On the difference between exhaustive and partial control*

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1 Introduction: *pro* or PRO?

Discussions of *pro* usually focus on finite clauses, where null subjects (usually) behave similarly to overt pronouns in having a referential or (more controversially) expletive function (see Rizzi 1982). It has been known, however, since the 1980s, that in some languages (e.g. Icelandic) there are non-finite clauses containing a *cased* obligatorily null subject which is *not* referential but rather behaves like PRO in being obligatorily controlled (Andrews 1976, 1990, Thráinsson 1979, 2007, Sigurðsson 1991, 2008, and Bobaljik & Landau 2009 who provide a useful summary). For analyses that connect the PRO/*pro* distinction to the availability of Case, this poses well-rehearsed challenges.[1] What is the relationship between (morphological) case and (abstract) Case? If (nominative) case indicates the presence of Case then why are null/overt referential subjects not licensed in such contexts? Is the null element in such contexts PRO or *pro*? If it is PRO, why does it receive case? If it is *pro*, why must it be controlled?

What has been much less discussed in this connection is the fact that Icelandic, and other languages with cased control such as Russian (Landau 2008) and European Portuguese (Sheehan 2014b, to appear) actually seem to have two distinct kinds of obligatory control (OC). In Icelandic, for example, in addition to contexts where the null controlled subject differs from its controller in its case specification, there are also contexts

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[1] Of course, Icelandic poses other challenges to Case theory, as we shall review briefly below.

where it shares that of its controller (with some complications, to be discussed below). While these two kinds of control have much in common, they are not, contrary to what has often been claimed, identical in meaning. A crucial difference is that partial control readings are only possible where the controlled PRO has independent case (for those speakers who accept partial control). This important difference provides the basis for a new understanding of partial vs. exhaustive control and a new solution to the challenge posed by cased OC.

In this paper, I present evidence from Russian, Icelandic and European Portuguese showing that these three languages all have two distinct kinds of obligatory control (OC), which have many things in common at a certain level of abstraction. I then propose an analysis which serves to derive the semantic and syntactic differences between cased and caseless OC from the mechanics of movement. Section 2 provides an overview of the Russian facts, based largely on Landau (2008). Section 3 does the same for Icelandic, based on novel data; and section 4 for European Portuguese, drawing and expanding on Sheehan (2014b, to appear). Section 5 lays out the theoretical proposal and provides some independent evidence for it. Finally, section 6 mentions some issues for future research before concluding.

2 OC in Russian

In Russian, secondary predicates reflect the case of the DP they modify, though a default instrumental (INST) case is also possible, even preferred (Landau 2008, citing Comrie 1974):

1) a. **Taras** prišël p'janym/ **?p'janyj**
Taras.NOM came drunk.INST/ ?NOM
'Taras came drunk.'

b. Ja našel **ego** p'janym / ?**p'janogo**.
I.NOM found him.ACC drunk.INST/ ?ACC
'I found him drunk.' [Russian, Landau (2008: 882)]

With some adjectives, however, case concord is obligatory and INST is banned: *odin* 'alone', *sam* 'onseself', *vse* 'all' (see Landau 2008: 882):[2]

2) a. **Taras** prišël **odin** / *odnim
Taras.NOM came alone.NOM/ *INST
'Taras came alone.'
b. Ja našel **ego** **odnogo** / *odnim.
I.NOM found him.ACC alone.ACC/ *INST
'I found him alone.' (He was alone) [Russian, Landau (2008: 882)]

In (some) non-finite complements, these same secondary predicates can surface with dative (DAT) case:

3) a. Ona poprosila ego [PRO ne ezdit tuda **odnomu**].
she.NOM asked him.ACC PRO not to.go there alone.DAT
'She asked him not to go there alone.'
b. Ivan dumaet čto [PRO pojti domoj **odnomu**] važno.
Ivan.NOM thinks that PRO to.go home alone.DAT important
'Ivan thinks that it is important to go home alone.' [Russian, Landau (2008: 883)]

[2] Landau does not explicitly state this for *vse* 'all', but it appears to be the case for my informants.

As *odin* requires obligatory case concord, Landau concludes that DAT must come from the non-finite subject here (i.e., what we descriptively call PRO). The implication is that PRO can have its own case, independent of the case of its controller. Note that despite the fact that DAT case seems to be available for the subject of these non-finite clauses, overt referential subjects are not permitted (see Franks and Hornstein 1992).

This is not the only pattern attested in Russian OC, however:

4) Two kinds of Russian OC (Landau 2008)
   (i) PRO inherits the case of its controller = *case transmission*
   (ii) PRO bears a case distinct from that of its controller (DAT) = *case independence*

Landau (2008) goes on to provide questionnaire evidence from around 30 speakers that, in Russian, partial OC is only possible in instances of case independence (where PRO bears dative case). In what follows, I summarise his data before showing that similar patterns obtain in Icelandic and European Portuguese, once we control for independent properties of these languages.

In exhaustive object OC, case independence is preferred but case transmission is also possible for many speakers. In short, both kinds of OC permit an exhaustive reading:

Exhaustive **object** OC ➔ **Case independence optional but preferred**

5) Ona poprosila ego [**PRO**$_{\textbf{ACC/DAT}}$ ne ezdit' tuda odnogo/ odnomu].
   she.NOM asked him.ACC not go.INF there alone.ACC/ alone.DAT
   'She asked him not to go there alone tomorrow.'

ACC OK 60%; DAT OK 90% [Russian, Landau (2008: 888)][3]

With a partial control reading, however, where the controller is a subset of the plural PRO subject, the results are strikingly different.[4] While all speakers who allow partial OC accept case independence in this context, only a very small minority of speakers accept case transmission here. This suggests that, noise aside, only case independence can give rise to a partial control reading:

Partial **object** OC ➔ **Case independence obligatory**

6) Ona poprosila predsedatelja [**PRO$_{DAT}$** sobrat'sja vsem/*vsex v šest'].
she.NOM asked chair.ACC gather.INF all.DAT/*ACC at six
'She asked the chair to all gather at six.'
ACC OK 11%; **DAT OK 100%** [Russian, Landau (2008: 909)]

Turning to non-local subject control across a matrix object (e.g. promise-type matrix verbs), we see that the results are broadly similar. With an exhaustive control reading both case transmission and case independence are possible, though here there is a preference for case transmission (i.e. a nominative secondary predicate).

Exhaustive **non-local subject** OC ➔ **Case independence optional but dispreferred**

[3] These two percentages do not add up to 100% because many speakers accept both forms. For this reason, both in Landau's study and those carried out by the present author participants were given both options independently and asked to rate them, rather than being asked to choose between the two.

[4]This is clear from the fact that the embedded predicate requires a semantically plural subject but the controller is singular.

7) Ivan pokljalsja druzjam [**PRO$_{NOM/DAT}$** sdelat' eto sam/ samomu].
Ivan.NOM vowed friends do.INF it himself.NOM/.DAT
'Ivan vowed to his friends to do it alone tomorrow.'
NOM OK 73%; **DAT OK 45%** [Russian, Landau 2008: 890]

With a partial control reading, however, again case independence seems to become obligatory, though this data point is not included in Landau (2008) and has been checked with only three speakers.

Partial **non-local subject** Control ➔ **Case independence obligatory**

8) Ivan pokljalsja druzjam [**PRO$_{DAT}$** sobrat'sja vsem/ *vse v šest'
Ivan.NOM vowed friends gather.INF all.DAT/.NOM at six
'Ivan vowed to his friends to all gather at six.'
NOM OK 0%; **DAT OK 100%** [not in Landau 2008, checked with 3 native speakers]

Finally, consider local subject control. Here the pattern is slightly different. Only case transmission can give rise to an exhaustive control reading: case independence results in ungrammaticality for all speakers:

Exhaustive **local subject** Control ➔ **Case transmission obligatory**

9) On želaet **PRO$_{NOM}$** ženit'sja na nej sam/ ***samomu** v cerkvi.
he.NOM wants marry.INF her himself.NOM/ *DAT in church
'He wants to marry her himself in a church.'
NOM OK 100%; DAT OK 0% [Russian, Landau (2008: 887)]

Once again, however, with a partial control reading only case independence is possible, modulo a small level of noise:

Partial **local subject** Control ➔ **Case independence obligatory**

10) **Predsedatel'** predpočel **PRO$_{DAT}$** sobrat'sja **vsem**/ ***vse** v šest'.
chair.NOM preferred gather.INF all.DAT/ *NOM at six
'The chair preferred to all gather at six.'
NOM OK 3%; **DAT OK 100%** [Russian, Landau (2008: 908)]

A summary of these patterns is provided in table 1.

OC context	**Case transmission**	**Case independence**
Exhaustive **object** Control	Optional (60%)	Optional (90%)
Exhaustive **non-local subject** Control	Optional (73%)	Optional (45%)
Exhaustive **local subject** Control	Obligatory (100%)	* (0%)
Partial **object** Control	* (11%)	Obligatory (100%)
Partial **non-local subject** Control	* (0%)	Obligatory (100%)
Partial **local subject** Control	* (3%)	Obligatory (100%)

Table 1: distribution of case transmission/independence in Russian

There are several interesting things to be observed in Table 1. Firstly, as noted above, partial control readings are only ever possible in instances of case independence: case transmission can only ever result in an exhaustive control reading. It is not the case, however, that exhaustive readings *require* case transmission. With the exception of local subject control, case independence can have *either* an exhaustive *or* a partial control

reading. This raises the question why local subject control is special in Russian. The most likely explanation seems to be that this can be assimilated to obviation, a more general condition which blocks exhaustive co-reference between subjects of main clauses and their subjunctive complements (Avrutin and Babyonyshev 1997):[5]

11) a.	*Volodja$_i$ xočet	čtoby	(on$_i$)	poceloval	Nadju
	Volodya wants	that.subj	he	kissed	Nadya
b.	Volodja$_i$ xočet	pocelovat’	Nadju		
	Volodya wants	kiss.INF	Nadya		

‘Volodya wans to kiss Nadya.’

[Russian, based on Avrutin and Babyonyshev 1997: 230]

There are three properties of subjunctive obviation which make it parallel to the cased OC obviation pattern discussed above. Firstly, in local subject control contexts, there is a ban only on exhaustive co-reference: partial co-reference is fully grammatical:[6]

12) Ja$_i$	xoču	čtoby	*(my$_{i+}$)	poexali	v Evropu
I	want	that.SUBJ	we	go	to Europe

'I want to us to go to Europe.’

This is parallel to the fact that case independence is grammatical in instances of partial control even with local subject OC. Secondly, finite subjunctive complements, which are

[5] Landau (2008) does not assimilate this effect to obviation but the account he proposes actually has much in common with Avrutin and Babyonyshev’s (1997) account of obviation.

[6] Unattributed data were collected by the present author in consultation with two native speaker informants.

possible with object control verbs, are not subject to the effect: exhaustive co-reference between object and subject is fine in (13a):

13) a. Volodja ugovoril Nadju$_i$ čtoby (ona$_i$) poexala v Evropu
Volodja persuaded Nadya that.subj she went to Europe
'Volodya persuaded Nadya that she should go to Europe.'

b. Volodja ugovoril Nadju$_i$ PRO$_i$ poexat' v Evropu
Volodya persuaded Nadya go.inf to Europe
'Volodya persuaded Nadya to go to Europe.'
[Russian, based on Avrutin and Babyonyshev 1997: 233]

This is parallel to the fact that exhaustive *object* control is permitted in instances of case independence. Finally, subjunctive obviation does not apply with non-local subject control verbs as these never take subjunctive complements.[7]

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[7] Because Russian is a partial pro-drop language, in the sense of Holmberg, Nayudu & Sheehan (2009), there is a kind of obviation effect if the subject of the subjunctive is overt even in indicative complement clauses. Where the embedded subject is null (i), however, this effect disappears (ii):

(i) Volodja$_i$ poobeščal, čto on$_{*i/j}$ poceluet Nadju
Volodja promised that he will.kiss Nadja.ACC
'Volodja$_i$ promised that he$_j$ will kiss Nadja.'

(ii) Volodja$_i$ poobeščal, čto *pro*$_{i/*j}$ poceluet Nadju
Volodja promised that will.kiss Nadja.ACC
'Volodja$_i$ promised that he$_i$ will kiss Nadja.'

In subjunctive complements, the obviation effect obtains even with a null subject, and so is clearly a distinct phenomenon:

(iii) Volodja$_i$ xočet čtoby *pro*$_{*i}$ poceloval Nadju

14)	*Volodja$_{i/j}$	poobeščal	čtoby	on$_{i/j}$	poceloval	Nadju
	Volodja	promised	that.SUBJ	he	kissed	Nadja

This potentially explains the fact that speakers are split roughly 50/50 with respect to whether they allow exhaustive control of case independent forms in instances of non-local subject OC. As there is no parallel subjunctive context where obviation can be observed, speakers have free choice as to whether to apply obviation or not. Some speakers choose to permit exhaustive co-reference, as in instances of object OC, others reject it, as in cases of local subject OC.[8]

Once we factor out this obviation effect (however it is to be analysed), we are left with two clearly different patterns of OC in Russian (see also Landau 2000, 2004, 2008, 2015, as well as van Urk 2010):

(i) Unambiguous exhaustive control (case transmission)

(ii) Ambiguous exhaustive/partial control (case independence)

Because case transmission is banned in cases of local subject control except in instances of partial control, it follows that exhaustive control predicates such as *start*, *have* and *manage* can take only type (i) complements, and so-called partial control predicates (in the sense of Landau 2000) can take either type (i) or type (ii) complements. The fact that the presence of case leads to the possibility of a different interpretation with partial control predicates

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Volodya wants that.subj kissed Nadya.ACC

[8] Space precludes a discussion of potential analyses of obviation, but see Avrutin and Babyonyshev (1997) for one possible account, Kempchinsky (2009) for another and Costantini (2005) for a summary of proposals.

shows that case transmission is not optional, however, (see also Landau 2008 for the same basic conclusion). Rather there are two kinds of control complements, one with case and one without. In the following two sections, I show that the same basic pattern holds in Icelandic and European Portuguese, though with certain complications.

3 OC in Icelandic

Icelandic also has case concord and displays both case independence and case transmission on secondary predicates in some instances of OC. This is easiest to see with object control verbs:[9]

15) Ég bað hann$_i$ að fara einn$_i$/ einan$_i$ þangað.
I.NOM asked him.ACC to go alone.M.SG.NOM/alone.M.SG.ACC there
'I asked him to go there alone.' [Icelandic, Thráinsson (1979:301)][10]

In such contexts, although NOM appears to be available in the embedded clause, overt referential or bound subjects are banned: only a controlled null subject is possible (in parallel with Russian):

[9] For some speakers, including those who completed my email surveys, this is also possible with dative objects, but it is less widely accepted (see Sigurðsson 2008). I report only on accusative object controllers here, for reasons of space. Note that we cannot tell whether this is possible in Russian as case independence there triggers dative. Interestingly, neither language allows case transmission with a (non-structural) genitive controller (see Landau 2008: 904, Sigurðsson 2008: 416).

[10] Sigurðsson (2008) points out that case independence is the most widely accepted form in Icelandic, and certainly the transmission of non-structural matrix clauses is highly marked. However, transmission of *structural* accusative seems to be widely accepted, as he also notes, and it is even obligatory for some speakers in one context (discussed below).

16) Ég bað Maríu að (*hún/*Ásta) fara ein þangað.
I asked Maria.ACC to she/Asta.NOM go alone.F.SG.NOM there
'I asked Maria (for her/Asta) to go there alone.' [Icelandic, Thráinsson 1979:301]

Although there is much variation across speakers, the general trend of case transmission/independence turns out to be strikingly similar to the Russian pattern, once we consider partial control.

Although Icelandic OC has been extremely well studied and much discussed in relation to theories of control (see Andrews 1976, Thráinsson 1979, 2007, Sigurðsson 1991, 2002, 2008, Boeckx and Hornstein 2006, Boeckx et al. 2010b, and the references cited in Bobaljik & Landau 2009, who provide a useful summary of the topic), to my knowledge there has been no previous study of partial control in the language. This is possibly because many Icelandic speakers, including some eminent Icelandic linguists, do not accept partial control. My initial investigations reveal, however, that many (younger) speakers do accept partial control in the same contexts that it is observed in other languages (i.e. under partial control predicates).[11] The data presented here come from younger (graduate student) native speakers. It remains mysterious, of course, why partial control is not more generally available in Icelandic. I have little to say on this topic except to observe that as a phenomenon it is also quite variable in other languages, including English (see Landau 2000 for discussion). What concerns me here is where partial control is possible for those speakers who accept it.

[11] Many thanks to Halldór Sigurðsson and especially Jóhannes G. Jónsson for the encouragement to test this out on younger speakers and for putting me in touch with several very helpful informants.

For those speakers who accept partial control, it seems to display the usual restrictions familiar from other languages (see Landau 2000). There is a sensitivity to matrix predicate: only those predicates (attitude verbs) which take a tensed non-finite complement (accepting independent temporal reference) permit partial control, as in (17):[12]

17) Borgarstjórinn vill giftast/faðmast/heilsast/berjast/bítast/sættast/vingast.[13]
the.mayor wants marry/embrace/greet/fight/compete/be.reconciled/make.friends

18) *Borgarstjórinn fékk /byrjaði að hittast klukkan fimm.[14]
the.mayor managed/started to meet clock five

Other verbs which, like want, permit partial OC for the speakers I consulted include *hataði* (hated), *vonast* (hopes), *kýs* (prefers), *veit* (knows). In what follows I report data elicited via emailed questionnaires from 7 speakers of Icelandic regarding the interaction between case

[12] Pearson (2015) proposes that the correct semantic characterization of partial control predicates is that they are attitude verbs, and this idea is adopted by Landau (2015).

[13] These verbs all occur in the reciprocal form and so require a plural subject. Moreover, while some of these verbs are comitative others are not:

(i) Comitative: berjast (fight), bítast (compete), sættast (be reconciled) vingast (make friends),

(ii) Non-comitative: hittast (meet), faðmast (embrace), heilsast (greet)

(based on Wood 2012: 290-300)

As such, Icelandic appears to have genuine partial control rather than the fake partial control described by Sheehan (2014a) and discussed in section 4.2.

[14] It would be nice to able to confirm that case independence is not possible with these verbs even under an exhaustive control reading. The problem is that, as we shall see, case independence is blocked more generally in instances of exhaustive local subject control.

independence/transmission and partial/exhaustive control. As not all speakers responded to all questions, some data are based on smaller numbers of speakers. Ultimately, given the variability of the phenomenon under discussion, large-scale experimental data is required before we can draw any strong conclusions, but these initial finding are certainly highly suggestive.

In instances of exhaustive object control, patterns of case transmission/independence of secondary predicates mirror very closely those reported for Russian: both case transmission and case independence are possible for most speakers:

Exhaustive **object** Control ➔ **Case independence optional**

19) Hún bað Ólaf [að PRO$_{NOM/ACC}$ fara bara einn/einan í veisluna].
she asked Olaf.ACC to go just alone.NOM/alone.ACC to party.the
'He asked Olaf to go to the party alone.'
(testing an example from Sigurðsson 2008: 414)
ACC OK 83%; NOM OK 100% [Icelandic, n=6)][15]

In instances of partial control, however, only case independence is possible and case transmission becomes ungrammatical, in parallel with Russian:[16]

[15] For the same sentence Sigurðsson (2008: 414) reports broadly the same results:
ACC OK 93%; NOM OK 87% (n=15)
As Sigurðsson does not test partial control, I show percentages in the main text only for the speakers I consulted to make the comparison between exhaustive and partial control clearer. Sigurðsson (2008) shows that, with object OC predicates taking a dative object, acceptability is slightly lower for DAT transmission (66%). The same effect seems to hold for my informants.

[16] The percentage is 80% rather than 100% because one of the speakers who accepted partial control did not allow the addition of a secondary predicate, and so found both the nominative and accusative forms equally

Partial **object** Control ➔ **Case independence obligatory**

(30) Hann bað Ólaf [að PRO$_{NOM}$ hittast einir/*eina]
he asked Olaf.ACC to meet.ST alone.NOM.M.PL/ACC.M.PL
'He asked Olaf to meet alone.PL.'
ACC OK 0%; **NOM OK 80%** [Icelandic, n=5]

Note that the features of the secondary predicate also differ in phi-features from the controller and show that PRO is plural here. This poses an immediate problem for many previous accounts of partial control (cf. Landau 2000, 2004, 2008, Hornstein et al. 2010).

Testing subject control is more difficult in Icelandic because NOM is both the structural Case of subjects and the independent case of PRO. There are, however, two contexts where structural subjects surface with a case other than NOM (Landau 2008 points out context (ii)):

(i) Quirky contexts – where certain local subject control verbs bear quirky DAT/ACC
(ii) ECM contexts – where the subject of a non-finite clause comes to bear structural ACC

Icelandic makes liberal use of non-nominative quirky subjects, which are genuine subjects occupying the subject position via A-movement, controlling for the V2 property of

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bad in (30). This is possibly due to the clash between the singular features of the controller and the plurality of PRO (see Landau 2000, to appear). One speaker also totally rejected partial control.

Icelandic (see Andrews 1976, Thráinsson 1979, Zaenen, Maling and Thráinsson 1985, and others):

20) **Henni** hefur alltaf þótt Ólafur leiðinlegur.
her.DAT has always thought Olaf.NOM boring.NOM
(Zaenen, Maling and Thráinsson 1985)

21) **Strákunum** var bjargað.
the.boys.M.PL.DAT was rescued.DFLT
'The boys were rescued.' (Andrews 1980)

In cases of A-movement (passive and raising-to-object) quirky case is famously determined 'downstairs' and obligatorily preserved on the DP in question ('case preservation/percolation' - Sigurðsson 2008):

22) Raising: [DP_{DAT} T $V_{non\text{-}quirky}$ [V_{quirky_DAT} t_{DP}]]
Mönnunum/*Mennirnir virðist báðum [t hafa verið hjálpað].
men.the.DAT/*NOM seem both.DAT have been helped.DFT
'The men seem to have both been helped.' (Sigurðsson 2008: 419)

In instances of OC, however, the case of the matrix subject (controller) is always determined 'upstairs' by the control predicate (see Thráinsson 1986):

23) OC: *[DP_{DAT} T $V_{non\text{-}quirky}$ [PRO_{DP} V_{quirky_DAT}]]
Mennirnir/*Mönnunum vonast til [að PRO verða báðum hjálpað].
men.the.NOM/*DAT hope for to be both.DAT helped.DFT

'The men hope to be both helped.' (Sigurðsson 2008: 419)

PRO has obligatory quirky case where the embedded predicate is quirky, to the extent that such examples are acceptable (see Sigurðsson 2008, Bobaljik & Landau 2009 for discussion):

24) OC: *[DP_{ACC} [PRO_{ACC} V_{quirky_DAT}]

(#)Jón bað hann að leiðast ekki einum/*einan.

Jon.NOM asked him.ACC to be.bored not alone.DAT/alone.ACC

'Jon asked him not to be bored alone.'

(based on B&L 2009: 116, who build on B&H 2006:594)

If the controller has quirky case, however, something surprising occurs: PRO can share its quirky case for a minority of speakers, though all speakers accept NOM here and many speakers require it (see also Sigurdsson 2008).

Nonetheless, the availability of optional transmission of quirky case (for some speakers) allows us to test what happens in partial/exhaustive OC contexts with local subject control. In exhaustive control contexts only two of seven informants accepted case transmission of quirky case:

Exhaustive **local subject** Control ➔ **Case transmission optional for some**

25) Ólaf langaði [að $PRO_{\%ACC/NOM}$ vera %fyrstan/fyrstur].

Olaf.ACC longed to be the.first.one.ACC/the.first.one.NOM

(example from Sigurðsson 2008: 415)

ACC OK 29%; NOM OK 100% [Icelandic, n=7][17]

Even for these two speakers, however, who both accept partial control, only nominative is possible with a partial control reading:

Partial **local subject** Control ➔ **Case independence obligatory**

26) Ólaf langar [að PRO_{NOM} hittast einir/ *eina]
Olaf longs to meet alone.NOM.M.PL/ alone.ACC.M.PL

ACC OK 0%; **NOM OK 100%** [Icelandic, n=5]

In this context too, then, the generalisation holds that partial control readings are only possible where PRO has its own (nominative) case.

In ECM contexts, it appears that case transmission is basically obligatory, with case independence very marginal or banned for the three speakers I have consulted.[18] It is worth highlighting how unusual this is in the Icelandic context, where case independence (NOM) is usually unanimously accepted:

Exhaustive **local subject** Control ➔ **Case transmission obligatory**

27) þeir töldu [Harald vilja [PRO_{ACC} fara ??einn/einan þangað]].

[17] Sigurðsson's (2008: 415-416) survey of 15 people reveals how marked transmission of quirky case is:
ACC OK 27%; NOM OK 100%. (n=15)
Again, he does not discuss partial control.

[18] This is in line with the judgment reported by Landau (2008) from Sigurðsson (p.c.).

they believed Harald.ACC want.INF go alone.NOM/aloneACC there

'They believed Harald to want to go there alone.'

This appears to be an effect of obviation in local subject control, equivalent to the pattern seen in Russian (and also observed below for European Portuguese). Somewhat surprisingly, however, case independence does not become possible under a partial control reading in Icelandic, at least for my informants, unlike what we saw in Russian. None of the three speakers allow partial control here with either form of the secondary predicate:

Partial **local subject** Control ➔ **ungrammatical**

28) *Hún taldi Harald vilja PRO hittast einir/eina

she believed Harald.ACC want.INF meet alone.NOM/aloneACC

The implication is that obviation holds of partial co-reference here too. For the speakers I consulted then, it appears that case independence is simply not available in such contexts and so neither is partial control. The generalisation remains intact that partial control is possible only with case independence, though a larger survey is obviously needed here in order to gain a better understanding of whether and why partial control is not possible in this ECM context.[19]

Now consider non-local subject control in ECM contexts. Based on preliminary data from only one speaker, the pattern here is again broadly similar to that which is observed in

[19] As we shall see, in EP, many speakers also reject partial control in this context, so this effect is not isolated to Icelandic.

Russian. With partial control, case independence is obligatory. Moreover, for this speaker at least, there is no obviation effect here, as was the case for some speakers of EP and Russian. What is perhaps surprising is that case transmission is not possible in exhaustive control contexts (though recall that this was also subject to variation in Russian and here we have data from only one speaker here):

Exhaustive **non-local subject** Control ➔ C**ase independence only**

29) þeir töldu Harald hafa lofað að PRO$_{NOM}$ fara einn/*einan þangað.
they believed Harald.ACC have.INF promised to go alone.NOM/.ACC there
'They believed Harald to have promised to go there alone.'

Partial **non-local subject** Control ➔ **Case independence only**

30) þeir töldu Harald hafa lofað honum að hittast
they believed Harald.ACC have.INF promised him to meet
einir/*eina.
alone.NOM.MPL/ACC.MPL

Once again this pattern is consistent with the claim that partial control is possible only where PRO has case. The following table summarises these (somewhat preliminary) Icelandic facts:

OC context	**Case transmission**	**Case independence**
Exhaustive **object** control	Optional (83%)	Optional (100%)
Exhaustive **local subject** control	QUIRKY Optional (29%)	QUIRKY Optional (100%)
	ECM Preferred	ECM ??/*

Exhaustive **non-local subject** control	ECM *	ECM Obligatory
Partial **object** control	*	Obligatory (66%)
Partial **local subject** control	QUIRKY *	QUIRKY Obligatory (100%)
	ECM *	ECM *
Partial **non-local subject** control	ECM *	ECM obligatory

Table 2: distribution of case transmission/independence in Icelandic

In many respects then, the case transmission/case independence split patterns very similarly in Icelandic and Russian. In both languages, partial OC always requires *case independence* of secondary predicates Similarly, in both languages, both *case independence/case transmission* are possible in exhaustive object control contexts. In both languages we see an obviation effect in instances of local subject control, but in Icelandic, unlike in Russian, this effect also seems to rule out partial control. In contexts of non-local subject control, preliminary data from one speaker suggest that things again work in parallel here with no obviation effect and partial control being possible, though it remains to be seen whether other speakers permit case transmission in this context.

4 OC in European Portuguese

4.1 Inflected infinitives and Control

European Portuguese (EP) also has two different kinds of OC, control of inflected and uninflected infinitives (see Raposo 1989, Madeira 1994, Sitaridou 2002, 2007, Sheehan

2014a, b, to appear, cf. also Pires 2006).[20] Given the robust evidence that inflected infinitives can assign NOM case (Raposo 1987, Madeira 1994, Quicoli 1996), we can draw the following parallel between EP and the other two languages:

- *Inflected infinitives = case independence*
- *Uninflected infinitives = case transmission*

With uninflected infinitives, PRO shares all of its features with its controller. With inflected infinitives, however, PRO has its own features with the requirement is that it be (partially or exhaustively) controlled. There are contexts, of course, where inflected infinitival clauses have overt/null referential subjects (Raposo 1987), but we limit ourselves to OC contexts here for reasons of space (see Sheehan, to appear for more extensive discussion of EP inflected infinitives and control vs. non-control contexts). At first glance, the pattern of case independence vs. case transmission in EP looks rather different from that observed in the other two languages. I first lay out these facts, based on several large-scale judgement surveys of native speakers carried out by the present author. I then argue that the main apparent difference is illusory, before sketching a unified analysis of OC in the three languages.

[20] See also Rabelo 2004, 2010, Modesto 2007, 2010, in press on Brazilian Portuguese. An anonymous reviewer questions the claim that inflected infinitives can ever be controlled in Portuguese, citing Pires (2006). See Sheehan (to appear) for a discussion of a wide range of control diagnostics in relation to EP. While there seems to be substantial interspeaker variation in this respect, for many speakers, at least, the subject of inflected infinitives under control predicates behaves like PRO. Space precludes a full presentation of these facts here.

First, consider exhaustive object control. With both exhaustive and partial readings both inflected and uninflected infinitives are possible:

Exhaustive **object** Control ➔ **Inflected infinitive optional**[21]

31) O professor persuadiu os alunos a fazer(em) o trabalho.
the teacher persuaded the pupils A do.INF.3PL the work
'The teacher persuaded the pupils to do the work.'

Uninflected OK 70%; inflected OK 70% (n=44)

Partial **object** Control ➔ **Inflected infinitive optional and preferred**

32) Os professores persuadiram o director a reunir(em)-se mais tarde.
The teachers persuaded the headteacher A meet.INF.3PL=SE.3 more late
'The teachers persuaded the headteacher to meet later on.'

Uninflected OK 68%; inflected OK 97% (n=37)

As Landau reports to be the case for Russian, there is a great deal of inter-speaker variation here with some speakers accepting both forms and some preferring one form or the other. Note that the inflected infinitive (case independence) form is almost unanimously accepted

[21] In not otherwise attributed, data in this section were collected by the author either via a series of online questionnaires with different numbers of respondents (if percentages are given) or in consultation with native speaker informants (if they are not). Although sociolinguistic information was collected (age, region of origin, domiciled region), it is not considered here. Each questionnaire contained around 30 example sentences, rated on a 5-point scale. For ease of exposition, I group together *muito bem* 'very good', *bem* 'good'and *mais o menos* 'more or less' here as OK, and *mal* 'bad' and *muito mal* 'very bad' as * to make the data more comparable with the Russian and Icelandic facts. For a more intricate discussion of the survey data see Sheehan (to appear).

with a partial control reading, however. Nonetheless, EP presents a potential exception to the generalisation established above based on the Russian and Icelandic data (building on Landau 2008) that partial control requires case independence.

Now consider non-local subject control, where the effect is broadly similar:[22]

Exhaustive **non-local subject** Control ➔ **Inflected infinitives optional but dispreferred**

33) Prometemos à professora chegar(%mos) a tempo.
promised to.the teacher arrive.INF.1PL at time
'We promised the teacher to arrive on time.'
Uninflected OK 100% (n=37)**; inflected OK 47%** (n=68)

Partial **non-local subject** Control ➔ **Inflected infinitives optional and preferred**

34) O Pedro prometeu à Ana reunir(em)-se em Braga
the Pedro promised to.the Ana meet.INF(.3PL)=SE.3 in Braga
'Pedro promised Ana to meet in Braga.'
Uninflected OK 70%; inflected OK 95% (n=37)

Once again, note that almost all speakers accepted an inflected infinitive with a partial control reading and that only around half did so with an exhaustive reading (as in

[22] I use % here to indicate variation across speakers and around half of those surveyed accepted the example.

Russian).[23] Once more, however, many also accepted an uninflected infinitive in partial control contexts, in apparent violation of the generalisation established above for Russian and Icelandic.

Finally, consider local subject control. Here we see a clear parallel with Icelandic and Russian in the form of an obviation effect: inflected infinitives preclude exhaustive OC in local subject control contexts (see Sheehan 2014b):

Exhaustive **local subject** Control ➔ **Inflected infinitive impossible**

35) Preferíamos receber(*mos) um salário maior

[23] An anonymous reviewer questions whether the examples with inflected infinitives really involve control here, based on the fact that a search of the web brings up uncontrolled examples of the following kind with this verb:

(i) Prefiro serem públicos estes salários …
prefer.1SG be.inf.3PL public.pl these salaries
'I would prefer for these salaries to be public …'

As Sheehan (to appear) shows, the verb *preferir* is indeed *not* a control verb for many EP speakers, but there is a split in this regard. For those speakers who permit inflected infinitival complements only in instances of partial control, it has the properties of obligatory control (obligatory co-reference, sensitivity to locality, sloppy reading under ellipsis etc.). Note also that, as noted by Williams (1980), a wide range of (partial) control verbs also permit a non-controlled non-finite or finite complement (see also Grano 2012):

(i) I would prefer for you to leave now.

(ii) ?I promised Mary for there to be lots of wine at the party.

(iii) I promised Mary that there would be lots of wine at the party.

Williams classified verbs like prefer as NOC verbs on this basis, but Landau (2000) shows that these verbs are also OC verbs, and that permitting non-control complements is therefore not a useful diagnostic for OC, though it often tracks the PC/EC distinction.

Prefer.1PL receive.INF.1PL a salary higher

'We would prefer to have a higher salary.'

Uninflected OK 100%; inflected OK 0% (n=19)

However, in partial control contexts, inflected infintitives become possible for just under half the speakers surveyed:[24]

Partial **local subject** Control ➔ **Inflected infinitive dispreferred**

36) O João$_i$ preferia [PRO$_{i+}$ reunir(%em)-se mais tarde].

the João preferred.3SG meet.INF.3PL=SE.3 more late

'John would prefer to meet later on.'

Uninflected OK 81%; **inflected OK 40%** (n=24)

Again, the majority of speakers allow a partial control reading with an uninflected infinitive in this context. The following table summarises these findings:

Control context	**Uninflected infinitives**	**Inflected infinitives**
Exhaustive **object** Control	Optional (70%)	Optional (70%)
Exhaustive **non-local subject** Control	Optional (100%)	Optional (47%)

[24] These speakers only accepted this on an OC reading, as shown by the fact that the vast majority rejected the presence of a pronoun co-referent with the matrix subject:

(i) *O João$_i$ preferia reunirem-se sem ele$_i$

the João preferred.3SG meet.INF.3PL=SE.3 without him

Lit. 'João$_i$ preferred/would prefer to meet without him$_i$.'[*=88%, ?=12%, ✓=0%, n=24]

However, in a later survey, it became apparent that some EP speakers accept examples like (36) under a non-OC reading. See Sheehan (to appear) for discussion of the facts and a potential analysis.

Exhaustive **local subject** Control	Obligatory (100%)	* (0%)
Partial **object** Control	Optional (68%)	Optional (97%)
Partial **non-local subject** Control	Optional (70%)	Optional (95%)
Partial **local subject** Control	Optional (81%)	Optional (40%)

Table 3: distribution of inflected/uninflected infinitives in EP (version 1, to be amended)

While exhaustive control in EP is highly reminiscent of its counterpart in Icelandic and Russian, the pattern for partial control looks strikingly different (see tables 1 and 2 repeated here). Whereas in Russian and Icelandic partial control requires case independence (equivalent to an inflected infinitive), EP appears to permit a partial reading also with an uninflected infinitive (equivalent to case transmission).

OC context	**Case transmission**	**Case independence**
Exhaustive **object** Control	Optional (60%)	Optional (90%)
Exhaustive **non-local subject** Control	Optional (73%)	Optional (45%)
Exhaustive **local subject** Control	Obligatory (100%)	* (0%)
Partial **object** Control	* (11%)	Obligatory (100%)
Partial **non-local subject** Control	* (0%)	Obligatory (100%)
Partial **local subject** Control	* (3%)	Obligatory (100%)

Table 1: distribution of case transmission/independence in Russian

OC context	**Case transmission**	**Case independence**
Exhaustive **object** control	Optional (83%)	Optional (100%)
Exhaustive **local subject** control	QUIRKY Optional (29%)	QUIRKY Optional (100%)

	ECM Preferred	ECM ??/*
Exhaustive **non-local subject** control	ECM *	ECM Obligatory
Partial **object** control	*	Obligatory (66%)
Partial **local subject** control	QUIRKY *	QUIRKY Obligatory (100%)
	ECM *	ECM *
Partial **non-local subject** control	ECM *	ECM obligatory

Table 2: distribution of case transmission/independence in Icelandic

In the following section, I review an earlier argument of mine that this is not actually the case, as partial control readings of uninflected infinitives are 'fake' (see also Pitteroff et al. 2016 on fake partial control in German).

4.2 Fake Partial control

Sheehan (2014a) argues that in many Romance languages, apparent partial control results from exhaustive control with the presence of a covert comitative, following a proposal in Hornstein et al. (2010). In such contexts, as illustrated in (37)-(38), the controlled subject shares all of its syntactic features with its controller because these are really instances of exhaustive control (note that this fact remains unexplained under Landau's unified approach to partial control, including Landau, to appear, who critiques the null comitative approach):

37) Eu preferia reunir-me/*nos/*se mais tarde.
I preferred.1SG meet.INF=SE.1SG/SE.1PL/SE.3 more late
'I preferred/would prefer to meet later.'

38) Preferias reunir-te/*se mais tarde?

prefer.2SG meet.INF=SE.2SG/SE.3 more late

'Would you prefer to meet later on?'

In (37)/(38) the reciprocal marker must be 1sg/2sg respectively, even though the interpretation is that the meeting involved several people.[25] This is explained if such examples involve exhaustive control with the (fake) partial control reading arising from the presence of a null comitative licensed in the scope of a [+T] infinitival, as proposed by Hornstein et al (2010):

39) a. The chair$_i$ hoped [t$_i$ to meet pro$_{comitative}$ at 6]

b. The chair$_i$ hoped [t$_i$ to apply together *pro*$_{comitative}$ for the grant]

While Hornstein et al.'s proposal faces certain serious challenges as an analysis of English, not least because partial control is not restricted to comitative complements in English, in French, Spanish, Italian and EP, there is a close correspondence between those verbs which can surface with an overt comitative and those permitting partial control with an uninflected infinitive (see Sheehan 2014a). *Reconciliar-se* 'to make up' is comitative like *reunir-se* 'to meet' and *envolver-se* 'to get involved', but *beijar-se* 'to kiss' is not:

40) O Pedro está farto de discutir com a Maria. Queria reconciliar-se **(com ela)**.

the P is sick of argue.INF with the Maria wanted make.up=SE.3 with her

'Pedro is sick of arguing with Maria, He wants to make up.'

[25] Nota that such examples also show that the inflection of infinitives in OC is not merely an optional morphological matter.

Non-comitative verbs do not permit a partial control reading with uninflected infinitives in EP (or French, Italian, Spanish – see Sheehan 2014a). With such verbs we can form minimal pairs where only the inflected form permits a partial control reading (and even then only for some speakers in line with the general pattern described above):

41) a. %Adoro a Maria mas preferia não nos beijarmos em público.
Love the Maria but preferred not SE.1PL kiss.INF.1PL in public

b. *Adoro a Maria mas preferia não me beijar em público (com ela).
Love the Maria but preferred not SE.1SG kiss.INF in public with her

These non-comitative verbs differ from comitative verbs in always requiring a plural subject (on a reciprocal reading) and hence permitting partial control only where the reciprocal SE is plural. Other verbs which pattern in the same way include *corresponder-se* 'to correspond', *falar-se* 'to speak', *escrever-se* 'to write, *abraçar-se* 'to hug' and *perceber-se* 'to understand'.

If we accept that this is the most likely account of the apparent cases of partial control of uninflected infinitives in EP, then the OC patterns observed in the three languages start to look extremely similar.[26]

[26] Essentially, it was a problem with the EP surveys that only commitative verbs were used to test partial control. Ideally, one would want to collect quantitative evidence of the sensitivity to comitativity, but this is a matter for future research.

Control context	**Uninflected infinitives**	**Inflected infinitives**
Exhaustive **object** Control	Optional (100%	Optional
Exhaustive **non-local subject** Control	Optional (100%)	Optional (47%)
Exhaustive **local subject** Control	Obligatory (100%)	* (0%)
Partial **object** Control	*	Obligatory (97%)
Partial **non-local subject** Control	*	Obligatory (95%)
Partial **local subject** Control	*	Obligatory (40%)

Table 4 distribution of inflected/uninflected infinitives in EP (version 2)

Like in Russian and Icelandic, true partial control is only possible in EP where PRO has its own case. In exhaustive contexts, however, either kind of control is possible, modulo obviation effects. As in Russian, obviation rules out exhaustive control of inflected infinitives in local subject control contexts for all speakers and in non-local subject control contexts for around 50% of speakers. One thing that remains surprising is the fairly low acceptability of inflected infinitives with a partial control reading in local subject OC. We do not know for sure that this is a special feature of EP, however, given the small numbers of informants for this data point in Icelandic (n=3).[27]

5 A unified account?

While there have been many different approaches to OC, two dominant Minimalist approaches analyse it either via Agree (Landau 2000, 2004, 2008, et seq. and many other

[27] As Sevdali (2013) shows in detail, the patterns of case transmission in Ancient Greek look quite different and cannot be subsumed under the same analysis.

people) or via movement (Hornstein 1999, et seq. and many other people). My proposal is that, in a sense, both approaches are correct. OC in instances of case transmission is derived via movement, but OC in instances of case independence is derived via Agree (or failed movement). In this much, my proposal has something in common with the approaches of Cinque (2006), van Urk (2010) and Grano (2012), which all propose that some but not all cases of OC are movement-derived. As van Urk (2010) points out, in other places in grammar there are two distinct ways to establish the same kind of dependency:

- Gaps vs. resumptive pronouns (van Urk 2010, and many others)
- Particles vs. overt movement (Cheng 1991)
- Agree vs. movement of subject (Chomsky 2000)

My proposal, and his, is that the same is true here: OC can be derived via movement or Agree with *pro*. More specifically, I propose that if we follow Chomsky (2000, 2001) in taking Agree to be a precursor to movement, then OC can result either from a successful instance of Agree+EPP where the same DP is both probed and attracted, or an unsuccessful instance where a DP is probed but cannot be attracted (because of the ban on improper movement). In the following sections I spell out this proposal and its predictions in some detail before mentioning some remaining challenges.

5.1 Caseless control (control as movement)

Where we have case transmission/uninflected infinitive and the controlled subject shares all of the features of its controller, I propose, following Hornstein (1999 et seq.) that control is derived via movement, with the same DP occupying two theta-positions hence acquiring

two thematic roles. Formalising the Movement Theory of Control (MTC) as Agree+EPP, we can posit that a matrix thematic head *v/Appl* bears the interpretable but unvalued feature [D:]^{EPP} forcing it to probe its visible complement domain for a DP with a referential index which might serve as a potential argument. If it comes across an 'active' DP and forms an Agree dependency, [D:]^{EPP} is valued with that DP's referential index and then because [D:]^{EPP} is associated with a movement trigger, the agreed-with DP is then attracted to the specifier position of this thematic head, meaning that it will be assigned a second theta-role configurationally. This is just the MTC formalised in Chomsky's (2000, 2001) Agree-based terms, with the attracting feature being [D:]^{EPP}, as illustrated with the following example. Note that in this example [D:]^{EPP} is on Appl, but in instances of subject control it would be on v (with non-local subject control posing familiar challenges – see Hornstein and Polinsky 2010 for one solution).

42) Movement-control[28]

Eu	persuadi	os meninos$_i$	a t$_i$	ler	esse livro.[29]
I	persuaded	the kids	A	read.INF	that book

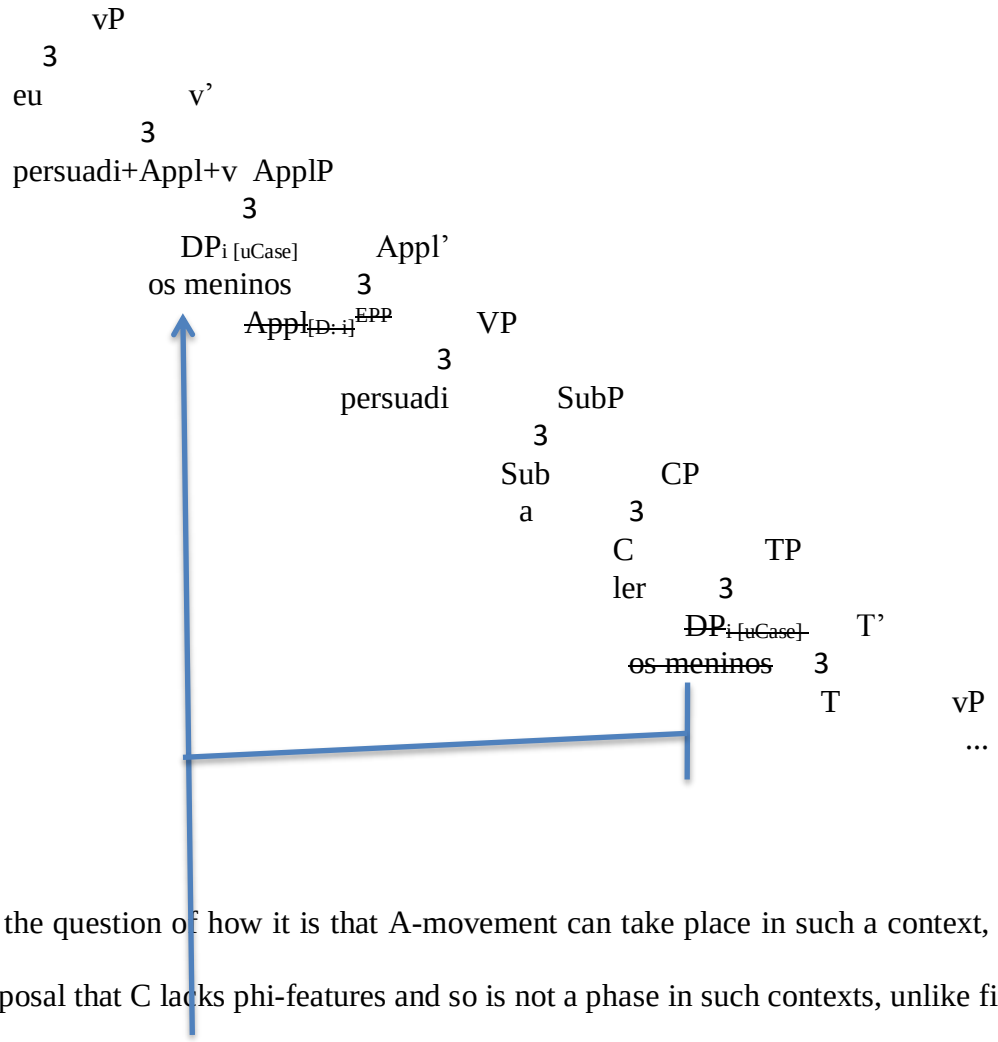
[28] This would also be the derivation of OC in languages without case independence/inflected infinitives such as Italian, French and Spanish. Thanks to an anonymous reviewer for asking me to clarify this.

[29] An anonymous reviewer asks what the status of 'a' is in (42). He/she suggests that it might be a dative marker, given the possibility of (i), where it introduces a nominalization. If this is the case then the non-finite clause might actually be introduced in spec ApplP:

(i) Persuadi os meninos à leitura deste livro.
Persuaded.1SG the kids to.the reading of.this book

I leave this interesting suggestion to one side here, assuming, as is standard that animate benefactives are introduced in spec ApplP and assuming that *a* is a non-finite subordinator. Note that *a* cannot be in C as it fails to block T-to-C movement.

‘I persuaded the kids to read that book.’



On the question of how it is that A-movement can take place in such a context, I adopt the proposal that C lacks phi-features and so is not a phase in such contexts, unlike finite CPs or the non-finite CPs of case independence/inflected infinitives.

In Russian/Icelandic, case transmission occurs because the A-moved DP’s Case features are valued only in the higher clause. As the embedded CP is not a phase, secondary predicates only have their case features valued after the single DP receives Case in the higher clause.[30]

[30] I take the standard view here that case and Case are closely connected, though not identical. However, as an anonymous reviewer reminds me, this is problematic in Icelandic and possibly more generally. One of the main challenges for this idea, however, is the availability of case in OC contexts, the very issue which I am attempting to account for here. The present paper can therefore be taken as an attempt to modify traditional Case theory in order to accommodate these challenges (but see Sigurðsson 2008, 2012 for an alternative

The behavior of Icelandic main predicates raises some non-trivial challenges for this account. Even in instances of case transmission, main embedded predicates never share the case of the controller. Nor do they surface in default form as they do where their subject is non-nominative. Somewhat surprisingly, main predicates always surface in the form associated with nominative subjects even where case transmission is possible:

43) Ég bað Maríu að vera tekin/ *tekna af lögreglunni.
I.NOM asked Maria.ACC to be taken.F.SG.NOM/*ACC by the.police
'I asked Maria to be taken by the police.'
(Bobaljik & Landau 2009: 119, citing Thráinsson 1979:362–363)

As Sigurðsson (2008) notes, this is a challenge for the MTC, as main predicates are accusative in ECM contexts. I have no good explanation for this difference between main and secondary predicates at present. As no other account of OC that I am aware of is able to derive these facts in a non-stipulative manner, this remains an open problem.

The differences between raising and local subject OC in Icelandic are less problematic, though still not totally as expected. The fact that quirky case can percolate up in raising but not control contexts follows if quirky case is a selected for. A quirky DP can raise to a case position in Icelandic as quirky case does not serve to license nominals, but it cannot raise to a thematic position that does not select for the same type of quirky case. One thing that remains unexpected, however, is that transmission of quirky case is possible for some speakers. That would seem to suggest either that a quirky argument can occupy a non-

proposal). I therefore adopt the term Case to mean nominal licensing (see also Sheehan & van der Wal 2016 for a defense of nominal licensing).

quirky position in the embedded clause, or more likely, that DPs receive quirky case derivationally, rather than being base generated with it. Again, as far as I am aware, these are problems for all theories of case, Case and control, to I raise them here as areas for future refinement.

5.2 Cased control *(pro*-Control)

Now consider a scenario whereby a thematic head probes with its [D:]^{EPP} feature and locates an inactive goal, which already has Case. Assuming that phasehood of CPs is linked to the presence of Case, and that the Phase Impenetrability Condition (PIC) holds, it follows that for this to happen the DP in question would have to occupy a lower phase edge. Suppose, following much work on defective intervention, that this goal, although it has a been valued for case, can nonetheless agree with the thematic head, valuing its [D:]^{EPP} feature. The ban on improper movement (whatever it derived from) would then prevent said DP from A-moving to satisfy the associated EPP feature.[31] This, in turn, would mean that at the CI-interface the thematic head Appl is associated with two distinct arguments: its [D:]^{EPP} feature has been valued by DP_i whereas DP_j occupies its (thematic) specifier position.

Assuming following Baker (1988) and much subsequent work, that theta-roles are configurationally determined, it follows that DP_j will receive Appl's θ-role, but Appl is also thematically linked to DP_i via Agree ([D:i]). I propose that this failed movement

[31] It is, of course, very important how the ban on improper movement is derived in the Minimalist context and also how A and A-bar movement can be distinguished on a phase-based approach. I leave these matters to one side here, however, as the proposal I am making does not depend on the technicalities of how they are derived but rather the observation that they hold.

configuration also gives rise to OC. The fact that the same thematic head is connected to two distinct arguments imposes a requirement that DP_j must be *non-distinct* from DP_i. There are two ways to satisfy this condition: either j = i (yielding exhaustive OC); or j⊆i (yielding partial OC).[32] As we have seen above, modulo obviation effects, cased control is ambiguous in this way. A crucial difference between the two kinds of OC, then, is that in instances of case independence/inflected infinitives CP has phi-features and so is a phase. The only way OC into a phase is possible is if the embedded subject raises to the phase edge position, making it visible to a matrix thematic probe.[33] This thematic Agree is what gives rise to ambiguous partial/exhaustive control. Consider the following example:

44) Cased control[34]

Eu	persuadi	os meninos	a	*pro*	lerem	esse livro
I	persuaded	the kids	A		read.INF.3PL	that book

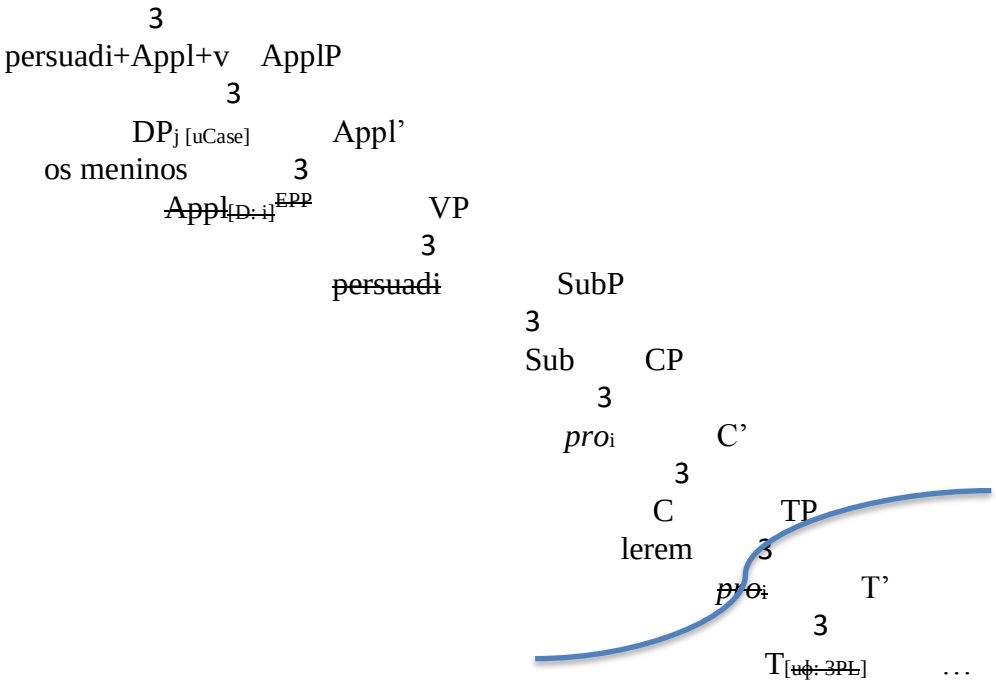
'I persuaded the kids to read that book.'

vP
3
eu v'

[32] One might legitimately ask why this results in partial control and not its inverse whereby the controller can be a superset of the controllee. This derives from the fact that the non-distinctness requirement is derivationally construed so that the argument that merges second with Appl must be non-distinct from the referential index which Appl already bears at this point. If j were to be a superset of i, it would be distinct from i as it would refer to referents not contained in i.

[33] Non-obligatory control might be what happens where *pro* fails to raise to spec CP and so cannot be controlled syntactically but rather via logophoricity.

[34] An anonymous reviewer asks me to clarify whether this derivation would be possible in all languages. The answer is no. Not all languages seem to have cased OC. Sheehan (2014a) argues, for example, that French, Italian and Spanish all lack it.



In Icelandic/Russian *pro* has case and (presumably) phi-features but does not trigger full verbal agreement. This follows if, as proposed by Landau (2008) for Russian, these cases actually come from C rather than T.

One question that arises at this point is the following: if these CP complements are phasal Case domains then why don't they license fully referential subjects. My proposal is that this can be attributed to the fact that the controlled subject occupies the phase edge. By moving to the phase edge, a pronoun essentially loses its referential possibilities by making itself visible for thematic probing: in essence, *pro* 'becomes' PRO because it occupies the phase edge (see McFadden and Sundaresan 2016 for a broadly similar idea). This serves to rule out the possibility of referential subjects in such contexts, even though Case is available. It also allows us to model a further difference between EP and Russian/Icelandic: EP inflected infinitives also permit referential subjects in certain contexts, though often only in a postverbal position (unless the clause is nominalised).

In argument clauses with overt subjects, clitic placement indicates that inflected infinitives preferentially raise to C, as enclisis is preferred by most speakers. The fact that subjects can precede the verb in such cases shows that these subjects must occupy spec CP (see the discussion in Madeira 1994: 197):

45) (?)Será difícil [eles reunirem-se amanhã].
will.be difficult them meet.INF.3PL=SE.3 tomorrow
'It will be difficult for them to meet tomorrow.' [*=5%, ?=20%, ✓=75%, n=20]

This is famously not the case where inflected infinitives surface as the complement to epistemic verbs with an overt subject. In such cases, only post-verbal subjects are possible:[35]

46) Eu penso [{*os deputados} terem {os deputados} trabalhado pouco].
I think the MPs have.INF.3PL the MPs worked little
'I believe the MPs to have worked very little.' (EP, adapted from Raposo 1987: 87)

Essentially, it seems that overt referential subjects of inflected infinitives must occupy spec TP when their host clause is a complement, but can occupy spec CP otherwise. An anonymous reviewer points out that focused/quantified subjects are an important exception to this generalization, as discussed by

[35] The complements of factive verbs pattern differently but Raposo (1987) shows that they can also be introduced by a determiner, so are probably nominalized.

In our terms, this is because in complement clauses DPs in spec CP get obligatorily controlled. The difference between EP vs. Icelandic/Russian is simply that not all phasal infinitival clauses have an EPP feature forcing subject-movement to spec CP in EP. Those that do, give rise to control; those that do not, permit referential subjects.

It is not easy to tell for sure whether the complements of factive and epistemic verbs permit only referential subjects or are ambiguous between referential subjects and obligatory control. Inflected infinitival clauses with referential subjects are reported to give rise to obviation (Sitaridou 2002: 38-39), so if co-reference were allowed this would be an indication that they are perhaps ambiguous. Indeed, there are contexts where co-reference is possible for some speakers, but these involve auxiliary verbs which also serve to alleviate obviation effects in subjunctive contexts (Raposo 1985, Costantini 2005). Compare the following examples:

47) *A Maria$_i$ preferia que (ela$_i$) näo encontrasse o Manel.
the Maria preferred that (she) not found.SBJ.3S the Manel
'Maria preferred that (she) had not met Manel.' (Raposo 1985: 86)

48) %A Maria$_i$ preferia que (ela$_i$) näo tivesse encontrado o Manel.
the Maria preferred that (she) not had.SBJ.3SG found the Manel
'Maria preferred that (she) had not met Manel.' (Raposo 1985: 86)

49) *pro_i lamentamos [pro_i virmos]
regret.1PL come.INF.1PL

50) % pro_i lamentamos [pro_i termos vindo].
regret.1PL have.INF.1PL come

'We regret (our) having come.' [*=43% ?=27% ✓=29%, n=67]

What looks like partial control is also possible with these verbs. However, as obviation rules out only full co-reference, as discussed above, these examples could just involve accidental co-reference.

There is suggestive evidence, however, that verbs like *pensar* 'think' fail to license both kinds of inflected infinitival complement from the fact that the same people seem to accept aux-to-comp constructions as accept apparent partial control examples. This is unexplained if two distinct mechanisms are involved. Note that the same does not hold with verbs like *preferir* 'prefer' (see Sheehan, to appear).

51) %Penso reunirmo-nos mais cedo amanhã.
think.1S meet.INF.1PL=SE.1PL more early tomorrow
'I plan to meet earlier on tomorrow.'
[*=27% ?=35%✓=38%, n=37]

52) %Penso terem os ministros chegado a um acordo.
think.1S have.INF.3PL the ministers arrived at an agreement
'I believe the ministers to arrived at an agreement.'
[*=35% ?=19%✓=46%, n=37]

The vast majority of speakers either accept both (51) and (52) or reject them both (78%). This suggests that wherever *pensar* selects for an inflected infinitival complement, the subject of the latter remains postverbal and referential and any apparent instances of control involve accidental co-reference.

5.3 The advantages of this analysis

One major advantage of the current proposal is that it accounts for the fact that both kinds of control satisfy the same OC diagnostics discussed by Hornstein (1999) and Landau (2000) (see Sheehan, to appear for a more nuanced discussion).

(i) Obligatory co-reference required in OC

53) *O João$_i$ preferia reunir(em)-se sem ele$_i$
the João preferred.3SG meet.INF.3PL=SE.3 without him
Lit. 'João$_i$ preferred/would prefer to meet without him$_i$.'

(ii) Long-distance control of PRO is impossible in OC

54) *O Pedro acha que eu preferia reunir(em)-se mais cedo.
the Pedro believe.3SG that I preferred meet.INF.3PL=SE.3 more early
Lit. 'Pedro believes that I would prefer for them to meet earlier on.'

(iii) c-command required in OC

55) [O chefe da Maria$_j$]$_i$ prefere reunir(em)-se sem ela$_j$/*ele$_i$
the boss of.the Maria prefers meet.INF.3PL=SE.3 without her/him
'Maria's boss prefers to meet without her.'

(iv) Strict reading of PRO is impossible in OC

56) %O João preferia reunir(em)-se de manhã, e a Maria também

the João preferred.3SG meet.INF.3PL=SE.3 of morning and the Maria also
preferia (*mas sem ela).
preferred.3SG but without her
'João would prefer to meet in the morning and Maria would too (but without her).'

The fact that both kinds of OC share these properties follows if these are properties of Agree. Only a c-commanding thematic head in the same phase can probe a DP, according to standard versions of Agree. Control can arise either where a single DP receives two distinct theta-roles or where obligatory co-reference is forced by Agree.

The proposal also makes the apparent prediction that cased control will not be possible where the controller lacks a referential index. Somewhat surprisingly, there is some support for this claim. In EP, many speakers get a clear contrast between inflected and non-inflected forms in all partial control contexts where the controller is a negative QP:[36]

57) a. ?O chefe não persuadiu nenhum empregado a reunir(*em)-se.
the boss not persuaded no employee a meet.INF.3PL=SE.3
antes das nove
before of.the nine
'The boss didn't persuade anyone to meet before 9am.'

b. ?Ninguém prometeu ao chefe reunir(*/??em)-se antes das nove.
nobody promised to.the boss meet.INF.3PL before of.the nine
'Nobody persuaded the boss to meet before 9am.'

[36] Even with an uninflected infinitive the examples sound slightly strange but improve if the reciprocal marker is omitted in the embedded clause. Omission of SE does not improve the inflected examples, however.

c. ?Ninguém prefere reunir(*em)-se antes das nove.
Nobody prefers meet.INF.3PL before of.the nine
'Nobody prefers to meet before 9am.'

This effect follows under the proposed analysis in the following way. Assume that QPs lack a referential index. If [D:]^{EPP} agrees with a QP then it receives the value [D: Q]^{EPP} and the QP can raise to assume a second theta-role. If, however, [D: i]^{EPP} has agreed with *pro*$_i$, and then a QP is externally merged in its specifier position, there is no way for the referential indices of QP and *pro*$_i$ to be non-distinct, as Q is non-referential, and so the derivation is ill-formed at the CI interface. This also offers the beginnings of an explanation as to why quantificational subjects, unlike referential subjects, *can* surface in the preverbal position in inflected infinitival complement clauses (see Ambar 1988). Note that the negative quantifier triggers the 3sg form of the inflected infinitive which is not morphologically expressed. However, as only inflected infinitives in EP permit overt subjects, we know that the infinitive is indeed inflected in (58). Moreover, an equivalent example is offered by an anonymous reviewer with *só eles* 'only they' which occurs in the same preverbal position but triggers plural agreement on the verb:

58) Penso [ninguém ter aprovado a proposta].
think.1SG nobody have.inf approved the proposal

The fact that these kinds of subjects can surface in what is presumably spec CP seems problematic as they do not and cannot get obligatorily controlled. According to the proposal outlined here, the matrix v should probe and agree with the QP *ninguém*, leading to a valued [D: Q]^{EPP} feature. As it occupies a phase edge position, *ninguém* would not be able to move

to satisfy v's EPP feature leading to a distinct DP being merged in spec vP (in this case a 1sg *pro*). This should then lead to a crash in the derivation as there is no way to reconcile a [D: Q] referential index on v with the referential index of its externally merged specifier (in this case with a first person singular interpretation). But such examples are fully grammatical, as an anonymous reviewer notes, contrary to expectations. Note that it is a more general problem for the current proposal that QPs, notably wh-phrases, which occupy the specifier position of an embedded phase do not get thematically probed, that wh-phrases in the edge of an embedded clause are not obligatorily co-referent with an argument in a higher clause, and indeed cannot be. The explanation must be, I think that a [D: Q] referential index can simply be ignored for the purposes of non-distinctness as it is not really a referential index but the absence thereof.

Preliminary data suggest that a similar effect holds in Icelandic: QPs cannot participate in partial control:

59) a. *Hann bað ekki neinn fulltrúa að hittast einir/eina
he asked not no delegate to meet alone.NOM.MPL/ACC.MPL

b. *Hann bað hvern fulltrúa að hittast einir/eina.
he asked every delegate to meet alone.NOM.MPL/ACC.MPL

This effect remains mysterious under analyses which take partial control to involve straightforward variable binding, but is explained if partial control is obligatory (partial) co-reference, established via Agree.[37]

The proposal also allows for the fact that the features of *pro* can differ from the controller in both number and, for some speakers, person (at least in EP).[38]

60) a. %O João$_i$ preferia reunirmo-nos mais tarde (*sem ele$_i$).[39]
the João preferred.3SG meet.INF.1PL=SE.1PL without him more late
'João$_i$ would prefer PRO$_{i+speaker}$ to meet later.'

b. %Os meus colegas$_i$ preferiam reunirmo-nos mais tarde (*sem eles$_i$).
the my colleagues preferred meet.INF.1PL=SE.1PL more late without them
'My colleagues would prefer to meet later.'

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[37] An anonymous reviewer proposes that this effect might alternatively be taken as evidence that what is involved with EP inflected infinitives is straightforward co-reference, rather than OC. Note, however, that parallel examples with a finite complement and a plural referential subject are fully grammatical:

(i) Ninguém disse que *pro* se podiam reunir mais tarde.
Nobody said.3sg that SE could.3PL meet more late
'Nobody that that they could meet later on.'

If the subjects of inflected infinitives were simply regular referential pronouns then, parallel to (i), all the examples in (57) would be grammatical on a non-coreferential reading. Taking them to be obligatorily controlled referential pronouns captures the fact that the inflected examples in (57) are actually ungrammatical.

[38] Note that such examples, as well as Icelandic partial control examples are problematic for Landau's (2000, 2004) claim that PRO is syntactically singular (but see also Landau's 2016 reply) as well as for Sigurdsson's (2008) claim that PRO is a phi-variable.

[39] These examples are based on consultation with three native informants, all of whom permit cased control.

c. %Preferias reunirmo-nos mais tarde (*sem ti)?
preferred.2SG meet.INF.1PL=SE.1PL more late without you
'Would you$_i$ prefer PRO$_{i+speaker}$ to meet later on.'

d. %Vocês preferiam reunirmo-nos mais tarde (*sem vocês)?
You.PL preferred meet.INF.1PL=SE.1PL more late without you.pl

e. *Eu preferia reunirem-se mais cedo.
I preferred.1SG meet.INF.3PL=SE.3 more early

This follows if [D:]^{EPP} probes for a referential index and nothing else (cf. Landau 2016). In Russian and Icelandic, secondary predicates do not inflect for person, so this cannot be tested except in semantic terms. As illustrated above, Icelandic has number mismatches in instances of partial control.

There is also independent evidence that *pro* moves to spec CP from interactions with other kinds of A-bar movement in EP and Icelandic. Consider first wh-complements in which inflection is generally blocked (see also Raposo 1987):

61) *O Pedro não sabe quando se reunirem.
the Pedro not knows when SE.3= meet.INF.3PL

Next consider successive cyclic movement, which is incompatible with inflection for many speakers:

62) a. %O Pedro prefere reunirem-se na sala
the Pedro prefer.3SG meet.INF.3PL=SE.3 in.the room

‘Pedro prefers to meet in the room.’

b. *Onde$_i$ é que o Pedro prefere [$_{CP}$ t$_{wh}$ reuinirem-se t$_i$].
where is that the Pedro prefers meet.INF.3PL=SE.3

Icelandic lacks wh-complements but there is suggestive evidence that successive cyclic movement interacts with cased control. Whereas NOM is usually more widely accepted and than ACC in object control contexts, where a wh-word has been extracted from the embedded clause, ACC becomes better.[40]

63) Hvenær biður hann Ólaf um að fara ??einn/einan þangað? [Icelandic]
when asks he Olaf to go alone.NOM/ACC there
‘When is he asking Olaf to go there alone?’

When faced with a case independence form (where the secondary predicate is nominative), speakers permit only a matrix reading of the adverbial:

64) *Hvenær$_i$ bað hann Ólaf að hittast t$_i$ einir. [Icelandic]
when asked he Olaf to meet alone.NOM.M.PL[41]

[40] We get the same effect with DAT, for speakers who accept DAT transmission:

(i) Hvenær leyfir hann henni að fara *ein/einni þangað.
when allows he her to go alone.NOM/DAT there

(ii) Hvenær skipar hann henni að fara *ein/einni þangað.
when orders he her to go alone.NOM/DAT there

[41] What informants say: “I just get the 'time of asking' reading, can't make it work with the time of meeting.” “I actually can only see the ‘time of asking’ reading here!”

But this effect does not hold in Russian. In Russian, wh-complements actually necessitate cased control.

65) a. On zabyl pogovorit' sam/*samomu s načal'nikom.
he.NOM forgot to.talk himself.NOM/*DAT with boss
'He forgot to talk himself to the boss.'

b. On zabyl [kak govorit' samomu/*sam s načal'nikom].
he.NOM forgot how to.talk himself.DAT/*NOM with boss
'He forgot how to talk himself to the boss.' [Russian, Landau (2008: 893)]

This is possibly an effect of the fact that Russian has multiple wh-movement, though.

66) Kto kogo videl? [Russian, Stepanov (1997: 5)]
who whom saw
'Who saw whom?'

For this reason, movement of a wh-phrase to spec CP does not prevent movement of *pro* to spec CP, as multiple specifiers are permitted.

67) [CP *pro* [CP how C …

But why is caseless control blocked in wh-complements in Russian but not in EP? Bailyn (2012:101) notes that Russian displays strong sensitivity to wh-islands meaning that extraction might plausibly be blocked here but not in EP. It is possible, however, that

movement of a wh-phrase to spec CP makes subject movement optional and that this is why non-finite wh-clauses unusually license overt dative subjects (Livitz 2011: 97):

68) Ya ne znaju čto mne emu podarit'.
I not know what I.DAT him.DAT give.INF
'I don't know what to give him.'

In Icelandic, Sigurðsson (2008) shows that OC complement clauses are subject to a general left edge silence requirement (prohibiting amongst other things stylistic fronting), which follows if *pro* occupies the phase edge. It remains to be seen if there are any contrasts between case concord and case control in this respect, however.

5.4 The nullness of pro

The analysis proposed above serves to explain why the subject in OC contexts must be controlled and cannot be referential, but so far we have not said anything about why it must be null. EP is a null subject language and Russian is a partial null subject language so in these languages we would expect a *pro* co-referential with a higher argument to be null. Icelandic, however, is a semi null subject language, which generally disallows null referential subjects, so the nullness of *pro* here is somewhat surprising. Interestingly, though both Holmberg (2010) and Wurmbrand (to appear) note that Icelandic does have some properties which make it more similar to partial null subject languages than semi null subject languages. For example, unlike semi null subject languages like German but like partial null subject languages like Finnish and Brazilian Portuguese, Icelandic permits null generic pronouns:

69) Nú má Ø fara að dansa. [Icelandic]

now may Ø go to dance

'One may begin to dance now.' (Holmberg 2010: 106, (27a))

Building on the analysis of partial null subject languages in Holmberg, Nayudu & Sheehan (2009), Holmberg and Sheehan (2010), it possible that in Russian and Icelandic, at least, *pro* starts out overt and gets deleted at PF. In the spirit of Roberts (2010), this might be the result of deletion as a defective goal under identity with [D: i]:

70) [$_{\text{ApplP}}$ DP Appl$_{[\text{D: i}]}$ V [$_{\text{CP}}$ ~~*ele*$_i$~~ C …]]

Although [D:] is not valued for phi-features, these are, in a sense, superseded by the pronoun's index itself. Following Roberts's (2010) proposal, the two instances of D with the same index are interpreted as a chain at PF and the lower link is deleted (see also Livitz 2011 for a similar proposal). There is some evidence that in both kinds of OC, the controlled subject can be spelled out if focused, at least in EP (Szabolcsi 2009, Barbosa 2009). This makes PRO look more like *pro*, but also raises some apparent challenges for the analysis of caseless control put forth above. Space restrictions prevent me from being able to discuss these issues more extensively here (see again Livitz 2011 for relevant discussion).

6 Conclusions

The above discussion has shown that Icelandic, Russian and European Portuguese all have at least two kinds of OC which we have descriptively labelled caseless control and cased control. Despite a great deal of overlap of the two kinds of control there is one context where only caseless control is permitted in all three languages (local exhaustive subject

control), as well as contexts where only cased control is possible (all kinds of true partial control). This suggests that rather than resulting from optional inflection/case transmission, cased control is actually derived differently from caseless control. The analysis sketched above proposes that, in instances of caseless control, OC is derived via movement, roughly as proposed by Hornstein (1999). In instances of cased control, however, OC is derived via Agree with *pro.* It is the fact that *pro* is agreed with but fails to move which results in ambiguous partial/exhaustive control. While many issues and details remain to be considered, some things seem to emerge clearly from the above comparison (i) there are two different syntactic types of control, only one of which permits partial readings (once we control for covert comitatives); (ii) cased control, like subjunctive complements is subject to obviation effects; (iii) in the context of the Russian and Icelandic facts, the behaviour of EP inflected infinitives seems much less exotic and entirely parallel as predicted if case and agreement are (at least sometimes) two sides of the same coin.

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