An event-based approach to PRO and Control

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1 Introduction

In this paper, I will argue for a novel approach to PRO, control and raising that is crucially based on the role of (infinitival) tense and its interpretation as a predicate on situation arguments as well as on a presuppositional approach to pronominal reference. I will argue that PRO lacks the presuppositional features of lexical pronouns that a) discriminate their antecedent and b) determine their phonological make-up. In particular, I will argue that control breaks down into a number of dependence relations among which a semantic relation that involves the s-selection of a C-head with a specified [participant] feature (+/- author) and a binding relation between the dedicated controller and PRO in cases of exhaustive obligatory control. Furthermore, I will present evidence that PRO is case-licensed by infinitival Tense and explicate the semantic relation between Tense and PRO that underlies thiscCase assignment.

As far as the distribution of PRO is concerned, I will develop an account in which the property of PRO being constrained to non-finite domains follows from its basic property of lacking φ-features. The interpretation of PRO is shown to be crucially determined in that PRO enters into a licensing relation with infinitival Tense. The core idea is that pronouns comprise, next to a D-head, an abstract nominal predicate of the type *participant* (x,s) and that the reference of PRO - that lacks lexical presuppositional features that specify restrictions on the individual and situation argument of the nominal predicate - is crucially constrained in that its situation argument is bound to the matrix event, yielding the result that the referent of PRO is restricted to be a participant of the event denoted by the matrix verb.

This initial take will be refined in successive steps taking into account case agreement properties of control infinitives in Russian (cf. Landau 2008, Sheehan 2018) and Icelandic (cf. Sigurðsson 2008, Sheehan 2018) to arrive at an account of the difference between exhaustive obligatory control (EOC) and partial obligatory control (POC). In particular, it is shown that cases of EOC involve a (silent) strong definite determiner in PRO, while cases of POC are built on the use of a (silent) weak definite determiner. Tense in control structures will be shown to involve an attributively used temporal predicate that is taken to assign case that depends on the higher licensing head, while Tense in raising structures will be shown to involve a referentially used temporal predicate that is argued to fail to assign case. Both types of infinitival tense heads are argued to lack a D-feature, accounting for cases of raising of quirky case-marked arguments in Icelandic. The paper starts with a short overview of the treatment of PRO and control in the GB-framework and in early approaches in the minimalist program.

2 A short history of PRO

Since the earliest days of generative grammar control and raising constructions have been treated differently resulting in the Government and Binding account (GB) of PRO in which its distribution and its silent nature are derived from its specification as a [+ anaphoric] and [+ pronominal]

element. Since a category cannot be simultaneously bound and unbound within the same governing domain, PRO is barred from environments where it can be assigned Case under goverment. Since the case filter demands that lexical argument categories are assigned Case, it follows that a pronoun with this kind of specification must remain phonologically null under the standard assumptions of GB theory.

Already before the ascent of minimalism, this account has been criticized from a conceptual and from an empirical point of view. On the one hand, the assumption that neither non-finite T nor the obligatorily present null C-head are governers are pure stipulations. On the other hand, it was pointed out that the interpretative characteristics of PRO as a [+ anaphoric] and [+ pronominal] element is questionable, since two types of control, obligatory control (OC) and non-obligatory control (NOC) need to be distinguished (cf. Williams 1980). While PRO behaves like an anaphor in OC-cases, PRO seems to have pronominal properties in cases of NOC, as is illustrated in (1) and (2). (1a-c) indicate that OC PRO must have an antecedent (1a) that must occur in a local domain (1b) and c-commands PRO (1c). (2a) indicates however that NOC PRO does not need an antecedent, while (2bc) show that that the non-obligatory antecedent of NOC PRO can be non-local and also fail to c-command PRO (examples are taken from Hornstein 2003).

(1) a. * It was expected PRO to shave himself
b. * John thinks that it was expected PRO to shave himself
c. * John's campaign expects PRO to shave himself

(2) a. It was believed that PRO shaving was important
b. John thinks that it is believed that PRO shaving himself is important
c. Clinton's campaign believes that PRO keeping his sex life under control is necessary for electoral success

In the minimalist program, government and government domains have been eliminated from the theory. Chomsky and Lasnik's (1993) proposal that PRO is always Case marked (with null Case) opens up anew the question of a) how to account for the silent nature of PRO and b) of how to account for the differences between raising and control. Chomsky and Lasnik (1993) settle the question with the stipulation that PRO is assigned null case which is restricted to non-finite contexts and is also taken to account for the non-lexical nature of PRO. This account is refined by Martin (1992) and Boscovič (1997) who argue that not every nonfinite I-head has the ability to check null Case and propose that only an I-head that is marked with [+tense] can check null Case, adopting Stowell's (1982) proposal that control infinitives in contrast to ECM-infinites are specified for unrealized tense, where unrealized tense means that the infinitival event is unrealized at the time denoted by the matrix verb.

Hornstein (2003) goes a step further and abolishes not only the assumption of null Case as a pure stipulation, but control theory as a whole by proposing that in cases of OC there is no silent pronoun but only a copy (or a trace) left by A-movement of the controlling DP from the embedded domain into a theta-position in the matrix domain. This account gets rid of OC PRO and the control module while maintaining the empirical core of the distinction between raising and control with raising being analysed as A-movement from an embedded domain into a non-theta-position in the matrix domain, as is illustrated in (3). The basic assumption seems to be that infinitives are tenseless and do not assign (structural) case to the subject.

(3) a. John tries [$_{vP}$ ~~John~~ ~~try~~ [$_{IP}$ ~~John~~ to [$_{vP}$ ~~John~~ visit Mary]]] (control context)
b. John seems [$_{vP}$ ~~seem~~ [$_{IP}$ ~~John~~ to [$_{vP}$ ~~John~~ visit Mary]]] (raising context)

What remains to account for is NOC PRO which Honstein unifies without any argumentation with the null pronminal (pro) that is found in Romance languages and some Asian languages. This is

highly unsatifactory. For instance, it is not clear at all why a language like German should license pro in non-finite embedded domains but not in finite matrix domains. In the following section, I will present some arguments from German which cast doubt on the movement theory of control (MTC), as the solution proposed by Hornstein is generally called to distinguish it from the Agree theory of control (ATC) developed by Landau (2000, 2003, 2006) of which the present account constitutes an event-based installation.

3 Problems of the MTC

German displays nominal predicates that show agreement in number, Case and gender with the subject, or more generally with the Case that the subject of the predicate obtains during the derivation, as is illustrated in (4ab). As is shown in (4c), if the subject of the predicate undergoes A-movement from a non-Case position to a Case position in passives, the predicate agrees with the Case that the antecedent obtains via movement. In examples (4-9), the native speaker judgments involved are those of the author (nsj of author).

(4) a. D**er** Mann ist ein groß**er** Künstler (nsj of author)
the man.NOM is a great artist.NOM
'The man is a great artist'

b. Peter nennt d**en** Mann ein**en** großen Künstler (nsj of author)
Peter names the man. ACC a great artist. ACC
'Peter calls the man a big artist'

c. D**er** Mann wird t ein groß**er** Künstler genannt (nsj of author)
The man,NOM gets a great artist.NOM named
'The man is called a great artist'

Nominal predicates agree with their local subject also in control infinitives and show Nominative Case, as is illustrated in (5a). This can be explained by assuming that either PRO is assigned Nominative, rather than null Case in (5a), or - in a raising analysis of PRO - that the predicate agrees with the Case that its subject obtains in the matrix clause, which is (also) Nominative since *try* in German, like in English, is a subject control verb. Things are interestingly different when it comes to object control verbs like *erlauben* (permit) in German, as is illustrated in (5b). Under Hornstein's analysis, the pronoun *him* is first merged in the embedded clause and then undergoes A-movement into the position where the object theta-role is assigned followed by movement to a position that assigns it Dative Case in the matrix clause.

(5) a. Hans versucht PRO ein groß**er** Künstler zu werden (nsj of author)
John tries PRO a great artist.NOM to become
'John tries to become a great artist'

b. Maria erlaubt ihm PRO ein groß**er** Künstler zu werden
Mary allows him.DAT a great artist.NOM to become

c. *Maria erlaubt ih**m** t ein**em** großen Künstler zu werden
Mary allows him.DAT a great artist.DAT to become
'Mary permits him to become a great artist' (nsj of author)

As the contrast between (5b) and (5c) shows, the Case agreement facts do not support an analysis in which the infinitival subject fails to get Case licensed in the embedded clause and is thus raised to a theta- and Case-position in the main clause. In this case, one would expect the predicate to show Dative Case agreement, contrary to fact, as shown in (5c). On the other hand, the agreement facts

follow if it is assumed that PRO is assigned Nominative Case in the embedded clause with no A-movement being necessary in (5b).

Object control verbs in German also indicate that control cannot be reduced to movement that obeys the minimal link condition (MLC). Hornstein (2003) argues that the control module can be abandoned since the Minimal Distance Principle (MDP) that regulates which argument of the matrix verb serves as controller for PRO can simply be replaced with the MLC. As is illustrated in (6), subject- and object-control verbs in German seem to employ the same kind of recipient argument that with object-control verbs must count as intervener for control but with subject-control verbs cannot count as intervener. Given that these arguments have the very same semantics in both types of verbs, as is is illustrated in (6c), and are realized with Dative Case, they should be mapped into the same syntactic position with subject- and object-control verbs.

(6) a. Hans versprach Maria PRO Peter einzuladen (Hans invites Peter)
John promised Mary.DAT PeterACC to invite
'John promised Mary to invite Peter'

b. Hans erlaubte Maria PRO Peter einzuladen (Maria invites Peter)
John allowed Mary.DAT Peter.ACC to invite
'John allowed Mary to invite Peter'

c. John gave Mary the promise /allowance to invite Peter (nsj of author)

These data thus show that control theory cannot simply be abbolished and OC-PRO and its interpretation be reduced to raising and the MLC. Object control verbs also provide a third kind of argument against the raising analysis of PRO.

Object control verbs in German differ in their binding properties from what is expected under raising. The argument is rather complex and thus needs to be prepared with some preliminary data about binding in German. It is well-known that Dative arguments fail to license Accusative anaphors in German (7a), even though they clearly c-command them (cf. Grewendorf 1989, Haider 1993), as can be seen from the Principle C-effect in (7b). The reason seems to be that anaphors are subject oriented in German (cf. Hinterhölzl 2006 for additional data).

(7) a. Hans$_1$ zeigte sich$_{1/*2}$ ihr$_2$ im Spiegel[1]
John showed himself /herself her in the mirror
'John showed himself / herself to her in the mirror' (nsj of author)

b. *Hans schickte ihr$_1$ Marias$_1$ Bild (nsj of author)
John sent her Mary's picture
'John sent Mary's picture to her'

As is illustrated in (8), an object control verb with a Dative controller can license an accusative anaphor in the embedded clause. This is completely expected under the analysis that the embedded subject is licensed as a Nominative marked null pronoun (8a). In the raising analysis of PRO, the anaphor in the embedded clause is licensed by a constituent that has been moved (via a theta-position) to a position that is assigned Dative case in the matrix clause.

[1] One might argue here that the Dative argument fails to c-command the accusative reflexive pronoun. Note that this argument is not valid in view of the fact that reflexives can precede their antecedent and be bound by it, as is illustrated in (ia). Moreover, the sentence with the base word order is a bit marked, but binding is nevertheless excluded, as is illustrated in (ib).

(i) a. weil sich Hans heute nicht gewaschen hat
since himself John today not washed has

b. Hans$_1$ zeigte ihr$_2$ sich$_{1/*2}$ im Spiegel
John showed her himself/herself in the mirror

(8) a. Maria hat ihm erlaubt PRO_1 $sich_1$ zu rasieren
Mary has him allowed himself to shave
'Mary allowed him to shave himself' (nsj of author)

b. Maria hat ihm_1 erlaubt t_1 $sich_1$ zu rasieren

One might argue that the difference between (7a) and (8b) follows from the fact that in (8b) the Dative argument is identified with the subject argument of the embedded predicate, while the Dative argument in (7a) is only an object of the predicate of which the anaphor is a co-argument. Note that this cannot be correct, since if the infinitive undergoes restructuring the anaphor cannot be licensed anymore by the Dative argument in the matrix clause, as is illustrated in (9). To explain the difference between (8ab) on the one hand and (9) on the other hand, we are thus left with the assumption in an extraposed infinitive PRO is present that licenses an Accusative anaphor in the embbeded infinitive (cf. Hinterhölzl (2006) for a detailed account of the binding properties of restructured infinitives in German).

(9) *weil $sich_1$ ihm_1 Hans zu rasieren erlaubte (nsj of author)
since himself him John to shave allowed
'since John allowed him to shave himself'

To summarize, the facts of Case agreement of nominal predicates and the (binding) properties of object-control verbs in German, speak in favor of a solution - envisaged by Chomsky & Lasnik (1993) - in which infinitivals contain a null pronoun that is assigned structural Case (rather than null Case), calling for an alternative explanation of the non-lexical nature of PRO as well as for its interpretational requirements. To this task we turn in the following sections.

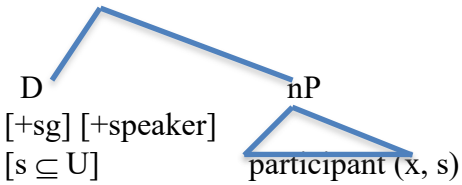
4 A presuppositional approach to (pro)nominal reference

In this section, I will argue for a compositional approach to pronouns that provides the basis for a novel analysis of PRO and the nature of control. I will thereby follow recent accounts starting with Dèchaine and Wiltschko (2002) that argue that pronouns have internal structure that is akin to a DP, comprising of a D- and N-layer. In particular, I submit that pronouns have an abstract nominal core comprising of the predicate *participant* (x, s). Since an individual can only be a participant in an event / situation, I propose that the analysis of demonstrative pronouns of containing a situation argument in Elbourne (2008) is extended to personal pronouns. In this approach, the D-element is a function that takes this predicate as input and maps it onto the relevant individual by imposing specific conditions both on the nature of the situation argument and on the nature of the individual argument.

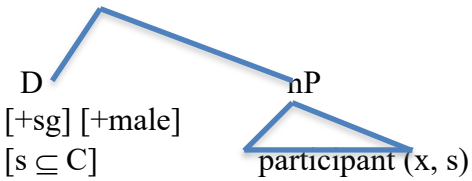
For instance, the deictic first-person pronoun *I* in English is represented as given in (10). The crucial presuppositional conditions for the use of this pronoun are that a) x must be a singular participant ([+sg]) of the utterance situation ($s \subseteq U$) where it functions as the speaker of this event [+speaker]. It is these features - supposed to be allocated in D - that semantically constrain the value of the denoted individual and that are spelled out with the phonological matrix *I* in English.

On the other hand, the third-person pronoun *he* in English (in its discourse anaphoric use) combines the conditions that the relevant participant must be a male singular individual in a situation that is part of the context of the utterance different from the utterance event itself, as is illustrated in (11). In other words, it imposes the presupposition that the respective individual was introduced in a previous event reported in or accessible from the discourse, in general taken to be part of the common ground (CG) between speaker and hearer.

(10) I



(11) he

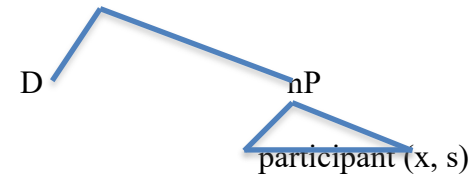


4.1 PRO as a radically underspecified pronoun

In this compositional approach to pronouns, PRO can be represented as a minimal pronoun, lacking any lexical feature in D, as is illustrated in (12). The identifying features which constrain its denotation are supplied via binding and control where control is re-interpreted as an Agree relation with a syntactic antecedent in the matrix clause. The crucial denotational restriction of PRO derives from the fact that its situation argument is bound to the event argument of the higher verb.

In this way, the referent of PRO is determined to be a participant of the event denoted by the matrix verb. PRO is anaphoric in that its situation argument rather than its individual argument is bound to a syntactic antecedent. Crucially, PRO lacks any presuppositional features that can further constrain its interpretation. Its interpretation is thus crucially determined by the control properties of the matrix predicate. In general, cases of obligatory control (OC) also called exhaustive control (EC), cases of partial control (PC) and cases of lack of control in which PRO is taken to have an arbitrary or generic interpretion need to be distinguished.

(12) PRO



As far as OC/EC is concerned, I propose to account for the difference between subject and object control - essentially a semantic property of the matrix verb as we have seen in (6) above - in terms of a selectional restriction on the embedded complementizer by the matrix verb. In particular, I submit that control verbs s-select for a complementizer with the specification [+agent] or [-agent] for the feature participant. This feature is then transmitted via an Agree relation between C and T and Spec-head agreement between T and PRO in its Specifier to the pronominal subject in infinitival complements. In other words a subject-control verb like *promise* in English will select a complementizer with an uninterpretable participant feature [+ agent] with the effect that PRO is analysed as denoting the agent argument of the matrix predicate, while an object-control verb like *recommend* in English will select a complementizer with an uninterpretable participant feature [-

agent] with the effect that PRO is analysed as denoting the recipient argument of the matrix predicate, as is illustrated in (13ab) respectively.

(13) a. John promised to Mary [$_{CP}$ [+agent] C [$_{TP}$ PRO [+agent] T to meet her]]
b. John recommended to Mary [$_{CP}$ [-agent] C [$_{TP}$ PRO [-agent] T to meet him]]

As far as split and partial control is concerned, I submit that in this case no participant feature is transmitted via C, but a complementizer is selected that is specified as containing the feature [+pl] which when transmitted to the feature content of PRO insures that a plural individuum out of the participants of the matrix verb is created as the denotation of PRO, as is illustrated in (14) for a case of split control (the cases of partial control will be discussed in more detail in Section 5 below), guaranteeing the interpretation that John suggested to Mary that John+Mary meet each other.

(14) John suggested to Mary [$_{CP}$ [+pl] C [$_{TP}$ PRO [+pl] T to meet each other]]

Finally, as stated above, PRO occurring in contexts in which it is not c-commanded by the matrix verb has the so-called arbitrary or generic interpretation. In this case, I submit that PRO whose only specification is that its situation argument is a bound variable when unable to be bound to the matrix event is bound by a sentence level (modal) operator requested by the matrix predicate. In other words, the sentence in (15a) is interpreted as given in (15b). As can be seen from (15b), the denotation of PRO underspecifies the denotation of the first argument of the verb *help* implying that any individual capable of acting as the agent of *help* is referred to arbitrarily.

(15) a. It is useful PRO to help the poor
b. $\forall$ x $\forall$e [participant (x, e) & help (x, the poor, e)] $\rightarrow$ useful (e) (for x)
for all individuals x all the events compatible with the doxastic world of the speaker such that the participants of these events help the poor in these events are useful events for x (according to the valuation of the speaker)

I will leave open the question here, whether in standard uses of arbitrary PRO in the discourse its denotation is further constrained by a sentence level topic, which restricts the reference of PRO to a subset of individuals that are under discussion in the discourse. Note in particular that, since the event argument of PRO is not bound by the matrix verb, it is free to refer to the utterance event or any other particular event in a state of affairs under discussion. For instance, if (15a) is uttered in a situation in which the discourse involves a discussion of the speaker and the hearer about what citizens can do about certain affairs, (15a) can be taken to mean that is useful that we (as citizens) help the poor. If on the other hand, the discourse is about the fact that politicians care only about themselves, (15a) can be used to express that it is useful that the politicians help the poor. In the former case, PRO refers to the topical utterance event. In the letter case, the event argument of PRO refers to a salient event in the previous context (s $\subseteq$ C). As is also indicated in (15b), the assumption of quantification over both variables of the pronominal predicate *participant*, if correct, makes necessary the assumption of an implicit individual argument of the predicate *useful.* I will leave the exact treatment of non-obligatory control for further reseach and will concentrate on cases of exhaustive and partial obligatory control in the rest of the paper.

To summarize, the idea that PRO is a radically underspecified pronoun is confirmed by the observation that its interpretation is determined by the syntactic context to a degree that significantly differs from the interpretation of lexicalized pronouns in that the latter impose referential restrictions on their antecedents via their presuppositional features in D. Control in the present account is a mechanism that supplies the relevant interpretational features to PRO via an Agree relation.

Note that these features must be taken to be non-formal features, or purely semantic in nature and thus will have no impact on spell-out. This is crucially different from the Agree relation that underlies pronominal binding. In the latter case formal features of the pronominal must be matched by semantic features of the antecedent.

Control is an Agree relation (differently from binding) that allows for the sharing of semantic features and imposes semantic constraints on this agreement process (by s-selecting different types of complementizers) but the syntactic operation Agree, which underlies it, is the same syntactic relation that underlies binding. In this way, the GB-intuition that control and binding are similar can be maintained, but differently from the GB-approach, we can make precise how binding and control differ as well: binding involves formal presuppositional lexical features on the bound pronoun that are used to identify an antecedent. A controlled pronoun has no lexical features at all, it obtains interpretational features via the control relation in the syntax.

The question that we have to address next is whether these features obtained via control are presuppositional features or contribute descriptive content. We will see that the answer to this question differs with respect to whether we are dealing with EOC or with POC. This question boils down to the distinction between the referential and the attributive use of a nominal expressions that is discussed in some detail in the following section.

4.2 On the referential and attributive use of (pro)nominal expressions

As stated above, if a pronoun is used as a bound pronoun or as a discourse anaphoric expression, the lexical features present in D serve as presuppositions to select the relevant antecedent. For instance, if *he* is used as a bound pronoun as in (16a), the information that the relevant individual is a male participant in a given event serves as presupposition for the determination of the antecedent variable, as is illustrated in (16bc).

(16) a. Everyone thinks that he is the best
b. $\forall$ x x thinks that x is the best
c. [[he]] = $\lambda P\ \exists s\ \exists x\ P(s) = x\ \&\ male\ (x)\ \&\ sg\ (x).\ x$

(16c) expresses that the determiner of a bound pronoun is a function that takes a predicate as its argument, presupposes that there is an event such that the male singular participant of this event is mapped onto the variable x and returns as value x, securing that the pronoun is mapped onto the same variable as its antecedent in an A-position.

Similarly, for the discourse anaphoric use of the pronoun *he*, as is illustrated in (17a), the lexical features of D and the content of the predicate serve as presuppositions to determine the referential value of the pronoun, as is illustrated in (17b).

(17) a. A man came in. He wore a green hat.
b. [[he]] = $\lambda P\ \exists s\ \ s \subseteq C\ \&\ P(s) = a\ \&\ male\ (a)\ \&\ sg\ (a).\ a$

Under the assumption that *a* is the referential value of the expression *a man* in the ongoing discourse, (17b) expresses that the determiner of a discourse anaphoric pronoun is a function that takes a predicate as its argument, presupposes that there is an event in the context such that its singular male participant is mapped onto the individual *a* and returns as value this individual *a.*

In other words, if a personal pronoun is used as a bound pronoun or as a discourse anaphor also the content of the abstract nominal predicate is interpreted as a presupposition, possibly due to raising of the predicate from n to D. This use corresponds to the referential use of a nominal expression, illustrated in (18a) and is to be distinguished from the attributive use in (18bc). The terms referential and attributive use of a nominal expression goes back to Donellan (1966).

(18) a. A man and a woman came in. The man wore a green hat.
b. A person was killed in a terrible way. The murderer must be insane
c. We made a picknick in the park last weekend. John brought the beer.

While in the referential use of (18a), the expression *the man* simply picks up the referential value of its discourse antecedent, the expression *the murderer* in (18b) is interpreted in a different way: the speaker of (18b) is not familiar with the individual that committed the crime but may identify it by taking recourse to a property of that individual in a given event: x is the agent in the previous killing event. Similar considerations apply to the bridging relation in (18c): *the beer* is identified as the prototypical ingredient of the given picknick event (cf. also Schwarz 2009, 2012).

In other words a weak definite introduces a new discourse referent and the condition on the individual, namely that there is a unique individual that has the property described by the nominal in the given situation that is presupposed in the referential use of a definite description becomes part of the descriptive content of the nominal expression, as is illustrated in (18ab') for (18a) and (18b) respectively (the presuppositions of the determiner are underlined in (18')).

(18') a. referential use of *the* in *the man* : [[the]] = $\lambda P \underline{\exists s\ s \subset C \ \&\ \iota x\ P(x,s)}\ .\ x$
b. attributive use of *the* in *the murderer*: [[the]] = $\lambda P \underline{\exists s\ s \subset C}\ .\ \iota x\ P(x,s)$

It is important to note that these uses correspond to a formal distinction in grammar. This distinction is also known as the distinction between weak definites (the respective individual is identifiable in the context) and strong definites (the respective individual is given in the context) Several Germanic languages/dialects have long been known to have two full article paradigms (see Heinrichs 1954 for the Rhineland dialects, Scheutz 1988 and Schwager 2007 for Bavarian, and Ebert 1971 for the Frisian dialect of Fering). In Standard German the distinction becomes apparent only in certain preposition–article combinations, as is illustrated in (19).

(19) a. Hans ging in-s Haus. D_{weak}
John went into-DET.DEF house
'John went into the house.'
b. Hans ging in das Haus. D_{strong}
John went into the house

Furthermore, the distinction is also visible syntactically in the position and (de-)accentuation of the relevant phrase in the middle field, giving rise to notable differences in interpretation, as is illustrated in (20). In (20) the constituent receiving main stress is underlined. (20a) displays the occurrence of a strong definite NP that undergoes scrambling and is deaccented. It is identified with the given DP *Sabine* and the presupposition that *Sabine* is the girlfriend of Hans is accomodated. (20b), however, displays the occurrence of a weak definite NP that remains in base / Case position and receives the main accent. It is interpreted as introducing a new discourse referent that is linked to one of the protagonists.

(20) Context: Hans hat nach langer Zeit wieder Sabine getroffen. (nsj of author)
a. Er hat seine Freundin sofort <u>umarmt</u> (seine Freundin = Sabine)
b. Er hat sofort <u>seine Freundin</u> umarmt (seine Freundin ≠ Sabine)
He has (his girlfriend) immediately (his girlfriend) embraced

These observations give rise to the following question: Is the use of PRO akin to the referential use or the attributive use of a definite description? In the latter case it would correspond (in particular in its arbitrary use) to the antiquated or almost outdated use of the personal pronoun *he* in (21).

(21) He who likes beer is invited to the party
= whoever likes beer is invited to the party

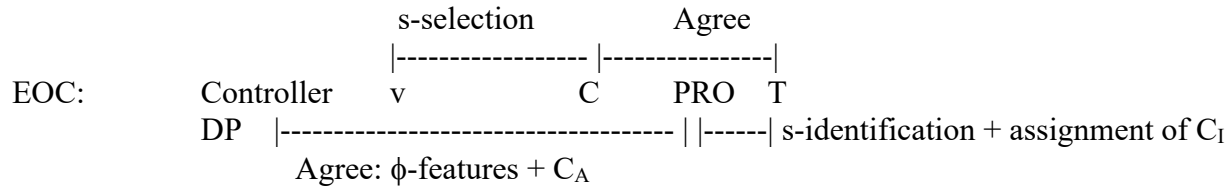
To conclude, we deduce that PRO is constructed by combining the abstract nominal predicate *participant* (x,s) with a weak or strong determiner D that remains phonologically empty, because it does not contain any lexical features that are interpreted as presuppositional conditions that serve to identify an antecedent. The only condition that the use of PRO imposes is that its situation argument is bound either to the event argument of a higher verb or to a sentence level operator.

As far as the question is concerned whether PRO is used as a referential or attributive nominal expression, it is reasonable to assume that the division could fall between cases of OC (referential use of PRO) and NOC (attribute use of PRO).

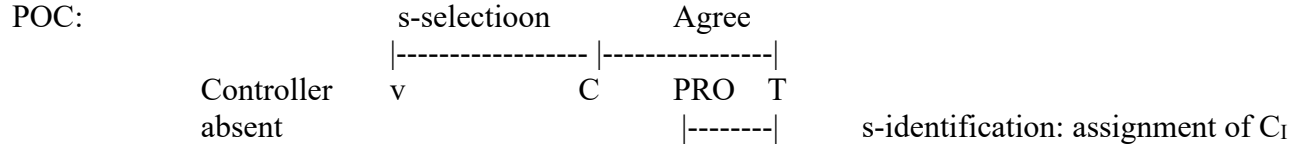
I will however argue that this distinction is also relevant within the domain of OC and show with the help of Case agreement facts in Russian and Icelandic in Section 5 below that cases of exhaustive OC involve a referential use of PRO, while cases of partial OC involve an attributive use of PRO. In particular, I will argue for the presence of different licensing relations in cases of EOC and POC, as summarized in the following subsection.

4.3 Outline of the account

In cases of EOC, the matrix verb selects a complementizer with the respective participant feature that is trasferred via an Agree relation to the infinitival Tense head. PRO has a strong determiner implying that the participant feature serves as a presuppositional feature to identify the antecedent in the matrix clause. PRO enters into a semantic relation with infinitival Tense (to be discussed in Section 5) in which the situation argument of PRO is identified with the first situation argument of Tense that is itself bound to the matrix event. It is this relation in which PRO is assigned independent Case (C_I). PRO enters into a (secondary) Agree relation with the so-called controller DP with which it shares the participant feature. It is this relation in which ϕ-features and agreeing Case (C_A) are transferred to PRO.



In cases of POC, the matrix verb selects a complementizer (without a participant feature) with the feature [+pl]. This feature is transferred via an Agree relation to infinitival Tense where it contributes descriptive content, since PRO is headed by a weak definite determiner in this case. Thus, a new discourse referent, a plural individuum, is constructed. As above, PRO enters into a licensing relation with infinitival Tense in which its situation argument is identified with first argument of Tense in cases of split partial control or with the bigger situation in cases in which a plurality of participants of the matrix event is lacking, as is indicated in (22) that specifies the accomodation of an extended situation and that is to be motivated in detail in Section 5.2 below. In this relation, PRO is assigned independent Case by infinitival Tense and does not display agreeing Case since its reference is determined independently of a syntactic antecedent, that is, independently of a controller DP.



(22) Accomodation of an extended situation:
if PRO is assigned the feature [+pl] and the presupposition of this feature is not fullfilled in s_1, the situation denoted by the matrix verb, then a new situation s_2 is introduced where the participants of $s_2 \subseteq$ the participant of s_1.

In the following section, I will take a look at the relation between PRO and infinitival Tense and argue that it constitutes a semantic relation in which PRO's situation argument is identified with a situation argument of infinitival Tense (cf. Kratzer 2006, 2007 for the operation of event-identification).

5 The relation between PRO and infinitival T

Sofar we have assumed that the situation argument of PRO is (directly) bound to the event argument of the matrix verb in cases of OC. It is well known that the reference time of embedded Tense is not established with respect to an independently given topic time (like the speech time in cases of non-embedded Tense) but is bound to the matrix event time. This raises the question of whether PRO and infinitival Tense are bound independently from each other to the matrix verb or whether the relation concerns primarily infinitival Tense and the matrix verb, with PRO being assigned a value for its situation argument via a semantic relation (mediated by a syntactic relation) with infinitival Tense.

The second solution is interesting from various respects. First, it provides some motivation for the above observation that PRO is assigned Nominative case by infinitival Tense in German, since in this scenario there is a licensing relation between Tense and PRO on which case assignment can be based independently of the presence of a controller.

Second, it would provide a motivation for the distinction between OC in complement clauses and NOC in subject clauses and adjunct clauses. In the latter type of clauses, infinitival tense cannot be assumed to be bound to the matrix event argument for lack of c-command and needs to refer to an independently given event. In other words it has pronominal properties that can be taken - like pronouns in the nominal domain that pick up a salient topical discourse referent - to pick up a salient event in the discourse or in the utterance situation (including the utterance event itself) and PRO will be evaluated with respect to this event with a local controller or any controlling DP being unnecessary.

For this approach to work, however, we must make a crucial amendment in the theory. In the standard approach, Tense is treated as a predicate on times or intervals, that is to say, it is assumed to have temporal arguments (cf. Stowell 1995 and much subsequent work). Instead we must assume that Tense expresses relations between situations / events. For instance, *Past* expresses a precedence relation between two situations, the utterance situation (in main clauses) and a reference situation (cf. reference time in Reichenbach 1947), as is indicated in (23). This precedence relation between situations is then interpreted as a precedence relation between the running times / the interval that these events occupy in time.

(23) Past (s_1, s_2) = s_1 precedes s_2 = : τ (s_1) < τ (s_2)

In the next section I will argue that there is evidence for this scenario coming from case assignment and case agreement facts in Russian and Icelandic. Furthermore, we will take a closer look at cases of partial control (PC) and argue that they provide (indirect) evidence for the licensing of PRO without a controlling DP. The data in sections 5.1 and 5.3 are taken from Landau (2008) and Sheehan (2018) and are referenced accordingly.

5.1 Case assignment and Case agreement in Russian

Landau (2008) points out that the standard assumption underlying the MTC, namely the assumption that infinitival Tense does not assign case, is flawed based on the evidence provided by secondary (adjectival) predicates in Russion which, very much like predicative adjectives in German, agree in Case, Number and Gender with their subject (cf. Comrie 1974). As is indicated in (24) for the case of (exhaustive) object control, there is evidence that infinitival Tense assigns Dative case in Russian.

(24)	Ona	poprosila	ego	[PRO	ne	exdit	tuda	**odnomu**]
	she.NOM	asked	him.ACC	PRO	not	go.INF	there	alone.DAT
	'She asked him not to go alone there'					(Landau 2008: 883)		

Since *odin* obligatorily requires case agreement, Landau (2008) deduces that the Dative must come from the non-finite subject, the implication being that PRO can have its own case independent of the case of its controller (Accusative *ego* in (24)).

The interesting fact now is that speakers also allow for optional case agreement with the case of the controller, as is indicated again for (exhaustive) object control in (25). While 90% of the speakers find independent case (case assignment) acceptable, 60% of the investigated speakers also allow for case agreement (cf. Landau 2008:888). Similar judgments apply for non-local (exhaustive) subject control, as is illustrated in (26). Also in this case, both case assignment and case agreement are possible with case agreement being slightly preferred. As is reported in Landau (2008:890), 73% of speakers find Nominative case on the secondary predicate okay, while only 45% of these speakers find (26) okay with independent Dative case.

(25)	Ona	poprosila	ego	[PRO ne	exdit'	tuda	**odnogo**]
	she.NOM	asked	him.ACC	PRO not	go.INF	there	alone.ACC
	'She asked him not to go alone there'				(Landau 2008: 888)		

(26)	Ivan	pokljalsja	druzjam	PRO	sdelat'	eto	**sam**/**samonu**
	Ivan.NOM	vowed	friends	PRO	do.INF	it	himself.NOM/DAT
	'Ivan vowed to his friends to do it alone'					(Landau 2008: 890)	

When we turn to (exhaustive) local subject control, however, there is an interesting difference: Case independence is ruled out, as is illustrated in (27). While 100% of the interviewed speakers accept agreeing Nominative case, all speakers find independent Dative case ungrammtical (0% accept Dative case), as is reported in Landau (2008: 887).

(27)	On	zelat	PRO	zenit'sja	na nej	**sam** /***samomu**	v cerkvi
	he.NOM	wants	PRO	merry.INF	her	himself. NOM/*DAT	in church
	'He wants to marry her himself in a church'					(Landau 2008: 887)	

Before we address the interesting issue of where this difference might come from, let us first see how partial control fares in these three contexts. In all three contexts, partial object control, partial non-local subject control and partial local subject control, case agreement is categorically excluded. A hundred percent of the speakers accept only independent case, as is illustrated in (28) for the case of partial object control.

(28)	Ona	poprosila	predsedatelja	PRO	sobrot'sja	**vsem** / ***vsex** v sest'
	she.NOM	asked	chair.ACC	PRO	gather.INF	all.DAT/*ACC at six
	'She asked the chair to meet altogether at six'					(Landau 2008: 909)

While the sentence in (28) can also be analysed as a case of split control, we will take a closer look at the properties of partial control and its implications for the theory of control in the following section.

Let us summarise our empirical observations: A) Cases of exhaustive object and exhaustive non-local subject control allow for both independent case and case agreement. B) Cases of partial control exclude Case-agreement and C) Cases of exhaustive local subject control exclude independent Case. Why should this be so? A satisfying theory of control and the nature of PRO should account for this data in an insightful and non-stipulative way.

At this point, I will sketch a partial answer for which I will provide further evidence and motivation coming from case agreement facts in Icelandic: A) Cases of exhaustive OC involve a referential PRO and an additional Agree-relation that supplies the value for PRO's individual argument and case agreement is a reflex of this relation. B) Cases of partical OC involve an attributive PRO, thus no additional Agree-relation is necessary and case agreement is excluded. C) The surprising lack of case independence in the case of exhaustive local subject control will be given a satisfying explanation after the discussion of Icelandic data to which we turn in section 5.3 below, after a more detailed discussion of partial control to which we turn now.

5.2 The conondrum of Partial Control (PC)

If we compare PC in (30) with a run of the mill case of OC control as in (29), we note that the relation between PRO and its antecedent in (29) is one of identity (indicated by the assignment of the same index), while the relation between PRO and its antecedent in (30) is different. It seems that the reference of PRO in (30) subsumes the reference of its controller but does not exhaust it. This has been indicated by Landau (2000) with the same index and the plus symbol. The embedded subject in (30) refers to a plural referent (indicated by plural morphology on the secondary predicate in Icelandic as we will see in section 5.3 below) that comprises the referent of the controller.

(29) John_1 tried [PRO_1 to kiss Mary]
(30) John_1 wants [PRO_{1+} to meet in the morning]

Also in the present account the facts in (30) are problematic, since PRO is interpreted as a participant of the matrix event. Assigning the presuppositional feature [+pl]-feature to PRO does not solve this problem but leads to a contradiction, since in the case of (30) the sole participant of the matrix event is the singular individual *John*. Hence partial control must involve a PRO with a weak definite determiner and must be interpreted with respect to a situation that differs from the situation denoted by the matrix verb.

We could solve this problem in the present account if we can assume that PRO is evaluated with respect to another event (as the matrix event) given in the discourse, as is typical in instances of NOC. However, Landau convincingly argued that PC is a subcase of OC (a local antecedent is needed, VP-ellipsis gives rise to sloppy readings, the reader is referred to Landau (2003, 2006) for further discussion of this issue).

If we look at the generalizations about the type of predicates that allow for PC, there is agreement in the literature that the matrix predicate must be an attitude verb (cf. Pearson 2015). In particular it is agreed upon that only attitude verbs that take a *tensed* non-finite complement, where Tense specifies an independent temporal reference, permit partial control (cf. also Landau 2015, Sheehan 2018). Secondly, the embedded predicate must be either collective as in *meet*, *gather, embrace*, *greet* or comitative as in *fight with*, *be reconciled with*, *compete with* and the like (cf. Wood 2012). Third, if a matrix verb selects an embedded tense predicate that directly identifies the reference event with the matrix event, as in (31bc), PC is blocked.

(31) a. The chair$_1$ wanted PRO$_{1+}$ to meet in the afternoon
b. *The chair$_1$ tried PRO$_{1+}$ to meet in the afernoon
c. *The chair$_1$ started PRO$_{1+}$ to meet in the afternoon

If we follow Reichenbach (1947) in assuming that Tense via expressing a relation between two time points (in matrix clauses between speaking time and the so-called reference time), establishes a reference time with respect to which the event time of the verb is situated via Aspect, then the Tense predicate embedded under an attitude predicate licensing partial control can be specified as given in (32). In other words, the embedded Tense head introduces an additional situation (s in w_1) and constitutes a function that takes as input the event argument of the matrix predicate and returns as output an event that is situated temporally after or as overlapping with the matrix event. If T is then combined with PRO in its Specifier the situation argument of PRO is identified with the first situation argument of Tense as usual.

(32) [[unrealized Tense]] = $\exists s_2$ s_2 in w_1 such that $s_2 > s_1$ or s_2 o s_1, where s_1 is bound to the matrix event

We can then account for PC and its restrictions, if we assume that the interpretation of PRO involves a weak definite determiner along the following lines: First, I submit that the descriptive feature [+pl] which is assigned to PRO in cases of partial control comes with the presupposition that the antedecent event contains more than one individual. Since this presupposition is fullfilled in cases of split control like (14) above, PRO is simply interpreted with respect to the matrix event (PRO is identified with the first argument of Tense which is bound to the matrix event). This presupposition is not fullfilled in cases of PC like (30,) and (31a) above. Hence there is a presupposition failure resulting in a potential accomodation of a larger situation that comprises a plurality of antecedents including the matrix subject in (30) and (31a), as specified in (33).

(33) Accomodation of an extended situation:
if PRO is assigned the feature [+pl] and the presupposition of this feature is not fullfilled in s_1, the situation denoted by the matrix verb, then a new situation s_2 is introduced where the participants of $s_2 \subseteq$ the participant of s_1.

Note that while this solution seems intuitively correct, it assumes an interaction between presuppositions (of functional elements), their accomodation and their interpretation in the syntax that is non-standard. In the present account, however, which constitutes a presuppositional appproach to (pro-)nominal reference, this account seems already a bit more natural. [2]

At this point, it should be noted that there has been proposed an alternative solution to PC that has been dubbed the move-and-strand approch. According to Rodriguez (2007), PC results from movement of the DP controller followed by stranding of the adjoined null pronoun that is construed as a plural associate of the controller in a structure given in (34).

(34) [$_{DP}$ pro DP]

In this approach, however, it is not clear what prevents base-generation of the associate DP [pro the chair] and local movement of *the chair* to a matrix theta- and case-position in (30bc) above. It has to be stipulated that such an associate DP can only be inserted in an infinitival clause if its Tense head is specified for unrealized tense.

[2] In particular, we can assume that at the level of sentence meaning the interpretation of POC PRO is deviant due to presupposition failure, but receives a coherent interpretation at the level of utterance meaning, where presuppositions are taken to be accomodated.

In the present situation-based account to pronominal reference, we may assume that the attributive use of PRO is facilitated by an attributive use of Tense that introduces an additional situation that is temporally distinct from the matrix event. Note that if we assume that PRO is evaluated with respect to this situation, which would neatly explain why PC is dependent on unrealized tense, PRO would be assigned a *de dicto* interpretation with a *de se* cernel. We may assume that presupposition failure leads to the identification of PRO's situation argument with the second situation argument of infinitival Tense in this case. I leave this issue and the relevance of a particular temporal interpretation of Tense for further research.

Returning now to case agreement in Russian secondary predicates, the fact that these predicates only show independent case in the context of PC receives a natural explanation in the present account. In the present account, it would be reasonable to assume that (independent) case is always present in these infinitival complement clauses and that case agreement comes into the picture as a second option when the matrix verb specifies a dedicated controller, that is, when control is exhaustive. As we noted above this leaves unexplained the fact that with local subject control verbs case agreement in Russian is obligatory.

However, this is not the only option of interpreting the data in Section 5.1. Sheehan (2018) and also Landau (2015) take another road, assuming that there are two types of infinitival complements those that assign (independent) case, possibly via a relation between infinitival T and infinitival C and those that do not assign case, constituting mere TPs that permit A-movement out of the embedded clause into the matrix clause, as envisaged by Hornstein (1999). This is the proposal that Sheehan (2018) makes based on a careful empirical study of control infinitives in Icelandic and Portoguese. I will not go into the Portoguese data, but will argue on the basis of her own Icelandic data that this conclusion is not warranted.

5.3 Case agreement and Case assignment in Icelandic

Before we discuss in some detail her Icelandic data, let us first take note of the fact that the case agreement pattern do not support the analysis in terms of division of labour between a movement-based and an Agree-based account of PRO, as is proposed by Sheehan (2018). In her account, PRO would be a copy of A-movement in cases where local A-movement can be assumed to take place but be analysed as pro in cases where local A-movement is excluded for semantic (PC) or for syntactic reasons (no local movement is possible). In this scenario, Case agreement would be a direct sign of A-movement of the controller into a Case position in the matrix clause (due to the failure of case assignment in the embedded clause). This account correctly predicts that case agreement is obligatory with local subject control verbs and is excluded in all cases of PC. But it would also predict that case agreement should be obligatory with exhaustive object control - the local relation should force the more economic solution of a mere TP and raising - and impossible with exhaustive non-local subject control (for lack of locality), contrary to the observed facts.

The alternative solution is to take the case marking facts as indicative of the referential versus attributive nature of PRO. In such an account, independent case is always available and Case agreement becomes necessary due to the additional Agree relation between PRO and a dedicated controller in case the D-head of PRO is a strong definite determiner. Speakers then simply differ whether they prefer to show case concord of the secondary predicate with the more local but silent PRO or with the less local but spelled-out dedicated controller.

Let us now address the Icelandic data. As is well known Icelandic is a language with a rich system of morphological case in which secondary predicates like in Russian display case concord with their antecedent. As far as object control is concerned, Icelandic displays the same pattern that we are familiar with from Russian. Both independent case, which is Nominative in Icelandic, and Case agreement with the controller are widely accepted by speakers in cases of exhaustive control, as is illustrated in (35). All speakers accept the secondary predicate with Nominative Case and 83%

of the speakers accept it also with Accusative Case (similar results are reported by Sigurðsson 2008:414 for the same sentence).

(35)	Hun	bað	Olaf	að PRO	fara	bara	einn / einan	i visluna
	she	asked	Olaf.ACC	to PRO	go	just	alone.NOM/ACC	to party.the
	'She asked Olaf to go to the party alone'						(Sheehan 2018: 149)	

As far as partial control is concerned a proviso is in order since Icelandic speakers have been reported to not accept PC. Sheehan (2018), however, reports that while most of the eminent linguists do not accept it, she found a number of younger speakers that accept it quite readily. For those speakers that accept PC, case agreement is ungrammatical, however, as is illustrated in (36).

(36)	Hann	bað	Olaf	að PRO	hittast	einir / *eina
	he	asked	Olaf	to PRO	meet	alone. NOM.M.PL /ACC.M.PL
	'She asked Olaf to meet alone'					(Sheehan 2018: 149)

Testing subject control is more difficult since NOM is both the structural case of subjects and the independent case in infinitives. However, there are two contexts in which the subject of a control verb bears a different case: a) if the subject of the control verb bears quirky Accusative or Dative case and b) if the subject is licensed as Accusative DP in ECM contexts. Let us first turn to verbs with quirky case, since this phenomenon also clearly shows that raising and control differ with respect to the preservation of quirky case.

In a raising context, the quirky case of an embedded verb is preserved, as is illustrated in (37), raising the additional question what drives raising if it cannot be considered to be movement to a Case-licensing position. I will offer an answer to this important question in Section 6 below.

Now I would like to turn to the crucial difference between raising and control in Icelandic. Note that the case of the controller is always determined by the control predicate, not by the embedded predicate, as is illustrated in (38). In (38), PRO is clearly marked with Dative case as is indicated by the secondary predicate *both*, nevertheless the controller is marked with Nominative case in the matrix clause. Note that an analysis in terms of A-movement would imply improper movement from a theta-position to a case position and back to a theta position. I think this data presents another strong argument against the movement theory of control.

(37)	Mönnunum /* Mennirnir	virðist baðum	[t hafa verið hjalpað]
	men.the.DAT/NOM	seem both.DAT	[t have been helped]
	'The men seem both to have been helped		(Sigurðsson 2008: 419)

(38)	Mennirmir / * Mönnunum	vonast til	[að PRO verða baðum hjalpað]
	men.the.NOM/DAT	hope for	[to PRO be both.DAT helped]
	'The men hope to be helped both'		(Sigurðsson 2008:419)

Let us see next how control verbs with quirky subjects behave with respect to a case agreement and independent case in the infinitival clause. As is illustrated in (39) for cases of exhaustive local subject control both independent case and case agreement is possible in this context: all speakers out of seven informants accept Nominative case and two of them also Accusative. However, in cases of partial local subject control also the two speakers accepting case agreement in (39) do only accept independent case, as is illustrated in (40).

(39)	Olaf	longaði	að	PRO	vera	??fyrstan / fyrstur
	Olaf.ACC	longed	to	PRO	be	first.ACC / NOM
	'Olaf longed to be the first one'					(Sigurðsson 2008: 415)

(40) Olaf longar að PRO hittist einir / *einan
Olaf.ACC longs to PRO meet alone.NOM / ACC
'Olaf desired to meet alone' (Sheehan 2018: 151)

The Icelandic data thus confirm the observed difference in case marking between exhaustive and partial control in Russian. Furthermore, the data show that in cases of local subject control, contrary to what was the case in Russian, independent case is the unmarked option, a fact that again speaks against a movement analysis of local subject control.

Interestingly, the cases of an ECM subject controller display the inverse pattern in which speakers prefer case agreement (Accusative case) rather than the independent Nominative case, as is illustrated in (41).

(41) þeir földu Harald vilja fara ??einn / einan þangað
They believe Harald to want to go alone.NOM*/Akk ok there
'They believe that Harald wanted to go there alone' (Sheehan 2018: 151)

I will provide an explanation for this surprising difference between control and raising in Section 6 below. In a nutshell, the explanation is based on the observation that case assignment in control structures is dependent on the properties of the higher head and that the higher head in cases of control under ECM fails to assign Case. In the following section, I will provide an explanation of the unexpected case marking facts with exhaustive local subject control in Russian.

5.4 On the relation between Control and Agree

Let us take note again of the basic facts to be covered. Exhaustive non-local subject control and exhaustive object control allow both for case agreement and independent case. Partial control is only compatible with independent case, while (exhaustive) local subject control only allows for case agreement (or case transmission, as it is called in Sheehan 2018).

What is not considered at all by Sheehan (2018) is that different licensing heads may be involved in these diverse control relations that may then be taken to license different types of independent case. This is the solution that I will argue for below.

Therefore, the basic question that we have to answer is which head in the matrix clause is the target of the Agree operation that serves as the basis for binding the anaphoric situation argument of infinitival Tense to the matrix event. The first option would be to assume that it is matrix v or better its Aspect head, constituting the position in which the event argument of the verb is assigned a specific value (via T). If Aspect in the matrix clause is the first target of Agree by infinitival Tense, then in cases of subject control an additional head has to be targeted in a second operation, namely the matrix Tense head, to transmit Case and phi-features of the controller onto PRO.

Thus, we can assume that a more economic solution consists in that the infinitival Tense head targets the closest head in the matrix clause specified with a value for its situation argument and marked with φ-features, if the selecting verb requires a controller. In other cases, it simply targets the closest head in the matrix clause that has a value specified for its event argument. Assuming that objects are licensed by an Aspect head (in parallel to subjects being licensed by Tense), this implies that in cases of exhaustive object control and exhaustive non-local subject control the Agree operation of the infinitival Tense head will first target the Aspect head. In the case of exhaustive local subject control, however, the Agree operation of the infinitival Tense head will directly target the matrix Tense head, since the more local Aspect head lacks φ-features. In the case of partial local subject control, the Agree operation will again target the more local Aspect head in the matrix clause, since the licensing of PRO in this case does not depend on the φ--features

of a specific controller. The case properties of secondary predicates in Russian control structures discussed in Section 5.1 above then follow from the assumptions about Case assignment in Russian infinitival clauses specified in (42).

(42) Case assignment in Russian infinitivals:
a) if the event argument of Tense is bound by the higher Aspect head, embedded Tense assigns Dative case to the argument in its Specifier
b) if the event argument of Tense is bound by the higher Tense head, embedded Tense assigns Nominative case to the argument in its Specifier

The conditions in (42) then imply that in cases of (exhaustive) object and non-local subject control both independent Dative case (due to the Aspect head being targeted by infinitival Tense) and agreeing Accusative or Nominative case are available via the additional Agree relation by the specified controller. In all configurations of partial control only independent Dative case is available, since Aspect in the matrix clause figures as the licensing head (the closest head is good enough) and no additional Agree relation is necessary to license PRO. In the case of exhaustive local subject control, only (agreeing) Nominative case is available since matrix Tense figures as the closest licensing head marked with φ--features such that independent case and agreeing case converge on Nominative case in Russian.

To summarize the proposal: A) In cases of EOC, the semantic features assigned to D of PRO are presuppositional, serving only to discern the relevant antecedent in the structure. The concrete referential value is then assigned via the Agree relation with the specified controller. It is this extra relation which is responsible for Case agreement. Hence PRO is interpreted as a strong definite element in all cases of exhaustive control. B) In cases of PC, PRO is interpreted as a weak definite element whose reference is determined semantically, (or via the accomodation of bigger situation that meets the presupposition of descriptive element [+pl]), as argued above. In this case, the situation argument of PRO is identified with the accomodated larger situation containing the matrix event and its participant. In any event, PRO contains a weak definite determiner in these cases, since a new discourse referent has to be introduced.

6 What is raising all about?

In this section, I will address the important question how raising infinitives can be accounted for in the present account? In particular, the question arises of what drives raising of subjects of quirky verbs in Icelandic. Finally, we want to find an explanation for the Case-agreement facts of PRO under raising verbs in Icelandic (cf. (41) above).

The idea that I will pursue in this section is that so-called unrealized tense in control structures involves an attributively used Tense predicate **and** licenses structural Case, while Tense in subject-to-subject raising structures involves a referentially used Tense predicate (also called anaphoric Tense below) that **fails** to licence structural Case. Tense in subject-to-object raising structures involves again unrealized Tense and is capable of assigning case licensing PRO, but fails to license lexical subjects for the lack of a D-feature.

However, let us start the argumentative chain from the outset. If it is correct as argued for above that control infinitives are tensed infinitives and if it is tense in the embedded clause that is responsible for Case assignment to the local subject, then the question arises how raising infinitives are to be characterized. The simplest thing would be to assume that they are not tensed and hence fail to assign case and fail to license PRO. I guess the general argument being made is that the temporal location of the embedded event always coincides with the temporal location of the matrix verb in cases of raising. Note, however, that this can also be assumed for a subset of control infinitives (those verbs that do not license PC). Moreover, we have seen in the Icelandic examples

of raising in (37) above that lack of Case assignment due to the presumed tenselessness of raising infinites cannot be taken to be the driving force behind raising.

We will thus pursue another line of argumentation. I will argue that Tense is present in raising structures but is of a different nature at least in cases of raising to the matrix subject position. As far as raising to object position is concerned, I will argue that these infinitivals are capable of licensing case and propose that raising takes place in them for the same reason that triggers raising of quirky subjects in Icelandic, namely for the lack of a head that can check the [+D]-feature of a lexical subject in the infinitival clause.

A tensed T head establishes a reference situation that is (temporally) located with respect to some other event, the speech event in matrix clauses and the matrix event in embedded clauses. Tense universally expresses that the two events that it relates either overlap as in Present Tense or are ordered in a specific precedence relation, as in matrix and embedded Past Tense and in embedded unrealized Tense. Tense in this case behaves like a nominal predicate in the temporal domain.

Therefore, another option is to assume that Tense is present in raising infinitves but is anaphoric that is to say it involves a referentially used Tense predicate. This would mean that Tense like an anaphoric pronoun does not establish its own referent (reference time) but depends on an appropriate antecedent whose referential value it assumes (cf. (16) and (17) in Section 3.2 above). Anaphoric Tense in this analysis would then constitute a function that presupposes that there is local c-commanding Tense head that refers to a certain event e_1 and returns this event e_1 as its output. Semantically the result would be identical to an attributively used Tense predicate that identifies its reference event with the matrix event as in the control verbs in (43a). The temporal interpretation of the embedded event in the control structures in (43a) is identical to the temporal interpretation of the embedded event in the raising structure in (43b). But syntactically they may be distinguished assuming that anaphoric Tense does not license structural case.

(43) a. John tries / starts [PRO to kiss Mary]
b. John seems [t to love Mary]

What is the evidence that Tense is referentially/anaphorically used in (43b), but attributively used in (43a). If Tense in (43a) is used attributively it should represent a subcase of on unrealized Tense. This is indeed the case when investigating the temporal relations of the trying / starting event to the kissing event in (43a). In (43a), the kissing event is not completed and thus unrealized at the point of time the agent tries to execute or starts executing this event (the presumed reference time) even though the two events, overlap (partially). This is different in (43b): it cannot be said that the loving event is unrealized at the point of time at which John gives the appearance of it. In short, we have reason to assume that Tense behaves differently in (43a) and (43b) and propose that case is not available in (43b) since Tense is present but anaphoric in (43b).

Things are slightly different, however, in cases of raising to object position, as illustrated in (44). There Tense must be taken to introduce a separate reference situation (in relation to the matrix event). But note that the nominal expression *his neighbor* cannot be evaluated with respect to this reference situation that is situated in John's believe world. It is interpreted with respect to the actual world (*de re*) and probably for this reason cannot be treated as being Case-licensed by the infinitival T. This approach raises a number of questions like the question why the subject in an embedded finite clause can have a *de re* interpretation, as is illustrated in (44b). Is this because the finite verb has agreement that can be taken to be responsible for Case licensing independently of the temporal properties of the embedded T head or because it has – qua being a finite verb - access to the utterance event?

(44) a. John believes his neighbor [t to be a spy]
b. John believes [that his next neighbor might be a spy]

This question can be settled when we look at the interpretation of objects in non-finite contexts. An object DP can have a *de dicto* (attributive use) or a *de re* (referential use) interpretation, as is illustrated in (45).

(45) John wants to meet the author of Waverley
  a. John has the wish to meet the author of Waverley whoever he might be (de dicto)
  b. there is a specific person (Sir Walter Scott) and John wishes to meet him (de re)

This can be accounted for in the following way. The Aspect head possesses a [+D] feature and the object enters into a formal Agree relation with it in which structural Case is assigned to the object. A referentially used object DP will then undergo scrambling to a higher position where it is assigned the referential value of its antecedent. This implies that we must distinguish between Tense and Infl or AgrS and make the following assumptions: Infl (or AgrS) like Aspect has a [+D]-feature and enters into a formal Agree relation with the subject and assigns structural case to it independently of the semantic interpretation of the subject.

The Tense head must then be assumed to lack a D-feature. In consequence, Tense cannot license the lexical subject *his neighbor* in (44a), even though Case is arguably present. Thus, the lexical subject has to raise to the matrix domain where it is assigned case by the matrix verb and where its D-feature is checked by the local Aspect head. This take on raising now also explains why quirky subjects in Icelandic must raise: the verb assigns (quirky) Case to these arguments, but there is no functional head in the infinitival clause that can check their D-feature.

The upshot of all this discussion is of course that PRO can be licensed by infinitival Tense since it crucially lacks a D-feature. What is the nature of this D-feature? D is responsible for individualizing a nominal predicate. An individuum is discriminated by the features *person*, *number* and *gender* which are spelled out with φ-features that PRO is lacking.

This is reminiscent of the idea behind Vergnaud's (1976) Case filter. Vergnaud assumed that only a non-lexical nominal category can lack Case. I propose that only a non-lexical argument category can lack a D-feature. Questions arise of course why Tense should be assumed to lack an uninterpretable D-feature that Aspect is assumed to possess. One possibility would be to assume that the D-feature of an object is not directly checked by Aspect itself but by an Agreement head (AgrO) associated with it. I will leave this issue for further research.

Let us finally adress the question of Case-agreement of PRO embedded under a raising verb, as is illustrated again in (46).

(46) They believe Harald [t T_1 to [t want [PRO T_2 to go alone.NOM*/Akk ^{ok}]]]
  They believe Harald to want to go alone.NOM*/Akk ^{ok} there
  'They believe that Harald wanted to go there alone' (Sheehan 2018: 151)

Here the surprising fact was that T_2 would not assign Nominative Case to PRO but rather Accusative Case, as is visible on the secondary predicate *alone*. Note, however, that within our account of control and raising this does not come as a surprise at all. *Want* is a subject control verb so the closest possible licensing head is T_1. But its subject DP *Harald* does not enter into a licensing relation with it, since T_1 though capable of assigning case cannot check the D-feature of its subject, hence the closest licensing head is Asp^0 in the matrix clause that assigns Accusative case.

Since we know from the Russian data that the case assigning properties of infinitival T in a control structure depend on the Case properties of the licensing head, also this peculiar property of raising in Icelandic receives a natural explanation in our approach to control and raising.

7 Conclusions

To summarize, we have seen that Control potentially involves three different but interrelated relations. 1) A semantic relation between the matrix v, the infinitival C-head and the infinitival T-head, specifying semantic features that serve to discern the antecedent of PRO among the participants in the matrix clause. This relation is necessary, since PRO lacks the φ-features that with lexical pronouns serve to identify the antecedent in the sentence or in the context. 2) A semantic relation between PRO and infinitival T by which the situation argument of PRO is identified with the first argument of infinitival T and by which independent case is assigned to PRO. In cases of EOC, the situation argument of PRO is identified with the first argument of Tense, which is bound by the event denoted by the matrix verb and PRO is interpreted as a strong definite pronoun. Cases of EOC involve a third relation between the designated controller and PRO by which the referential value and the φ-features of its antecedent are assigned to PRO. This relation is formally indicated in Russian and Icelandic by optional Case agreement with the designated controller. In cases of PC, I have proposed that PRO is interpreted as a weak definite pronoun. Furthermore, I have sketched an alternative solution to PC in which the situation argument of PRO is interpreted with respect to a larger situation containing the matrix event that is accomodated due to presupposition failure. In sum, the essential properties of OC-PRO are derived from PROs basic property of lacking (lexical) φ-features.

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