subject antecedent, target child's utterances

Child age (years)	PRO referent	Utterance
2	unclear	And after playing +… with with all my
3	non-subject	Yeah but when trying to catch daddy (.) daddy put me under the water.
	arb	Instead of eating a lot (.) that would be good.
5	logophoric	(In)stead of walking, car is better going to school.
	arb	And [/] and that was the most important [: important] [* d] job instead of doing the prayer.
	arb	There's no making without breaking.
	unclear	Without catching.
	unclear	Maybe after (.) coming back [unintelligible].
6	arb	That's what's fun about [unintelligible] looking out the window without having to be driving.

The utterances in Table 2 demonstrate that non-subject antecedents occur in the input, both due to speech errors, and also in non-obligatory control constructions. In children's own productions in Table 3, the counts of these categories occur in similar proportions. Further conclusions from Tables 2 and 3 are limited, however, before considering the evidence that would be available from observations with obligatory control, or other forms of evidence in the input. This evidence is the focus of the following sections, which consider the following hypotheses:

a. evidence for attachment height and c-command is available in the input, either
   i. by observing instances of adjunct control directly or
   ii. by generalizing the relevant features from similar structures.
b. evidence for these features is not in the input, and the features are specified in UG.

4. Evidence

If either attachment height or c-command by the controller are acquired from the linguistic input, then explicit predictions are made about the evidence in the input. Two types of evidence will be considered here: first, the conditions are spelled out for inferring the correct attachment height or c-command by observing instances of adjunct control directly. Next, these features may be generalized to adjunct control from similar structures, which may be more frequent or salient in the input.

4.1 Direct observation

For attachment height or c-command to be inferred by observing instances of adjunct control, there must be instances of adjunct control available in the input. Based on the CHILDES data in Section 3 above, this requirement is satisfied. However, while adjunct control is necessary, it is not sufficient; other factors to consider include the prerequisite linguistic knowledge and children's perception of the input. These factors are discussed in the following sections.

4.1.1 *Attachment height*

If children need evidence for adjunct attachment height, then incorrect attachment is predicted before the relevant evidence is encountered in the input. During this stage of incorrect attachment, non-adultlike interpretations are predicted for adjunct PRO.[7] Indeed, children in previous studies have accepted a range of

7. Crucially, this is not reversible: if children have non-adultlike attachment, then non-adultlike interpretations of PRO are expected. However, if children have non-adultlike interpretations of PRO, this does *not* entail that they have attached the adjunct incorrectly – this is one possibility, among others.

interpretations, and one prominent account is misattachment of the adjunct to the main clause (Goodluck 1981; Hsu, Cairns & Fiengo 1985; McDaniel, Cairns & Hsu 1991; Cairns et al. 1994; Adler 2006). Two primary forms of evidence have been considered for attachment height in previous studies, which make different assumptions about children's pre-existing knowledge.

4.1.1.1 *Lexical learning (Cairns et al. 1994)*

To account for children's behavior, Cairns et al. (1994) propose different non-adult grammar types, which predict non-adultlike interpretations before children acquire the adult grammar. These grammar types involve high attachment of the adjunct to the main clause (coordination) or low attachment (with c-command by the main clause object). Here, an important distinction is made between types of accounts: these non-adult grammar types can explain children's behavior in the study; however, the grammar types alone do not provide an account of acquisition – i.e. how a learner can transition from a non-adult grammar to the adult grammar.

To account for children's acquisition, Cairns et al. (1994) cite the Lexical Learning Hypothesis (Wexler & Chien 1985), noting that children must link each complementizer form with its selectional properties. They suggest that incorrect attachment results from mapping a complementizer form first to a coordinating structure, before acquiring the correct mapping for a non-finite adjunct. Evidence for the correct attachment would therefore be available with any instance of a given complementizer (not just as a non-finite adjunct), with the transition to the adult grammar resulting from "accretion of lexical and semantic knowledge" for each complementizer (Cairns et al. 1994: 264).

This description accounts for the transition to the adult grammar; however, it does not involve the acquisition of syntactic structure. It assumes instead that children already have the relevant abstract knowledge of coordination and subordination, with incorrect form-structure mappings. If adjunct attachment height is assumed as preexisting knowledge, then another source of evidence is needed for attachment height, or it is innate.

4.1.1.2 *Adjunct misanalysis (Adler 2006)*

In a different misattachment account, Adler (2006) suggests that the syntactic contrasts between non-finite adjuncts and coordinated clauses may be used as cues to attachment height. For example, the verb form in non-finite adjuncts contrasts with the finite form in coordinated clauses:

(6) a. John eats cake before {opening / *opens} presents.

b. John eats cake and (then) {*opening / opens} presents.

adapted from Adler (2006)

Other contrasts involve transformations; for example, cleft structures are possible with adjuncts but not coordinate clauses:

(7) a. It was before opening presents that Mary cut the cake.
b. *It was and John opened presents that Mary cut the cake.

Similarly, different profiles are observed for extraction:

(8) a. What$_i$ did you eat t_i before John opened presents?
b. *What$_i$ did you eat t_i and (then) John open presents?

Importantly, these examples involve positive evidence (Berwick 1985): in (6) the contrast in verb form (or finiteness) is a cue to the contrast in clause type, while in (7) and (8), the transformation itself is a cue – since the sentences are not possible with a coordinated clause, any instances in the input would need to be represented with an adjunct clause (Adler 2006).

However, the above evidence is still problematic for learning attachment height. In (6), the contrast in verb form aligns with the contrast in attachment height: that is, coordinated clauses and non-finite clauses have different verb forms and different attachment heights. This strategy makes the wrong predictions for finite adjuncts, though, which also have a finite verb form (grouping finite adjuncts with coordinated clauses):

(9) John eats cake before he $\left\{\begin{matrix}\text{*opening} \\ \text{opens}\end{matrix}\right\}$ presents.

This miscategorization may be avoided if the contrast in (6) is applied to a subset of the input data. However, this would involve domain-specific knowledge about which data to use for learning, merely shifting the learning problem rather than addressing it.

Meanwhile, the sentences in (7) and (8) must be represented accurately in order to be used as evidence for the correct attachment height. However, the influence of an immature parser, along with high sentence processing costs may affect the reliability of this evidence.

More broadly, both types of evidence discussed by Adler (2006) rely on prior knowledge of a contrast in attachment height between adjuncts and coordinated structures. Moreover, similar to the approach by Cairns et al. (1994), the relevant learning strategies involve mapping a lexical item (complementizer) to abstract structure (adjunct clause), by abandoning an initial incorrect mapping (coordinated clause). These mappings are important, but they require the attachment height for adjuncts to have already been acquired. Again, attachment height must either be innate here, or acquired using another form of evidence. A final possibility for attachment height is discussed in the following section.

4.1.1.3 *Binding across clauses*

The next type of evidence to consider for attachment height involves binding relations across clauses, as in (10) and (11):

(10) He_1 called Mary before $\text{John}_{*1/2}$ left for the store.

(11) John called her_1 before PRO meeting Mary_1 at the store.

In (10), the pronoun *he* c-commands *John*, and co-reference is ruled out by Principle C (Chomsky 1981). However, co-reference is possible if the adjunct is attached high. Thus, if children have a grammar with high attachment, negative evidence is needed against co-reference in sentences like (10), which may then be used to infer the correct (lower) attachment height.[8]

Meanwhile, syntactic evidence against a low attaching adjunct is seen in sentences like (11), with co-reference between *her* and *Mary*. If children have a grammar with low attachment, then co-reference in the input with this configuration would provide positive evidence for the correct (higher) attachment height.

For both (10) and (11), the relevant evidence involves several assumptions which are problematic for acquisition. First, evidence against the co-reference in (10) might be available in the form of indirect negative evidence (Xu & Tenenbaum 2007); however, previous research on children's acquisition of Principle C finds that children already reject co-reference in this configuration from as young as 3 years of age (Crain & McKee 1985; Crain & Thornton 1998; for reviews, see Lust, Eisele & Mazuka 1992; Guasti 2017). This timeline is inconsistent with studies on adjunct control, where children's non-adultlike interpretations were observed until 5–6 years of age.

Alternatively, children might acquire a high attachment grammar initially but get evidence for the adult grammar before age 3. However, if the relevant evidence involves referential dependencies across multiple clauses, the timeframe is further limited by children's parsing abilities at this age.

More importantly, using binding across clauses as evidence for attachment height involves the crucial assumption that the relevant configurations will be available in the linguistic input. However, for both (10) and (11), the critical anaphoric relations are highly infrequent, especially if the relevant timeframe is limited by other factors like the developing parser (Sutton 2015; Gerard 2016). Furthermore, this type of evidence depends on the co-reference interpretation, which children may not always access: if a different referent is assigned the intake than from the input, then this will provide evidence for the incorrect attachment height (Lidz &

8. As (10) is finite, this strategy involves an additional generalization from finite to non-finite adjuncts (discussed further below).

Gagliardi 2015; Omaki & Lidz 2015). Thus, it is unlikely that binding relations alone are used as evidence for attachment height for non-finite adjuncts.

Attachment height will be addressed again in the section on generalization; the following section considers the evidence for inferring a c-commanding controller.

4.1.2 *C-command by the controller*

Inferring the c-command relation between the main clause subject and adjunct PRO is a two-step process:

1. Identify the set of possible antecedents for adjunct PRO (i.e. the main clause subject).
2. Determine that the dependency is due to c-command, as opposed to e.g. a discourse or agent preference or based on a property like animacy, which are also likely to involve the main clause subject.

It is assumed that before reaching step 2, a learner has already acquired the correct attachment height, either from other evidence in the input, or attachment is specified in UG (Goodluck & Behne 1992). Otherwise, the inference in step 2 cannot be made based on a hierarchical relation.

Meanwhile, these steps must be indirect on some level: with just a single instance of adjunct control in the input, the interpretation of PRO is consistent with multiple grammars. For example, in addition to a strict subject (adult) grammar, the co-reference in (1), repeated below as (12), is also consistent with an agent grammar, a sentence-internal grammar, a free reference grammar, and others.

(12) John_1 called Mary_2 after $\text{PRO}_{1/*2/*3}$ drawing a picture.

All things equal, inferring that the antecedent of PRO is the main clause subject therefore requires multiple instances of adjunct control. However, children's interpretations in previous studies suggest that this inference will be problematic, for any type of learning mechanism (domain-specific or domain-general).

Traditionally, children with a non-adult grammar will encounter some form in the input which is consistent with the adult grammar but not with the non-adult grammar, and this form will be evidence for the adult grammar (Gold 1967; Pinker 1979; Grimshaw & Pinker 1989; Pinker 2009). This logic is discussed in Section 4.1.1.2 above for encountering syntactic evidence against a coordination grammar. However, as discussed in Section 2.2 above, children with a non-adult grammar of adjunct control will access adultlike interpretations *and* non-adult interpretations of the linguistic intake. As a result, the set of interpretations generated by the non-adult grammar is a superset of the interpretations generated by the adult grammar. These relations are illustrated in Figure 2.

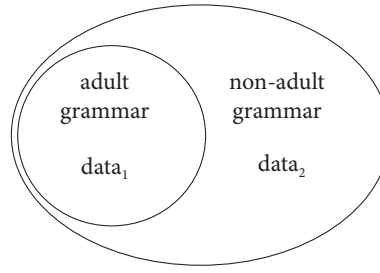

Figure 2. Subset-superset relation between the adult grammar and non-adult grammars for adjunct PRO (sentence-internal and free reference). While the adult grammar only includes $data_1$, the non-adult grammar includes both $data_1$ and $data_2$

This is inconsistent with the Subset Principle, which posits that children will select the subset language over the superset language (Berwick 1985; Manzini & Wexler 1987; Wexler & Manzini 1987; Wexler 1990). Additionally, transitioning to the adult grammar requires negative evidence (Berwick 1985; Gold 1967; Baker 1979; Manzini & Wexler 1987; Pinker 2013; Heinz & Riggle 2011).

One potential option for this involves the size principle, where smaller hypotheses are considered to be more likely than larger hypotheses (which generate a superset of the data generated by a smaller hypothesis), and exponentially more likely as more data that is observed that is compatible with both hypotheses (Tenenbaum 1999; Tenenbaum & Griffiths 2001; Xu & Tenenbaum 2007). However, this logic does not work with evidence for the subject as the antecedent of PRO, and highlights a more general problem with acquiring syntactic constraints on anaphora.

A non-adult grammar which allows a superset of the interpretations in the adult grammar is represented in Figure 2 – for example, a free reference grammar. The subset grammar is the strict subject (adult) grammar, which allows only a subject control interpretation. Under the size principle, children should transition from the superset grammar to the subset grammar by observing instances of adjunct control in the input with a subject control interpretation, represented by $data_1$ in Figure 2. The subset grammar should be considered to be more likely if data like $data_1$ occur in the input. Other than the few instances of speech errors and non-obligatory control in Table 2, $data_1$ (subject control) was indeed the only type of data in the input. However, this overlooks the additional noise introduced in the intake from extragrammatical factors, and the finding from previous studies that children allowed non-adultlike interpretations of adjunct PRO. If these children's grammars were not adultlike, then they would also allow non-adultlike interpretations of the input, represented by $data_2$ in Figure 1. Crucially, $data_2$ will provide evidence against the adult grammar *and* for the non-adult grammar (Fodor 1989; Fodor 1994; Grodzinsky 1989).

As a result, children's interpretations of adjunct PRO are not a reliable cue for inferring the c-command relation. Moreover, other syntactic dependencies face a similar dilemma: if children accept a wider range of interpretations in an experimental context, then the same interpretations are likely to be available in the linguistic input. Further implications are discussed in the final sections.

If the grammatical components of adjunct control are not inferred directly – from instances of adjunct control in the input – then evidence may instead be available from other structures, which may be generalized to structures with adjunct control.

4.2 Generalization from similar structures

The following sections will consider the possibility of generalizing attachment height and c-command to sentences with adjunct control from two similar structures: complement control, where the dependent element has the same form; and finite adjuncts, with a similar syntactic context.

4.2.1 *Complement control*

In sentences with complement control (as in (13), below), the same c-command relation is generally observed for the controller – that is, the closest c-commanding NP – with the same (null) form of PRO:

(13) a. John_1 wanted PRO_1 to run to the store.
b. John_1 told Mary_2 $\text{PRO}_{*1/2}$ to run to the store.

In previous studies, children have exhibited adultlike behavior for complement control before adjunct control (Hsu, Cairns & Fiengo 1985; McDaniel, Cairns & Hsu 1991; Cairns et al. 1994); however, children still accepted a wider range of interpretations initially, albeit at a younger age than for adjunct control. This suggests that children do not infer the antecedent of PRO from sentences with complement control, since the non-adultlike interpretations would provide incorrect evidence in the input in the same way as discussed above for adjunct control.

A generalization strategy also makes several assumptions: first, if children did infer the antecedent for complement control, then the same inference must not also be made for adjunct control. Next, if children generalize from complement control to adjunct control, this assumes that the relevant generalization is not made in the reverse direction, from adjunct control to complement control. Finally, adjunct control and complement control share various features; if children do generalize the correct features, then they must avoid generalizing others (e.g. attachment height or verb form).

These arbitrary assumptions about what is generalized suggest that children do not generalize from complement control to adjunct control, at least for a property like the antecedent of PRO.

4.2.2 *Finite adjuncts*

For the purposes of identifying the controller, finite adjuncts have the same attachment height as non-finite adjuncts, as demonstrated by the co-reference in (14) between *her* and *Mary*:

(14) John$_1$ called her$_2$ before he$_1$ met Mary$_2$ at the store.

Therefore, if children could acquire the attachment height for finite adjuncts from the linguistic input, then this might then be generalized to non-finite adjuncts.

However, the evidence needed for attachment height with finite adjuncts has the same problems discussed above for non-finite adjuncts – for example, evidence in the form of binding relations across clauses is unlikely to occur in the input, falling short of explaining how attachment height is acquired in general.

Additionally, the same assumptions are made for finite adjuncts as the ones outlined above for complement control: if children did infer attachment height for finite adjuncts, then the same inference must not also be made for non-finite adjuncts. Next, if children did generalize from finite adjuncts to non-finite adjuncts, this assumes that the relevant generalization is not made in the reverse direction, from non-finite adjuncts to finite adjuncts. Finally, finite adjuncts and non-finite adjuncts share various features; if children do generalize the correct features, then they must avoid generalizing other ones (e.g. the antecedent of the adjunct subject, or the verb form).

For example, the subject in finite adjuncts can grammatically corefer with any sentence-internal NP (barring contexts that would result in a Principle C violation, as in (10)), or sentence-external NP. Based on the input distribution in CHILDES (MacWhinney 2000), these interpretations are realized in the linguistic input (Table 4), with relatively matched frequencies for internal and external antecedents.[9] Therefore, generalization from the antecedent of subjects in finite adjuncts would result in the wrong conclusion about adjunct PRO.

These concerns suggest that children do not generalize a feature like attachment height from finite adjuncts to non-finite adjuncts. Furthermore, the sources of evidence considered above are not evidence for the abstract features of control (lexical learning and adjunct reanalysis), or they are not reliable (binding across clauses

9. Finite adjuncts were identified by searching for each complementizer followed by a pronoun, a bare noun, or determiner, and coded by hand for the antecedent.

Table 4. Frequencies of finite adjunct subjects in the input, by complementizer and subject antecedent. Counts are from the CHILDES transcripts discussed in Section 3

	Total	Co-reference with		
		Main clause subject	Other internal referent	External referent
after	346	193	25	128
before	717	383	83	251
while	307	92	30	185

and negative evidence from the size principle). Nevertheless, all children acquire a grammar with the correct attachment height and c-command by the controller. These abstract features must then be innate, i.e. part of Universal Grammar.

5. Universal grammar

Even though adjunct control itself is available in the input, evidence is not available for the main syntactic components of adjunct control, attachment height and c-command by the controller. This suggests that these properties are part of UG, which has implications for the hypothesis space of possible grammars considered by a learner. In particular, a learner will only consider the grammars where these properties are adultlike.[10]

If evidence for attachment height and c-command is not in the input, this raises the question of what *is* in the input. What features of adjunct control must be acquired? Predictions are also made for children's acquisition which may be tested empirically.

5.1 Role of the input

If the properties of adjunct control are abstract universals, then the input is needed for any variation. For example, finiteness distinguishes non-finite adjuncts from finite adjuncts and conjoined clauses. If tense can be used as a cue for the type of dependency, then it may be one of the features to acquire from the input for adjunct control.

10. A reviewer notes that these two properties alone may not be sufficient for obligatory control, as a learner must also recognize that control occurs in non-finite clauses. However, acquisition from the perspective of the learner does not distinguish between adjunct control contexts and non-finite adjuncts: in the input, a learner will perceive a non-finite adjunct with an empty subject, prompting a search for an antecedent to the subject. The task for the learner is to recognize the non-finite context, while UG identifies the antecedent in this context as the closest c-commanding NP.

5.1.1 *Finiteness*

Compared to the abstract syntactic properties, morphological tense is more accessible in the input: the contrast between finite and non-finite verbs is generally realized overtly, and is not limited to adjunct control. For example, the contrast between finite and non-finite clauses is also relevant for complement control, as well as syntactic bootstrapping for verb learning (Harrigan, Hacquard & Lidz 2019).

An additional cue to adjunct control is the form of the subject – while finite adjuncts generally have an overt subject, in non-finite adjuncts the subject is not pronounced (from the point of view of the learner). Therefore, a learner may look for an empty subject *or* non-finite morphology to identify an adjunct control dependency. Of course, this raises an additional question: would these cues be weighted differently in a language depending on their availability or reliability (Kempe & MacWhinney 1999)? For example, for languages which allow the subject to be dropped (e.g. pro drop, topic drop), the empty subject would not be as helpful for identifying an adjunct control dependency, since finite verbs may also appear without a subject (Haegeman 2000; Holmberg, Nayudu & Sheehan 2009; Huang 1984; Sundaresan 2014; Nunes 2014; Wu 1992). However, the probability of an empty subject is much higher in a non-finite clause than in a finite clause, even for languages which allow subject drop (since the probability of an overt subject in a non-finite clause is essentially zero). Children are sensitive to these contrasts in probability (for a review see Newport 2016). Therefore, if children use tense or subject form as a cue for adjunct control, then cross-linguistic predictions may be made for acquisition based on (a) the availability of tense (for languages which express tense overtly vs covertly), and (b) the reliability for predicting an empty subject in non-finite vs finite verbs.

For example, the cue to retrieve an antecedent is the missing subject, but if a missing subject may occur in a finite or non-finite clause (as in languages which allow the subject to be dropped), then tense information is also needed to identify the grammatical antecedent. Meanwhile, in languages which do not allow subject drop, if empty subjects are associated with non-finite clauses then an antecedent may be identified without tense information. If the retrieval mechanism is deployed as soon as possible, then children's parsing strategies may vary depending on these cues (to be tested in future research).

5.1.2 *Complementizers*

Another feature of adjunct control which varies cross-linguistically is the specific complementizers and the clauses that they select. For example, *without* may appear in a finite frame in both German and Dutch, but not in English:

Non-finite

(15) a. John cooks without PRO sleeping
b. Fritz kocht ohne PRO zu schlafen
Fritz cooks without PRO to sleep
"Fritz cooks without sleeping" adapted from Ler (1995)
c. Hij gaf, zonder PRO het te weten, het juiste antwoord
He gave, without PRO it to know the right answer
"He gave, without knowing it, the right answer."
adapted from dutchgrammar.com

Finite

(16) a. *John cooks without that he sleeps
b. Fritz kocht ohne dass er schläft
Fritz cooks without that he sleeps
"Fritz cooks without 'that he sleeps'"
c. Hij gaf, zonder dat hij het wist, het juiste antwoord
He gave, without that he it knew the right answer
"He gave, without 'that he knew it,' the right answer."

Therefore, children must learn the form for each complementizer, and whether it selects a finite clause, non-finite, or both. Alternatively, some complementizers may be categorized based on a particular feature to be learned in groups, although that would introduce the additional question of how this feature is acquired.

The issue of adjunct complementizers is relevant for any acquisition account of adjunct control: complementizers must be distinguished from conjoined clauses and complement clauses. If attachment height is an expected (innate) contrast, then the learning problem will involve identifying the complementizer forms and their selected clauses, and other lexical and semantic properties as discussed by Cairns et al. (1994). This has implications, then, for children's competence and the expected developmental trajectory. These are discussed further in the following sections.

5.2 Competence and acquisition

In previous studies on the acquisition of adjunct control, children's behavior has generally been attributed to a non-adultlike grammar. However, if both attachment height and c-command by the controller are already part of UG, then these properties of adjunct control would not need to be acquired from the input. Instead, the input would be used for mapping overt forms (like tense and complementizers) to the abstract structure in UG. This predicts that children might sometimes make the wrong mappings, but no stage should be observed with non-adultlike attachment height or a non-adultlike controller.

This prediction presents a puzzle for explaining children's non-adultlike behavior in previous studies. If children's competence was adultlike, why would they access non-adultlike interpretations?

One option is that children's non-adultlike interpretations were indeed due to a non-adult grammar, and the adult grammar is acquired independent of the linguistic input, via language-specific maturation (Manzini & Wexler 1987; Wexler & Manzini 1987; Wexler 1990; Wexler 1992; Wexler 2019). This is consistent with children's behavior, as well as the lack of evidence in the input.

Another consideration is that children's interpretations reflect their linguistic competence filtered through an immature parser. That is, children may have acquired the adult grammar, but processing limitations may interfere with the deployment of this grammatical knowledge in an experimental setting. These processing limitations may involve parsing mechanisms for antecedent retrieval (Gerard et al. 2017), as well as the complexity of the task itself (Gerard et al. 2018). For children to access adultlike interpretations consistently, development will then involve domain-general memory mechanisms, which can interface with language and with other specific domains (Nairne 1988; Nairne 1990). This development is likely to affect children's interpretations (for reviews, see Feigenson 2007; Cowan 2001; Courage & Cowan 2008).[11]

Finally, other processes may be more sensitive to specific input frequencies, as discussed above for potential cues for adjunct control in the input (for further discussion, see Van Dyke & Johns 2012; Omaki & Lidz 2015; Gerard 2016). For example, children may not have a strong enough link between the overt forms of tense or complementizers and the corresponding structures.[12] This explanation may also be given along with an account of limited processing resources: in both cases, non-adultlike interpretations are due to problems with deploying adultlike syntactic knowledge. Also, their predictions can be tested in an experimental context (discussed further below).

Importantly, the source of children's non-adultlike interpretations does not affect the arguments above about the lack of evidence in the input for attachment height or a c-commanding controller; for example, children are still likely to access non-adultlike interpretations of adjunct control in the input, regardless of the source of these non-adultlike interpretations.

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11. See also Frank (1998) on non-adultlike behavior due to processing limitations with language-specific development.

12. This second option is similar to the account proposed by Cairns et al. (1994) in that adultlike behavior is achieved by forming adultlike mappings between lexical forms and abstract structure.

5.3 Predictions for the input

Although most types of adjunct control exhibit subject control, exceptions exist depending on various aspects of the dependency. To account for this variation, evidence must be available in the input in some form. For example, in (17), the controller is the main clause patient, rather than the subject:

(17) a. $John_1$ thanked $Mary_2$ for $PRO_{*1/2}$ running to the store.
b. $John_1$ was thanked by $Mary_2$ for $PRO_{1/*2}$ running to the store.

This exception with the complementizer *for* is observed across languages with the corresponding complementizer. This means that some aspect of the meaning of *for* is associated with control by the patient, or that evidence in the input is available for this exception.

To test this prediction, an additional corpus search was conducted for non-finite adjuncts with the complementizer *for*, using the same methods as described above. The raw counts are presented in Table 5.

Table 5. Frequency of antecedents in non-finite *for* by adults (speech to children) and children (speech by children) in CHILDES

	Total	Co-reference with		
		Main clause subject	Other internal referent	External referent
adult (input)	326	42	281	3
target child	36	8	28	0

The data here raise two main points. First, compared to the other non-finite complementizers, the adjuncts with *for* occur at a high frequency (comparable to *without* and *instead of*), and should therefore be more salient than the lower frequency adjuncts.

Next, unlike the other non-finite complementizers, which occurred in the input with only subject control interpretations, an overwhelming majority of adjuncts with *for* have an object or other internal NP as the controller, as in the following examples:[13]

13. The search of *for* followed by the string "ing" also returned utterances such as the following:

(iii) They're not for eating.
(iv) Where're the songs for dancing?
(v) This one's for something else.
(vi) Mommies are not for hitting.

These instances were not included in the analysis.

(18) a. Can you$_1$ scold Jennifer$_2$ for PRO$_{*1/2}$ stepping on the truck?
b. What did Aunt Carey$_1$ buy you$_2$ at the store for PRO$_{*1/2}$ being a good sharer?
c. You$_1$ yelled at him$_2$ today for PRO$_{*1/2}$ chewing your slippers.
d. I$_1$ have a little present for you$_2$ for PRO$_{*1/2}$ coming today.

If children are sensitive to different distributions of antecedents, this is the kind of striking contrast that might be relevant for acquisition. This would be in comparison to a contrast between strict subject control and e.g. a discourse bias for the subject interpretation, which would only be detectable in a minority of instances.

However, while some variety is observed within the instances of *for* adjuncts, 70% of the instances occurred in the frame 'thank you for ___ing,' as in:

(19) a. Thank you for helping me.
b. Thank you for letting Mommy finish her breakfast.
c. Thank you for carrying socks.

This frequent frame may start out as a larger chunk, to be linked later to the *for* non-finite frame. Meanwhile, the discourse contexts for the utterances in (18) strongly support a patient interpretation for the adjunct subject. These utterances, along with the instances with the patient as the subject, may provide the relevant evidence against strict subject control for *for* adjuncts.

This predicts, however, that similar evidence will be available in the input for other languages. It also predicts that children would treat *for* adjuncts like the other non-finite adjuncts until the relevant evidence is available. Alternatively, the meaning of *for* as a complementizer may be associated already with the patient antecedent, so that identifying the complementizer form-meaning mapping would be sufficient for acquisition; this would involve additional language-specific information to be specified in UG.

6. Discussion

This paper has considered the options for acquiring adjunct control. Although adjunct control is available in the input, this is not sufficient for acquiring the main syntactic properties of adjunct control. Observing instances of adjunct control directly may provide information about overt features in the dependency, but not abstract features like the correct attachment height of the adjunct or the controller as the closest c-commanding NP. Similar issues arise when considering the possibility of generalizing from other structures, which involve arbitrary assumptions about generalization.

Without evidence in the input for these key components of adjunct control, they must be innate – considered here as principles in UG. This argument from the

poverty of the stimulus instead involves a different type of evidence in the input for acquiring adjunct control, and makes further predictions about the input. The following sections consider the implications of this account – for control, for other dependencies, and for acquisition.

6.1 Other types of control

Accounting for the adjunct control as a dependency requires a syntactically defined locality constraint. This is supported by crosslinguistic judgments, as well as in experiments which control for the discourse context (Parker, Lago & Phillips 2015; Kwon & Sturt 2014; Kush & Dillon 2020; Broihier & Wexler 1995; Adler 2006; Gerard et al. 2018; but see Green 2018b). These judgments are also represented in the linguistic input, which consists nearly exclusively of subject control.

These instances of adjunct control are generally considered to be obligatory control in that they require a local antecedent. Meanwhile, non-obligatory control is also observed in temporal adjuncts (Williams 1992; Landau 2015; Landau 2017; Green 2018a) as in (4) and (5), repeated below as (20) and (21):

(20) It was good to call after PRO drawing a picture.

(21) The flower wilted after PRO drawing a picture of it.

As observed in Section 3, both of these occur in the input, and are produced by children. However, there are several reasons not to consider these occurrences as evidence in the input for non-obligatory control.

In previous studies, children have accepted an external antecedent for sentences with obligatory control (McDaniel, Cairns & Hsu 1991; Cairns et al. 1994; Broihier & Wexler 1995; Adler 2006). Therefore, development must involve a change to strict subject interpretations for obligatory control, while still allowing external interpretations for non-obligatory control as in (20) and (21). If children's external interpretations are due to a non-adult grammar, then these interpretations in the input are of type $data_2$ in Figure 2. With a free reference grammar, sentences like (20) and (21) may also be parsed as $data_2$; that is, these sentences would be consistent with the non-adult grammar and would not provide evidence for non-obligatory control until after the adult grammar is acquired.

Meanwhile, regardless of the source of children's non-adultlike external interpretations, they are likely to occur at comparable frequencies to the counts in Table 2. Therefore, if a learner uses instances like those in Table 2 as evidence for non-obligatory control, then non-adultlike external interpretations are just as likely to provide incorrect evidence against obligatory control. Future research will

further examine these implications for acquiring obligatory and non-obligatory control (Landau 2021).

6.2 Other dependencies

This paper discusses the acquisition of adjunct control based on a hierarchical relation (c-command by the controller) and attachment height. In addition to adjunct control, other dependencies are also defined in terms of hierarchical relations, so much of the logic discussed here may be applied more generally.

For example, for any referential dependency, an antecedent must be identified to resolve the dependency. Consider a syntactic dependency between X and Y, where the grammatical antecedent may be identified by some constraint (e.g. c-command and/or locality):

(22) X [Y]
c-command

If the relevant constraint has not yet been acquired, then an alternative strategy is needed to resolve the dependency; for example, by retrieving an antecedent from the discourse:

(23) discourse
V W X [Y]

Additionally, there must be evidence available in the input to (eventually) acquire the relevant syntactic constraint. Otherwise, without this evidence, some aspect of the dependency must be available in UG; this will make further predictions similar to adjunct control about factors like exceptions, experimental contexts, etc.

Languages vary in their inventories of syntactic dependencies, with some dependencies observed more universally than others. Positing a domain-specific feature in UG may account for more widely observed dependencies, while evidence is needed in the input in other cases. Arguments identifying which features are in UG often (reasonably) appeal to this universality, or lack thereof; this paper is concerned also with the transparency of a given feature in the input: for abstract properties which are not directly observable from the linear input, evidence for these properties may be more elusive, even when the relevant structures are available in the input. Attachment height and c-command are examples of such properties (with the same logic for locality in other frameworks).

6.3 Role of the argument of the poverty of the stimulus

This paper presents an argument from the poverty of the stimulus that the abstract components of adjunct control are innate. Evidence for these components does not occur in the input, so they must be available from another source. If attachment height and the controller are part of UG, then common features of control across languages may be explained without requiring redundancy in the input.

More broadly, based on the type of evidence that is *not* available and because these features of control are *not* learned, the conclusions about evidence in the input are applicable to linguistic dependencies more generally: if the actual elements of a dependency are not reliable for inferring the properties of the dependency, then a different form of evidence is needed for these properties. This was the case for adjunct control, as children's non-adultlike interpretations of adjunct PRO were likely to provide incorrect evidence about the adult grammar. Similarly, non-adultlike interpretations have also been observed for other types of anaphora (Chien & Wexler 1990; McKee 1992; for a review see Conroy et al. 2009), as well as A movement (Manzini & Wexler 1987; Orfitelli 2012; Mateu 2016, i.a.) and A-bar movement (Tavakolian 1981; Friedmann, Belletti & Rizzi 2009; Adani et al. 2010, inter alia; but see Hamburger & Crain 1982; Gagliardi, Mease & Lidz 2016).

For many of these general phenomena, innate components have been proposed, based on the poverty of the stimulus. Meanwhile, children's non-adultlike behavior is often accounted for by a non-adult grammar. These accounts may achieve descriptive adequacy for children's non-adultlike behavior; however, if evidence is not available in the input for the non-adult grammar *and* for the transition to the adult grammar, then this casts doubt on the explanatory adequacy of the grammar. If both forms of evidence are not available, then either a different non-adult grammar or extragrammatical sources are needed to account for children's behavior.

6.4 Conclusion

This paper considered how adjunct control is acquired and compared different sources of evidence in the linguistic input. These options did not provide evidence for the key grammatical components of adjunct control, suggesting that these components are innate, with other more overt forms of evidence in the input. Future research will further investigate the predictions of this evidence, as well as the more general implications for the content of UG.

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The (null) subject of adjunct infinitives in spoken Spanish

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In this paper, I present a corpus study of adjunct infinitives in spoken Spanish, investigating null and overt subjects with respect to their control properties. I provide quantitative as well as qualitative data which show that (i) some instances of (null) subjects in adjunct infinitives do not easily fall into a division of predicative vs. logophoric control (Williams 1992), but that topicality is a relevant factor as well (Landau 2013, 2019), and (ii) control in spoken Spanish adjunct infinitives is a scalar phenomenon, being located at the syntax-pragmatics interface.

1. Introduction

Adjunct infinitives have raised interest in the literature on control because of their hybrid status with respect to Obligatory and Nonobligatory Control (cf. Williams 1992; Landau 2013; Green 2019). In the linguistic literature on Spanish, adjunct infinitives have been a major object of study, also because of their particular property of licensing overt, nominative subjects (Hernanz 1999; Piera 1987; Mensching 2000; Pöll 2007; Vanderschueren 2013; Herbeck 2015a; b; among others). It has been argued that subjects in Spanish adjunct infinitives have some properties of *pro*, sanctioned by abstract AGR on T (Rigau 1995; Torrego 1998). This raises the question whether the null subject in these configurations can have properties comparable to *pro* in finite clauses.

In this paper, I investigate this question by means of spoken corpus data from the PRESEEA (2014–) Madrid sample and CORPES XXI (RAE; subcorpus Spain).[1] I analyze the subject of infinitives introduced by the prepositions *al* 'when', *antes de* 'before', *después de* 'after', *para* 'for', and *sin* 'without' with respect to (i) phonetic re-

1. All English glosses, translations and emphasis that appear with corpus examples from PRESEEA (2014–) and CORPES XXI (RAE) in this paper have been added by myself.

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alization, (ii) local vs. non-local control, and (iii) [±human]. The data indicate that control into adjunct infinitives is not binary, but it quantitatively has a scalar basis in that local subject control is the preferred option, but several other strategies exist to a lesser degree. This is due to the fact that control into adjunct infinitives depends on a variety of factors (see Landau 2013; Green 2019), such as the adjunction site of the infinitive, the type of preposition, and the type of nonfinite verb. I furthermore provide evidence that non-local control in spoken Spanish cannot be reduced to logophoricity, but topicality has to be taken into account as well (Kawasaki 1993; Landau 2013, 2019).

Overt subjects in Spanish adjunct infinitives will be shown to have opposing properties to null subjects so that they can be considered the result of an 'anti-logophoricity' and, possibly, 'anti-topicality' effect.

This paper is structured as follows: first, I outline the theoretic background with respect to adjunct control in Spanish and discuss some unresolved issues. Then I present the corpus study of adjunct infinitives in spoken Spanish. Thereafter, I outline the theoretic implications of the results and present an analysis that does not rely on the PRO/*pro* distinction but situates adjunct control at the syntax-pragmatics interface, where various preference scales operate. Lastly, I discuss some properties of different prepositional infinitives and offer some tentative solutions.

2. Adjunct control between predication and logophoricity

Control into adjunct infinitives has been much discussed, also because of its hybrid nature between Obligatory and Nonobligatory Control (see Williams 1992; Landau 2000, 2013, 2019; Green 2019) and its susceptibility to pragmatic factors. Hornstein (1999) argues that adjunct control involves obligatory subject control except for rationale clauses:

(1) John$_i$ saw Mary$_j$ without PRO$_{i/*j}$ leaving the room. (Hornstein 1999: 76)

However, Williams (1992) observes that above all initial adjuncts sanction NOC, where the antecedent of the null subject must be the "logophoric centre" (in these sense of Sells 1987):

(2) a. Having just arrived in town, the main hotel seemed to Bill to be the best place to stay.
b. *Having just arrived in town, the main hotel collapsed on Bill.
(Williams 1992: 299)

Kawasaki (1993) and Landau (2013: 251) show that topicality is a further factor for control into adjuncts, explaining that definite DPs make more suitable controllers than indefinite ones:

(3) a. [After PRO_i collecting some money], a bank account was opened by the landlord$_i$.
b. *[After PRO_i collecting some money], a bank account was opened by a businessman$_i$. (Landau 2013: 251)

The following examples from Hernanz (1999: 2221 [adapted and glossed]) indicate that topicalization might also influence controller choice in Spanish:

(4) a. ***Los estudiantes***$_i$ increparon a la profesora después de $Ø_i$
the students rebuked ACC the teacher after of
entrar en clase.
enter.INF in class
b. ***A la profesora***$_j$, después de $Ø_j$ entrar en clase, los estudiantes
ACC the teacher after of enter.INF in class the students
la_j increparon.
her rebuked

In (4b), the topicalized object preferably controls the null subjects of the fronted adjunct infinitive.

Another restriction on NOC into adjunct infinitives that has been postulated is the [+human] requirement on the controller (cf. Landau 2013 and references), which would naturally follow either because of the arb interpretation or as a result of logophoric identification, given that only humans can be perspectival centers (cf. Landau 2013). Null subjects of adjunct infinitives could thus only be [–human] if they are obligatorily controlled by means of predication (cf. Williams 1992; Landau 2013).

However, when looking at spoken Spanish, counterevidence to the [+human] requirement on non-locally controlled null subjects can be found:[2]

(5) […] en Madrid la policía yo creo que sí que trabaja bien // para
in **Madrid**$_i$ the police I think that yes that work.3SG well for
ser una ciudad / grande / donde tienen // más problemas / que
$Ø_i$ be.INF a city big where have.3PL more problems than
aquí […] (CORPES XXI, PRESEGAL)
here
'[…] In Madrid, I think that the Police works well, taking into account that it is a big city, where they have more problems than here […]'

In this example, the null subject of *para ser una ciudad grande* '[for] being a big city' cannot be identified via local control because the controller *Madrid* is embedded

2. In the transcriptions, "/" stands for short pauses, "//" for pauses, and angular brackets indicate the presence of comments inside the transcriptions, such as <alargamiento> 'lengthening' (cf. PRESEEA 2008). I add "[…]" at the beginning and/or end of the citation of a corpus example to indicate that the cited passage is part of a wider context in the corpus.

inside the PP *en Madrid* 'in Madrid' and, thus, it does not c-command the null subject. Logophoric control is ruled out as well given the [–human] nature of the null subject, so that the question is what mechanism determines control in these cases. In fact, if topichood is a relevant factor for the identification of null subjects in NOC contexts (cf. Landau 2013), and if [+human] is not a strict requirement for topichood, examples like (5) would indicate that topic identification of null subjects also exists in adjunct infinitives.

3. The (null) subject of Spanish adjunct infinitives – PRO or *pro*?

One property of Spanish prepositional infinitives that has been observed in the literature (cf. Hernanz 1999; Mensching 2000) is the possibility of having overt nominative subjects:

(6) Después de actuar **Caballé**, cantó Carreras.
after of perform.INF Caballé, sang.3SG Carreras.
'After Caballé sang, Carreras performed.' (Rigau 1995: 280)

Overt subjects in infinitives underlie several restrictions, such as the preferred postverbal position. Furthermore, these subjects can be co-referent with a matrix antecedent (see (7)), or they can have disjoint reference (see (6); Hernanz 1999; Pérez Vázquez 2007):

(7) De tener yo dinero, me compraría una casa.
of have.INF I money me would-buy.1SG a house
'If I had money, I would by a house.'
(Hernanz 1999: 2265 [translations added])

Sundaresan (2014) and McFadden and Sundaresan (2018) have recently argued that Spanish adjunct infinitives represent a configuration in which [+R] *overt* subjects are licensed where a corresponding null subject is an instance of OC PRO. The authors build their evidence on obligatory co-reference, sloppy readings under ellipsis and *de se* readings. The first property is demonstrated by the following examples:

(8) [Al mostrar $EC_{i/*j}$ los primeros síntomas de la gripe], $Carlos_i$ se vacunó.
'Showing the first symptoms of flu, Carlos got vaccinated.'
(McFadden & Sundaresan 2018: 472)

(9) [Al mostrar María los primeros síntomas de la gripe], Carlos se vacunó.
'(With) María showing the first symptoms of flu, Carlos got vaccinated.'
(McFadden & Sundaresan 2018: 472)

Thus, overt [+R] subjects are licensed in contexts that do not sanction [+R] null subjects, i.e. small *pro*. The authors formulate the generalization that, in a consistent

pro-drop language with subject-verb-agreement like Spanish, *pro*-drop is not sanctioned in the subject position of a nonfinite control clause, if "the structural conditions for OC are met" (McFadden & Sundaresan 2018: 509).

However, one problem is that the null subject in the Spanish personal infinitive has been argued to have *pro*-like properties, sanctioned by abstract AGR (cf. Rigau 1995; Torrego 1998). Rigau (1995) offers the following example, in which the null subject of the adjunct is not co-referent with the matrix subject:

(10) Al desmayarte, empezaron a chillar.
in-the faint.INF-yourself (they)-began to shout.INF
'When you fainted, they began to shout.' (Rigau 1995: 286)

Even though McFadden and Sundaresan (2018: fn. 8) acknowledge this problem and link it to the reflexive clitic on the nonfinite verb, the following problems arise: (i) it would have to be explained why the reflexive clitic is not possible with the following subject infinitive (see Rigau 1995; Example (11) from Hernanz 1999: 2267):[3]

(11) *Fue penoso desmayarte en aquel lugar.
was.3SG sad faint.INF-REFL.2SG in that place
'It was sad to faint in that place'.

A second problem is that non-coreference (or non-control) of a null subject can also be found without a reflexive clitic on the nonfinite verb in spoken Spanish:

(12) y al sedarlo después ya estaba como dormido
and at-the sedate.INF-him after already was.3SG like sleeping
'and when they sedated him, he was already like sleeping afterwards'
(CORPES XXI, PRESEGAL)

Here, we are dealing with preposed adjunct infinitives introduced by *al* 'when/since', similarly to McFadden & Sundaresan's (2018) example in (8). In principle, we would expect the same referential possibilities of the null subject. However, OC is not enforced in (10) / (12).[4] Thus, if OC obtains as soon as the structural con-

3. As an anonymous reviewer points out, it could be argued that subject infinitives are more integrated into the structure than (some) adjunct infinitives. I will argue in Section 6.3 that the degree of integration of adjunct infinitives plays a crucial role for the identification of a null subject. In McFadden & Sundaresan's (2018) approach, it could thus be argued that in certain (non-integrated) adjuncts, the conditions for OC are not met and, thus, *pro* is licit.

4. As discussed in fn. 3, one could potentially argue that the adjunct infinitives in (10) and (12) are less integrated into the structure than the infinitive in (8) / (9), as an anonymous reviewer points out. However, in all of these cases, we are dealing with preposed *al*-infinitives so that it would have to be explained where the differences with respect to integration stem from.

ditions are met, it would have to be determined why OC is blocked in (10) / (12), but not in (8).

Note furthermore that similar examples to the ones discussed by McFadden and Sundaresan (2018) show properties different from OC or NOC PRO. Already Fernández (1987) observes that *al*-infinitives are possible with weather verbs:

(13) Al llover entra agua.
'When it rains, water enters.' (Fernández 1987: 128)

Here, the null quasi-argument is not controlled. Thus, there are null subjects in Spanish adjunct infinitives which are neither OC nor NOC PRO (see also Paz 2019 for discussion).

4. A corpus study of adjunct infinitives in spoken Spanish

To get a better understanding of null subjects in Spanish adjunct infinitives, a corpus study was conducted, examining the locality of the control relationship and the nature of the controller. First, I describe the data that have been examined. Then I turn to the main points of methodology. After that, I present and discuss the results.

4.1 The data

I first made a study of prepositional infinitives in the Madrid sample of PRESEEA (2014–). In order to obtain more data points, I carried out a follow up study of materials from the oral part of CORPES XXI (RAE; subcorpus Spain). Both corpora involve data from spoken Spanish.

I examined spoken data partly because one factor that has been claimed to influence controller choice is topicality and, thus, one question at stake was whether controller choice could be influenced by left-peripheral operations like topicalization, which are particularly frequent in spoken language.

I investigated adjunct infinitives introduced by 5 prepositions: *al* 'at-the', *antes de* 'before', *después de* 'after', *para* 'for' and *sin* 'without'. Infinitives introduced by *al* can either have a temporal or a causal meaning (Galán Rodríguez 1999; García Fernández 1999; examples from Hernanz 1999: 2307 [translations added]):

(14) Al salir del teatro, nos atracaron.
at-the leave.INF of-the theatre, us robbed.3PL
'When we came out of the theatre, we were robbed.'

(15) Al ser tan alta y desgarbada, los chicos se ríen de ella.
at-the be.INF so tall and ungainly the kids REFL laugh.3PL of her
'As she is so tall and ungainly, the kids make fun of her.'

Also *para*-infinitives do not form a semantically uniform category. On one hand, they can express the purpose, reason or intention for the event of the matrix clause (cf. Hernanz 1999: 2313):

(16) Robó una pistola para atracar un banco. (*ibid.*)
'(S)he stole a gun in order to rob a bank.'

On the other hand, *para*-infinitives can also appear without a purpose interpretation. As Hernanz (1999) and Galán Rodríguez (1999) observe, they can obtain a consecutive, concessive or conditional meaning. In these cases, the relation between the matrix and nonfinite clause is less strict and marked by a pause (cf. Hernanz 1999: 2315). The following demonstrates the concessive reading:

(17) Sabe mucha gramática para ser médico.
know.3SG much grammar for be.INF doctor
'Although he is a doctor, he knows a lot about grammar.'
(Hernanz 1999: 2315, citing Sánchez López 1995 [translations added])

When examining spoken data, the semantic categorization of these prepositions is sometimes ambiguous. For this reason, these fine-grained semantic differences could not be taken into account for the quantitative study. Some suggestions with respect to the influence of the different semantics of the relevant configurations will be made on a non-quantitative basis in Section 6.3.

Within the study of the Madrid sample of PRESSEEA (2014–), in total 340 adjunct infinitives introduced either by the preposition *al* 'at-the', *antes de* 'before', *después de* 'after', *para* 'for', or *sin* 'without' were analyzed. The sentences were extracted by means of word form searches of the relevant prepositions and subsequently classified with respect to their complement. *Antes de* 'before' and *después de* 'after' were classified together as 'temporal prepositions':

Table 1. Extracted prepositional infinitives from PRESEEA (2014–) Madrid

Preposition	Number of prep + infinitive
al ('at-the'; 'when')	42
temporal (*antes de* 'before' + *después de* 'after')	25
para ('for / in order to')	234
sin ('without')	39
Total	**340**

In order to obtain a higher number of adjunct infinitives, I carried out a follow-up study of the oral part of the CORPES XXI (RAE) database. The subcorpus was restricted to oral texts – specifically, to interviews and debates – from Spain from the years 2007–2016. The sentences were extracted via the CORPES XXI search mask,

indicating the word forms of the relevant prepositions plus an interval (+2 to the right) containing a nonfinite verb. After extraction of 2587 sentences, repetitions, false starts, and prepositional infinitives that were complements of verbs (e.g. *servir para* 'be useful for') were manually excluded.

Table 2. Number of analyzed prepositional infinitives from CORPES XXI

Preposition	Number of analyzed prep + inf
al ('at-the'; 'when')	275
temporal *(antes / después)*	153
para ('for / in order to')	1664
sin ('without')	215
Total	**2307**

In total 2307 adjunct infinitives from CORPES XXI were analyzed with respect to the (control) properties of their (null) subjects. In the next section, I outline the classification criteria.

4.2 Annotating controller choice for quantitative analysis

Data annotation with respect to the choice and type of controller was done manually. Determining type of control was done in a simplified manner because annotation of performance data without accessing speaker intuitions could not consider the fine-grained control types proposed in the literature.

The first category is local vs. non-local control. Control was considered [local] if the controller is situated in the matrix clause as a realized subject or object and it potentially c-commands the null subject of the infinitive, i.e. the controller is not embedded inside an NP or PP. I also considered local control if the controller was an implicit argument of a matrix verb, but not if it was an implicit controller of an adjective or noun. In case of [local] controller choice, I distinguished [subject] and [non-subject] control, the last comprising (experiencer) dative, accusative and implicit controllers of verbs (including implicit Agents of *se*-passives):[5]

(18) [local] + [subj]:
$[(XP_{NOM})_i\ [V\ (XP)]\ [_{PP}\ ec_i\ V_{inf}]]$

(19) [local] + [non-subj]:
$[(XP)\ [V\ (XP_{ACC/DAT})_i]\ [_{PP}\ ec_i\ V_{inf}]]$

5. In this sense, [local] vs. [non-local] control, even though inspired by the OC vs. NOC distinction, is not fully equal to it. In some theories, object and implicit control into adjuncts is classified as NOC (see Landau 2019 for discussion), while here, it was considered [local] matrix control for classification purposes.

Also classified as [local] were those cases in which the matrix clause containing the antecedent was elliptical, but it could be reconstructed from preceding contexts, which is very frequent in spoken discourse:

(20) [local] (elliptical):
E: ¿un chalet por qué? //
I: para tener un perro / (PRESEEA, Madrid, M11_004)
E: 'Why a chalet?
I: To have a dog'

The main clause can straightforwardly be reconstructed as *Quiero un chalet* 'I want a chalet', so that it was analyzed as local control with an elliptical 1SG subject.

I considered an infinitive to be [non-local] control if (i) there is no potential matrix controller, (ii) there is a potential matrix antecedent but the (pragmatic) context makes it unsuitable, (iii) there was an implicit controller of a matrix adjective or noun, or (iv) if a matrix controller does not potentially c-command the infinitive. The difference between (i) and (ii) is demonstrated by the following examples:

(21) no potential controller: [V [$_{PP}$ *ec*$_{arb}$ V$_{inf}$]]
[…] es para comentarlo de o / de otra manera (CORPES XXI, PRESEGAL)
'… [this] is [just] to comment on it in another way'

(22) potential, but unsuitable controller:
[(XP$_i$) V]. [V XP$_j$ [$_{PP}$ *ec*$_{i/arb}$ V$_{inf}$]]
[…] nunca tuve un aterrizaje tan bueno / el tío se portó / o sea / bajó con tanta suavidad que al tocar el suelo no lo no noté […] (CORPES XXI, PRESEGAL)
'I've never had such a good landing … the guy did very well, that is, he went down so smoothly that when Ø$_j$ touching the ground, I$_i$ didn't notice it'

(23) no creo que Ø$_i$ vivan en esta zona / yo creo más bien que / al Ø$_x$ ser como el punto donde<alargamiento/> hay muchas conexiones de autobuses en Manuel Becerra // sí que Ø$_i$ se ven más por eso (PRESEEA, Madrid, M13_018)
'I don't think that they$_i$ live in this area. I rather think that, Ø$_x$ being the point where… there are a lot of bus connections, in Manuel Becerra… one can see them$_i$ more there because of that'

In (21), there is no potential antecedent in the matrix clause. In (22), it is the plane that touches the ground in the external world and not the speaker.[6] In (23), the null subject of the adjunct infinitive refers to a place and not to the human matrix null subject 'they'.

6. In (22), an anonymous reviewer asks whether an interpretation, in which the null subject of 'when touching the ground' is interpreted as the speaker, is possible. This way, local control could obtain. However, given that it is the plane that touches the ground in the external world, I considered it not to be control by the matrix subject representing the speaker for classification purposes.

A special case of a [non-local] null subject that appeared in the data were null expletives:

(24) pero al no haber clases […] (CORPES XXI, PRESEGAL)
but at-the not have.INF classes
'but given that there was no class […]'

Apart from the locality of control, the subject of the infinitive was annotated as [null] or [overt]. If control is local and the subject is overt, the result is an emphatic pronoun or a floating quantifier. If the infinitive is classified as [non-local], an overt subject is [+R].

In a last step, null as well as overt subjects were classified as [+human] or [–human]. Note that the category [+human] also included metonymic cases, such as *las empresas* 'the companies', standing for standing for the workers.

It must be noted that, in several cases, it was not possible to determine controller choice, not even by considering the wider context. Out of the 2307 adjunct infinitives in Table 2, 345 had to be excluded so that 1962 sentences were analyzed with respect to [±local], [±overt], and [±human].

In the next section, I present the quantitative results.

4.3 Results

First, in the Madrid sample of PRESEEA (2014–), local control of null subjects is by far the most frequent strategy (see Table 3):[7]

Table 3. Overt and null subjects with respect to locality of control in the PRESEEA (2014–) Madrid sample

Prep.	Null		Overt		% overt
	Local	Non-local	Local	Non-local	
al	21	12	1	4	13%
antes/después	13	8	0	4	16%
para	163	49	1	3	2%
sin	29	4	2	0	6%
all	**226 (76%)**	**73 (24%)**	**4 (27%)**	**11 (73%)**	**5%**

In the case of overt subjects, the tendency is the opposite, local control applying in 27% of the cases.[8] However, overt subjects are generally not frequent (15/314 = 5%

7. 26 doubt cases have been excluded from the analysis.

8. Applying Fisher's Exact Test in R (R Core Team 2018), the association between phonetic realization of the subject and [(non-)local] control results significant ($p < 0.001$).

in total). With respect to [±human], I only found 7 cases of [–human] non-local null subjects, all with *al*-infinitives, including 2 null expletives. The following are examples of a non-local [–human] controller (see also (5)):[9]

(25) el coche hizo un trompo y al hacer el trompo él
the car made a spin and at-the make.INF the spin he
salió por la parte de atrás (PRESEEA, Madrid, M11_004)
went-out through the part of back
'The car did a spin and when it did a spin, he was thrown out of the back.'

(26) [Context: *la casa* 'the apartment']
E: claro / también es más práctico
sure also be.3SG more practical.M
I: no lo sé
not it know.1SG
E: ¿no? / al ser más pequeña ¿no?
no at-the be.INF more small.F
'E: Sure, it is also more practical. I: I don't know. E: Not? Given that it is smaller.' (PRESEEA, Madrid, M23_034)

In (25), the null subject can co-refer with the NP *el coche* 'the car', which is not inside the matrix clause, but in the immediately preceding discourse. In (26), the null subject of *es más pequeña* is not controlled by the null subject of *es más práctico* given the gender mismatch between the two.

In Table 4, I present the main quantitative results of the follow-up study of adjunct infinitives in the CORPES XXI sample:

Table 4. Overt and null subjects with respect to locality of control in the CORPES XXI (RAE; subcorpus Spain) sample

Prep.	Null		Overt		% overt
	Local	Non-local	Local	Non-local	
al	160 **(76,19%)**	50 (23,81%)	2 (7,41%)	25 (92,59%)	27/237 **(11,39%)**
antes / después	109 (85,83%)	18 (14,17%)	1 (8,33%)	11 (91,67%)	12/139 (8,63%)
para	1097 (80,01%)	274 (19,99%)	17 **(60,71%)**	11 (39,29%)	28/1399 (2%)
sin	170 (91,40%)	16 (8,60%)	0 (0%)	1 (100%)	1/187 (0,53%)
all	1536 (81,10%)	358 (18,90%)	20 (29,41%)	48 (70,59%)	68/1962 **(3,47%)**

9. Similarly to Example (22), an anonymous reviewer asks whether (25) could be a case of local control, given that the human matrix subject is at the same time part of the car. While it is true that an OC reading would be available, a native speaker I consulted pointed out that an interpretation, in which the car is the null subject of the adjunct infinitive, is also possible, above all given the immediate repetition of the VP *hacer el trompo* with the non-human subject.

Generally, overt subject frequencies are low (68/1962 = 3,47%). As can be seen, infinitives introduced by *al* have the highest overt subject frequencies (11%), followed by temporal prepositions (9%). Infinitives introduced by *para* or *sin* have lower numbers of overt subjects. With respect to control of null subjects, they have a local antecedent in most of the cases (1536/1894 = 81%). Furthermore, non-local null subjects in contexts of a potential matrix controller are rare, most instances being either elliptical infinitives (as in (26)), or infinitives in contexts without a potential matrix antecedent. Overt subjects are more frequently non-controlled (48/68 = 70,59%),[10] even though *para*-infinitives are an exception (11/28 = 39% non-controlled overt subjects).

It is interesting that the prepositional infinitive sanctioning the highest number of overt subjects – *al*-infinitives – also has the highest frequency of non-local null subjects (24%), including 6 null expletives. In fact, 6 out of 7 null expletives of the sample appear with *al*-infinitives (the remaining one with *sin*). This points to a special status of this type of infinitive with respect to its subject position (see also Vanderschueren 2013: 239ff for discussion of the high frequency of overt subjects in Spanish *al*-infinitives).

Having a look at the position of local matrix antecedents (see Table 5), subject control is expectedly the predominant strategy (1365/1536 = 89%), even though non-subject control (comprising dative (experiencers), accusative and implicit controllers) is possible (see also Paz 2019 for object control):

Table 5. Subject vs. non-subject local control (COPRES XXI (RAE) sample)

Prep.	Subj	Non-subj	Total
al	139 (86,9%)	21 (13,1%)	160
antes/después	101 (92,7%)	8 (7,3%)	109
para	964 (87,9%)	133 (12,1%)	1097
sin	161 (94,7%)	9 (5,3%)	170
Total	**1365 (88,9%)**	**171 (11,1%)**	**1536**

Let us turn to [±human] null subjects in adjunct control (Table 6).

As can be seen, [–human] null subjects in non-local contexts are rare (14/358 = 3,91% in total). This indicates that logophoricity might play a role in NOC adjunct control. However, [–human]/[non-local] null subjects do exist, which means that logophoricity and PRO_{arb} cannot be the only mechanisms. Most non-local [–human] null subjects occur with *al*-infinitives (11/50 = 22%, 6 null expletives

10. Applying Pearson's chi-squared test in R, the association between [±null] and [±local] is significant: χ^2 (1) = 103.73; $p < 0.001$.

Table 6. Null subjects and [±human] in adjunct infinitives in the CORPES XXI (RAE) sample

Prep.	Local		Non-local	
	Human	Non-human	Human	Non-human
al	154 (96,25%)	6 (3,75%)	39 (78%)	11 (22%)
antes/después	107 (98,17%)	2 (1,83%)	18 (100%)	0 (0%)
para	1084 (98,81%)	13 (1,19%)	272 (99,27%)	2 (0,73%)
sin	163 (95,88%)	7 (4,12%)	15 (93,75%)	1 (6,25%)
Total	**1508 (98,18%)**	**28 (1,82%)**	**344 (96,09%)**	**14 (3,91%)**

included), which is the type of infinitive sanctioning also most non-local controllers and most overt subjects.

It is also interesting that, even though OC should in principle sanction [–human] antecedents (via predication), non-human controllers are also very rare in these contexts (28/1536 = 1,82%).

Turning to overt subjects, these were always [+human] in local contexts (= 20/20), which is expected, given that strong subject pronouns have a [+human] requirement in Romance *pro*-drop (e.g. Cardinaletti & Starke 1999).

In the case of non-local *overt* subjects, *al*-infinitives even sanction slightly more [–human] than [+human] subjects (see Table 7):

Table 7. Non-local overt subjects and [±human] in the CORPES XXI (RAE) sample

Prep.	Human	Non-human	Total
al	8 (32%)	**17 (68%)**	25
antes/después	5 (45,45%)	**6 (54,55%)**	11
para	7 (63,64%)	4 (36,36%)	11
sin	1 (100%)	0 (0%)	1
all	21 (43,75%)	27 (56,25%)	48

Overt subjects have higher percentage of [–human] (27/48 = 56%), if compared with non-local null subjects (14/358 = 3,91%; see Table 6).[11]

11. Applying Fisher's Exact Test, the association between [±null] and [±human] with non-local subjects results significant ($p < 0.001$).

4.4 Discussion

The results of the preceding section point to the following conclusions:

i. Adjunct control cannot uniformly be classified as OC subject control with any of the examined prepositions (see Tables 4 + 5).
ii. Null subjects are in their vast majority [+human] (see Table 6).
iii. However, the existence of non-local [–human] null subjects and null expletives in spoken Spanish indicates that adjunct control cannot be reduced to predication or logophoricity nor can the null subject uniformly be OC or NOC PRO (see also Paz 2019).
iv. Overt subjects are, as expected, preferably [non-local], even though *para*-infinitives are an exception, overt subjects being more frequently [local].

    While null subjects are in their vast majority [+human], non-local *overt* subjects are [–human] in 56,25% of the cases in the CORPES XXI sample (Table 7). In fact, also Vanderschueren (2013), in her study of overt subjects in Spanish adjunct infinitives, observes that overt subjects are more frequently "non-dynamic" (65,2%), including abstract and non-dynamic inanimate NPs, than "dynamic" (*ibid*. 263).
v. Within different types of prepositional infinitives, *al*-infinitives have the highest referential flexibility with respect to [(non-)local] and [(non-)human] controllers. At the same time, they have the highest number of overt subjects and 8 of the 9 null expletives found in the two examined samples occur with this preposition.

However, it needs to be taken into account that the results reflect the annotation of spoken data, which includes several (non-reconstructable) elliptical sentences. In fact, some prepositional infinitives with [non-local] control almost seem to have root-like characteristics (like (26)), which are arguably least integrated into the syntactic structure and, thus, their subject position is predicted to have the highest referential flexibility. Furthermore, given the analysis of performance data, fixed criteria for the classification had to be applied, so that a null subject was classified as [–human] if it was so in the external world, leading to potentially ambiguous cases as in (25). However, unambiguous [non-local]/[–human] null subjects occur in the data, as in (5), (23) and (26), which indicates that NOC cannot be reduced to arb or logophoricity.

In the next section, I discuss some non-quantitative data with respect to null and overt subjects in prepositional infinitives.

5. Adjunct control in spoken Spanish data – some observations

On a non-quantitative basis, I would like to stress two phenomena with adjunct control in spoken Spanish: (i) there are structures which indicate that 'topic' control, apart from predicative and logophoric control, exists (cf. Kawasaki 1993; Landau 2013, 2019 for the relevance of topicality for controller choice). This indicates that the null subject shares some properties with *pro*, which has been linked to topic continuity (cf. Frascarelli 2007; Holmberg et al. 2009). (ii) phi-*Agree* does not always strictly apply even in cases of [local] control so that it is semantico-pragmatic rather than morpho-syntactic.

With respect to (i), several configurations can be found in which the controller is topicalized before the fronted adjunct infinitive:

(27) […] entonces ella / después de estar allí n eeh nueve años mm
then she after of be.INF there n[ine] eeh nine years mm
se casó (CORPES XXI, PRESEGAL)
REFL got-married.3SG
'[…] so she… after being there for n…eeh nine years… [she] got married'

(28) es decir eh tú para trabajar en un sitio te piden experiencia //
is say.INF eh you for work.INF in a place you ask.3PL experience
'That is … [you] for [you] to work in some place, they ask you to have experience' (CORPES XXI, PRESEGAL)

As can be seen, the topicalized controller is nominative, independently of whether local control holds with the subject (27) or object (28).

What is interesting is that these topicalized 'controllers' are produced in some instances in which matrix control cannot be established:[12]

(29) […] yo / al ser de esa zona / eeh los fines de semana no
I at-the be.INF from this region eh the weekends not
había otro divertimento […] (CORPES XXI, PRESEGAL)
there-was other entertainment
'Me, being from this region, eh, there was no other form of entertainment on the weekends'

12. At first sight, one could think that these 'topicalized' nominal expressions are actually 'overt subjects' of the infinitive, as an anonymous reviewer points out. If they were true overt subjects, one would expect them to appear above all in contexts in which they trigger non-co-referent interpretations. However, in their majority, they are co-referent with a matrix antecedent (as in (27) / (28)) and, thus, they rather seem to be (clause-external) (hanging) topics, which do not agree in Case with the matrix DP. However, further investigation into the exact syntactic position of these DPs is necessary.

(30) […] mis padres al tener un bar // no es / no e / no tengo
my parents at-the have.INF a bar not is not i[s] not have.1SG
ese recuerdo de / de ir […] (CORPES XXI, PRESEGAL)
that memory of of go.INF
'[…] My parents, given that they have a bar, it's not … it's not … I don't have this memory of going […]'

Furthermore, in (30), it is difficult to argue that *mis padres* 'my parents' is the perspectival center. This indicates that topic-identification might be a mechanism apart from predication and logophoric control (see also Landau 2019).

Another observation is that (ii) control, even if established with a local antecedent, is of a non-strict nature in that phi-mismatches can be found:[13]

(31) […] siempre **se** ha mirado hacia atrás pensando que cualquier
always **REFL.3** has looked towards back thinking that any
tiempo pasado fue mejor / sin acordar**nos** de los
time past was better without remember.INF-**REFL.1PL** of the
muchísimos defectos que […] (CORPES XXI, RAE)
many defects that
'One has always looked back thinking that any past time was better, without remembering the many defects that […]'

In some examples, there was a structural phi-mismatch involving impersonal forms, as between impersonal *se* and personal 1PL in (31), or between impersonal 2SG and personal 1SG. This might be due to the well-known inclusive interpretation that ARB readings can have. This indicates that we are not dealing with phi-*Agree* in the syntactic sense, i.e. PRO does not acquire phi-features syntactically from the controller.

In the following example, the reflexive clitic on the infinitive is 3rd person *se*, which agrees with the preverbal 3PL topic antecedent and not with 1PL inflection:

(32) porque tiene esa frase famosa / de que **los seres humanos** no
because have.3SG this phrase famous of that the human beings not
tenemos raíces como los árboles sino piernas y pies para
have.1PL roots like the trees but legs and feet for
moverse de un sitio a otro (CORPES XXI, RAE)
move-INF-REFL.3 from one place to another
'because there is this famous phrase that, the human beings, we don't have roots like trees, but legs and feet to move from one place to another'

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13. An anonymous reviewer points to the possibility that examples like (31) involve production errors, in which the speaker has lost track of grammatical details. However, these configurations are produced by speakers and, furthermore, this type of phi-mismatch seems to show some systematic patterns (e.g. the context of impersonal forms).

In (32), *se* on the infinitive enters a referential dependency with the 3rd person preverbal *los seres humanos* and not structural *Agree* with the matrix 1PL T/Agr.

In the next section, I outline a tentative analysis of the observed patterns in Spanish adjunct infinitives.

6. Towards an analysis: Discourse linking via C and preference scales for control

6.1 The case of null subjects in adjunct infinitives

We have seen that local subject control is by far the most frequent strategy in adjunct infinitives. Furthermore, null subjects are predominantly [+human]. However, non-local (arbitrary and discourse-identified) or non-controlled null subjects and overt, [+R] subjects set adjunct infinitives apart from OC. Furthermore, the existence of [–human], non-local null subjects is problematic for an analysis in terms of logophoric NOC. Note, however, that the null subject in adjunct infinitives still has properties different from finite null subjects, such as the high preference for local control and the availability of ARB interpretations without the impersonal *se*-clitic.

In Herbeck (2015b), I argued that finite *pro* is just a case of 'control' of a minimal pronoun (in the sense of Kratzer 2009; Landau 2015) via C – specifically, speaker/addressee coordinates in Force (see Sigurðsson 2011) – which is mediated by AGR. OC is the consequence of a reduced CP layer – a FinP, which only hosts internal *self-* (in the vein of Bianchi 2003; Landau 2015), but not external speaker/addressee coordinates (see also Haegeman 2004). Thus, identification of null subjects is (discourse-)linking of a minimal pronoun via C in *pro*-drop as well as control:

(33) DP V $[_{\text{ForceP}}\ \Delta_{\pm\text{speaker}/\pm\text{addressee}}\ [_{\text{FinP}}\ \text{Fin}\ [_{\text{TP}}\ T_{[\varphi]}\ [_{\text{vP}}\ D_{[\varphi:\_]}\ \ldots$

(34) DP V $[_{\text{FinP}}\ \Delta_{\text{self}}\ \text{Fin}\ [_{\text{TP}}\ T_{[\varphi:\text{self}]}\ [_{\text{vP}}\ D_{[\varphi:\_]}\ \ldots$

In (34), *self*-coordinates obligatorily bind the minimal subject to a matrix antecedent. In (33), the D-subject acquires valued phi-features via agreement with T/AGR and is linked to *speaker/addressee* coordinates, referring either to the speaker, the addressee or a (topic) antecedent (as indicated by the dotted lines).

In NOC, fully 'free' reference seems to be impossible, but arbitrary reference, topic-linking patterns and null expletives are licit, even though local control is the highly preferred pattern. Thus, Spanish adjunct infinitives share the property of OC of not sanctioning [+R] AGR. With finite clauses, they share the property of sanctioning (external) speaker/addressee and topic coordinates in C:

(35) DP V [$_{\text{ForceP}}$ $\Delta_{\text{Øspeaker/Øaddressee}}$ [$_{\text{FinP}}$ Δ_{self} Fin [$_{\text{TP}}$ T [$_{\text{vP}}$ D …

In fact, also Pérez Vázquez (2007: 301) argues that Spanish infinitives with overt subjects can be anchored to an 'external logophoric centre' in the vein of Bianchi (2003).

However, 'control' via speaker/addressee coordinates cannot be mediated by AGR so that phi of the minimal D subject must be fully recovered from C, i.e. through discourse linking to an antecedent or by means of (speaker-inclusive or addressee-inclusive) arbitrary reference. This way, identification of the null subject is susceptible to various requirements at the syntax-pragmatics interface. Thus, it is only expected that control in NOC is the result of scalar preferences (see also Schulte's 2007: 133 "default control hierarchy" and Landau's 2019 "controller-worthiness scale").[14]

According to the results of Section 4.3, identification of the null subject of adjunct infinitives underlies the following (sub-)scales:

(36) local [subject > non-subject] > non-local [Agent/perspective-holder/topic > non-agent/non-perspective-holder/non-topic]

This scale is a natural consequence of economy in that local relations are preferred over non-local ones for (phonetically or structurally) smaller nominal forms (cf. Levinson 1987; Cardinaletti & Starke 1999).

Let us consider the high preference for [+human] antecedents, but not ban against [–human] ones: even though [+human] is a precondition for logophoric control, this might be a preference rather than a requirement for topic linking (cf. Landau 2013: 255, 2019). In Givón (1983), the concept of 'topicality' or 'topic continuity' is defined as scalar, being the result of an interaction between hierarchies, such as the scale of roles and animacy:

(37) Grammatical case role hierarchy:
SUBJECT > Direct Object > others (Givón 1983: 22)

(38) Semantic case role hierarchy:
Agent > Dat/Ben > Acc > others (Givón 1983: 22)

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14. Schulte's (2007: 133) hierarchy consists of four levels:

(i) Level 1: subject control: Level2: direct/indirect object control;
Level 3: prepositional object control; Level4: indefinite/pragmatic control

However, I do not consider subject, object and pragmatic control as operating on one scale. Rather, local vs. non-local control are on one scalar level and within these categories, there are further competing forms on a more deeply embedded level (see (36)).

Thus, subjects and human/animate/agent referents are preferred as far as topicality is concerned (cf. Givón 1983: 22). Note that a link between topic continuity and subordinate (control) infinitives is in fact suggested by Givón (1983: 24): he argues that subordinate non-finite clauses are often used as "subject/topic continuity devices".

In the investigated sample, [–human] null subjects in adjunct infinitives are rare and arise in very restricted scenarios: (i) there is no referential dependency, as in the case of null expletives. In fact, out of the few, non-local [–human] null subjects in the CORPES XXI sample – 14 – 7 are null expletives. In the PRESEEA (2014–) sample, 2 out of 7 non-local [–human] null subjects are expletives. In the remaining cases, there seem to be two strategies: (ii.a) there is a highly prominent [–human] antecedent, which is, furthermore, located in the immediately preceding context of the prepositional infinitive. In (25), the nonfinite *hacer el trompo* 'to spin' is an exact repetition of an immediately preceding finite clause containing the [–human] subject *el coche* 'the car'. In (26), the inanimate *la casa* is established as a topic in the preceding discourse, maintained continuous, and there is no other competing antecedent. Thus, it could be argued that high activation in discourse or topicality sanction [–human] controllers here (see also Landau 2019 for discussion).

However, it is unclear whether topicality can account for all cases. Apparently, (ii.b) [–human] null subjects also arise if the interpretation of the subject is strongly directed towards a non-agent by means of the semantics of the embedded infinitive. The following examples contain unaccusative or copular verbs, which together with the PP strongly disfavor [+human] subjects:

(39) [Context: *la casa* 'the house/flat']
y al ser en el casco histórico / […]
and at-the be.INF in the center historic
'and given that it is in the historic centre […]' (CORPES XXI, PRESEGAL)

(40) [Context: talking about a building]
y era para estar dos meses cerrado / […]
and was for be.INF two months closed
'and this was for [it] to be closed for two months […]'
(CORPES XXI, PRESEGAL)

In (39), the copular *ser* + PP triggers an interpretation in which a *permanent* place is evoked and, thus, a [–human] one. In (40), *estar dos meses cerrado* 'being closed for two months' semantically precludes a human subject. Thus, local control is barred by the semantics of verb + PP in these configurations.

Hence, the least favored option of control – non-human/agent + non-local – is possible (i) if the controller is topicalized to the extent that it is structurally made sufficiently prominent or (ii) if the options higher on the scale (local, +human) are

rendered pragmatically implausible, which can be triggered by non-agentive verbs and contexts, which ban human subjects. Thus, it is not the *structural* impossibility of local control alone which makes non-local identification via C possible.

6.2 The case of overt subjects in adjunct infinitives

The question remains how overt subjects are sanctioned in adjunct infinitives. It has been argued that [focus] is one trigger for subject licensing in Spanish control infinitives (e.g. Schulte 2007). In Herbeck (2015a; b), I argued that focus can have a (morpho-phonological) licensing function of (pronominal) subjects in Spanish, similarly to nominative Case in other languages. However, while this approach can be applied to emphatic pronouns, overt subjects in adjunct infinitives, even though they are preferably postverbal, are not necessarily focused (Pérez Vázquez 2007; Herbeck 2015b; Paz 2019; see also Vanderschueren 2013 for discussion). Thus, we must go beyond binary features, such as [±focus] or [±contrast], to account for overt subjects in Spanish adjunct infinitives.[15]

A first important observation is that 27 out of the 48 cases of non-local overt subjects in the CORPES XXI sample are [–human] (i.e. 56%). This is in opposition to null subjects, which have a very strong preference for [+human] (14/358 = 3,91% non-human). Furthermore, we have seen that null subjects preferably show local control, while overt subjects exhibit the opposite pattern.

I would like to argue that overt subjects in adjunct infinitives can be considered an anti-logophoricity and anti-topicality effect. We have seen that phonetically and/or structurally smaller forms are often treated as default forms operating on high levels of (continuity) scales. Overt, lexical DPs thus arise as a strategy of shifting the default interpretational strategy, in (36) (i.e. logophoric or topic control) to the non-default option.

Note that preference for 'minimal' forms does not only arise on the nominal but also on the clausal level. Wurmbrand (2001) argues that nonfinite clauses have different degrees of richness of functional structure, restructuring infinitives being the smallest forms (VP), while partial control infinitives have more structure (CP). In the same vein, it has been argued that null subjects in control are the smallest forms (they are minimal pronouns in the sense of Kratzer 2009), while clitics, weak pronouns, strong pronouns and lexical DPs are successively structurally larger (e.g. Cardinaletti & Starke 1999).

Let us thus assume that the following scales obtain:

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15. I refer the reader to Pérez Vazquez (2007) for discussion of contexts that make overt subjects possible.

(41) Ø (no subject) < $D_{[\varphi:\_]}$ (minimal subject) < $D_{[\varphi:+]}$ (full pronoun) < DP (full DP)

(42) *v*P (restructuring) < TP (raising) < FinP (OC) < $CP_{[\varphi:\_]}$ (NOC) < $CP_{[\varphi:+]}$ (full 'finite' clause)

Preference for smaller forms with co-reference and control derives from general (neo-Gricean) pragmatic principles (e.g. Horn 1984; Levinson 1987). If not only (41) but also (42) obtains, the most economical strategy is in fact *combining* a reduced nominal with a reduced clausal structure.

In the case of infinitives, we have minimization of both, the clausal and the nominal form as the default option. However, it is expected that maximization of the nominal form is possible as a marked strategy, if the context requires it, which happens in the case of emphatic pronouns and full DPs.

The reason why this phenomenon is relatively rare might lie in the natural opposition between a minimalized and maximalized form, which is in need of a trigger, such as [focus] or the requirement of shifting away from the default strategy of logophoric or topic-linking.

So far, the approach leaves open the structural licensing mechanism of overt subjects. While a full discussion is beyond the scope of this paper (see Rigau 1995; Mensching 2000; Pérez Vázquez 2007; Herbeck 2015a; b, and references therein), the following represent some lines of reasoning that could tackle the structural possibility of overt subjects in Spanish adjunct infinitives: A property that distinguishes Spanish from English or French lies in the interpretability of agreement. Uninterpretable phi-features on T need to be checked against a DP with valued phi-features in English. In Romance *pro*-drop, phi-features on T are interpretable (Barbosa 2009), possibly correlating with V-to-T movement (cf. Alexiadou & Anagnostopoulou 1998). It has been argued that also Romance infinitives have (interpretable) abstract phi-features (cf. e.g. Rigau 1995; Barbosa 2009; Herbeck 2015a; b).

Uninterpretable phi-features on English non-finite T should trigger *Agree* with a subject, which would lead to an incompatibility between anaphoric AGR (Borer 1989) on T and a referential DP:

(43) V [… [$_{TP}$ $\mathbf{T}_{[\mathbf{u\varphi:self}]}$ [$_{vP}$ $D_{[i\varphi:\_]}$ / *$DP_{[i\varphi:3sg]}$

In Spanish, on the other hand, interpretability of phi on T might have the consequence that *Agree* with a subject DP is not enforced by the T-head but, instead, direct *Agree* with discourse-linkers in C can obtain (cf. Herbeck 2015b), as shown in (44):

(44) DP V [$_{ForceP}$ $\Delta_{ØS/ØA}$[$_{FinP}$ Δ_{self} Fin [$_{TP}$ $T_{[\mathbf{i\varphi:def}]}$ [$_{vP}$ $D_{[i\varphi:\_]}$ / DP

This way, an optionality between internal and external logophoric linking structurally obtains, but local control is highly favored, given the preference scales outlined above.

Thus, the structural licensing of certain non-controlled subjects in Spanish would be due the possibility of direct *Agree* between the subject and C, the requirements of the T-head being 'absorbed' by means of interpretable phi on T. The notion of 'abstract AGR' would thus lie in the property of absorbing the requirement of checking structural features of nonfinite T in a Spec/Head relation.[16]

6.3 On differences between types of adjunct infinitives

Nothing has been said so far about the behavior of different prepositional infinitives. In this section, I outline some lines for future research without pretending to offer a full analysis.

Al-infinitives license the highest number of overt subjects, non-local null subjects (including null expletives) and [–human] subjects. We have seen in Section 4.1 that *al*-infinitives can have a temporal and a causal meaning (Hernanz 1999: 2307). In several examples with non-local (and [–human]) null subjects, *al*-infinitives adopt a causal interpretation (see (39) and (45)):

(45) […] porque al ser tu primer libro (CORPES XXI, RAE)
because at-the be.INF your first book
'[…] because given that it is your first book'

Galán Rodríquez (1999) divides Spanish adjunct clauses into 'integrated' and 'non-integrated' (peripheral) ones (see Haegeman 2012 and Frey 2016 for a discussion of different levels of integration of adjuncts). The latter represent given information and preferably occupy a preverbal position, among other properties (Galán Rodríquez 1999: 3610). The author categorizes *al*-infinitives into the category of peripheral/non-integrated ones. Thus, the non-integrated status of certain *al*-infinitives could result in a wider referential freedom of the subject.

A similar situation can be argued for *para*-infinitives. When these have a prospective meaning, implying an intentionality between the main and the embedded event, the intentional agent of the matrix clause must be animate and co-referent with the null subject of the *para*-infinitive (cf. Galán Rodríguez 1999: 3621; see Example (16)). This might also explain the high number of co-referent overt subjects, i.e. emphatic pronouns, with *para*-infinitives (see Table 4).

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16. See Mensching (2000) for the assumption that nonfinite T checks *in situ* nominative Case. A further factor, favoring the possibility of [+R] subjects in Spanish, could be the availability of a "neutral" position for inverted subjects (cf. Ordóñez 2007; Pérez Vázquez 2007).

The ban against non-co-referent null subjects, however, disappears if there is no pure purpose or intentionality interpretation:

(46) La tela nueva es para hacer una camisa.
the fabric new is for make.INF a shirt
'This new fabric is for making a shirt.' (Galán Rodríguez 1999: 3629)

In fact, in the study presented here, most non-local (arbitrary) null subjects appeared in *para*-infinitives without a potential agent and the infinitive expresses an event for which the matrix subject or object is an instrument or a condition. Also one of the only two non-local [–human] null subjects in *para*-infinitives appeared in a structure that does not have a potential intentional agent antecedent (see (40)).

Other constructions with non-local control are peripheral, non-integrated *para*-infinitives, in which they modify the whole clause, have a parenthetical function and degrees of lexicalization (cf. Hernanz 1999: 2317). In the examined samples, I often found expressions of the form *Para empezar,…* 'To start,…' most plausibly with speaker reference. As Galán Rodríquez (1999: 3628) observes, non-integrated *para*-infinitives lacking the pure purpose interpretation frequently have concessive, consequential or conditional meanings.

What is interesting is that the other example with non-local [–human] null subjects (see (5)) exactly has this property – it is a peripheral infinitive, separated by a pause and it has a concessive (and no pure purpose) interpretation. Thus, the peripheral, non-integrated status of adjunct infinitives plays a fundamental role in sanctioning 'non-standard' null subjects (apart from the 'topicality' status of the controller).[17]

In line with Green's (2019) analysis of "speaker-oriented adverbials", I would like to argue that some non-integrated infinitives can be directly adjoined to a functional head above TP (rather than being fronted to that position), so that they do not enter a direct dependency with the arguments of the main verb. In the case of (causal) *al*-infinitives, Galán Rodríguez (1999: 3620) states that these do not necessarily imply an objective cause but an evaluation on the speaker's side. This indicates a relation to the epistemic stance of the speaker and, thus, these infinitives can be argued to be adjoined directly to Cinque's (1999) EpistP or to a SpeechActPhrase (Speas & Tenny 2003):

(47) [$_{SAP}$ [Para ser una ciudad grande] SA [… [$_{TP}$ La policía T-trabaja … bien]]]

17. Note that 'peripheral' in the sense of 'non-integrated' is not equal to 'dislocated' or 'fronted', given that integrated control infinitives can also be preposed (see e.g. Hernanz 1999).

Those adjunct infinitives which are first merged in the CP area have the loosest link with the matrix VP and the highest flexibility concerning the licensing of non-local control and overt [+R] subjects.

7. Conclusions

In this paper, I have investigated the properties of null and overt subjects in adjunct infinitives in two corpora of spoken Spanish. The results indicate that control in this configuration is best analyzed as a scalar phenomenon, being subject to preference scales at the syntax-pragmatics interface. In syntax, adjunct control is established via discourse coordinates in C, linking a minimal subject to a discourse antecedent or resulting in speaker/addressee-inclusive arb readings.

The data show that adjunct control can neither be reduced to predication nor to logophoric control in Spanish. One potential candidate for a further strategy is topic identification (Kawasaki 1993; Landau 2013, 2019) via C. In this approach, overt subjects, apart from being sanctioned by focus, can be the result of an 'anti-logophoricity' or 'anti-topicality' effect.

However, I hope to have shown that topicality cannot be the only factor sanctioning ([–human]) non-local null subjects, but that pragmatic (in-)compatibilities between the main and embedded events and the semantics and the adjunction site of the infinitive must be taken into account as well.

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Control, typically defined as a specific referential dependency between the null-subject of a non-finite embedded clause and a co-dependent of the matrix predicate, has been subject to extensive research in the last 50 years. While there is a broad consensus that a distinction between Obligatory Control (OC), Non-Obligatory Control (NOC) and No Control (NC) is useful and necessary to cover the range of relevant empirical phenomena, there is still less agreement regarding their proper analyses. In light of this ongoing discussion, the articles collected in this volume provide a cross-linguistic perspective on central questions in the study of control, with a focus on non-canonical control phenomena. This includes cases which show NOC or NC in complement clauses or OC in adjunct clauses, cases in which the controlled subject is not in an infinitival clause, or in which there is no unique controller in OC (i.e. partial control, split control, or other types of controllers). Based on empirical generalizations from a wide range of languages, this volume provides insights into cross-linguistic variation in the interplay of different components of control such as the properties of the constituent hosting the controlled subject, the syntactic and lexical properties of the matrix predicate as well as restrictions on the controller, thereby furthering our empirical and theoretical understanding of control in grammar.

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