

# On Obligatory Control: A Movement and PRO Approach

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## Abstract

Most approaches to obligatory control phenomena analyse it as a variant of raising or as a variant of non-obligatory control. This article argues for a third option, that obligatory control is where the distribution of movement and PRO overlaps. In support of this, a variety of effects are shown to consistently uncover two types of obligatory control complements. The first has properties strongly reminiscent of movement: the relevant positions are non-distinct and can share a single case. The second class instead resembles non-obligatory control: the lower position bears an independent case and can denote a superset of the higher position. That these are indeed structurally different is evidenced by the fact that manipulating the embedded context allows these types of obligatory control to be differentiated reliably. For instance, when a superset reading of the lower position is induced, the properties associated with movement are filtered out (Landau 2008). Inherent case on the lower position is another diagnostic of this type, because movement from an inherent case position to a  $\theta$ -position is shown to be severely constrained. Obligatory control into finite clauses, finally, can be used to distinguish movement from PRO, because PRO is incompatible with subject-verb agreement.

keywords: obligatory control, case concord, PRO, partial control, backward control, MTC

## Introduction

The study of obligatory control (OC) phenomena has usually been connected to the analysis of two phenomena found in infinitival clauses, raising and non-obligatory control (NOC). Indeed, OC shares properties with both raising and NOC. Raising and obligatory control both involve a local relationship between two argument positions in different clauses. The two differ primarily in that the higher A-position is non-thematic in raising (1a-b) and thematic in OC (1c-d).

- (1) **Idiom chunks preserved in raising, but not in OC:**
- a. Calvin seemed to be making headway on the headless snowman.
  - b. Headway seemed to be made on the headless snowman.
  - c. Hobbes promised to make headway on the tuna sandwich.
  - d. \*Headway promised to be made on the tuna sandwich.

OC is similar in this sense to NOC, in which the higher argument position must similarly be thematic. The two differ, however, in that this antecedent needs to be in a local c-

command relationship with the lower position in OC (2a-b), but not in NOC (2c-d).

(2) **No c-commanding antecedent in NOC:**

- a. \*Calvin<sub>i</sub>'s mom wanted *ec<sub>i</sub>* to go outside.
- b. \*Calvin<sub>i</sub> noticed that his teacher tried *ec<sub>i</sub>* to pay attention.
- c. Calvin's dad denied that doing well in the polls is important.
- d. It is a tiger's forte to do homework.

Because of these similarities and because the analyses of raising and NOC are relatively well-established in generative work, OC phenomena have often been analysed on a par with one of these constructions. Most prominently, OC and NOC have been argued to make use of the same null subject, the nominal PRO, while raising complements are taken to involve movement (e.g. Chomsky 1973, 1980, 1981; Chomsky and Lasnik 1977, 1993; Landau 2000). Another strand of theories, however, has emphasised the local nature of both raising and OC. On the basis of this, both raising and OC are argued to involve movement, while NOC involves a null subject (e.g. Bowers 1973, 2008; Wehrli 1980, 1981; O'Neil 1995; Hornstein 1999).<sup>1</sup>

There are significant empirical obstacles to both approaches, however. A problem for the first approach to obligatory control is that there are a number of contexts in which OC phenomena resemble raising more than non-obligatory control. For instance, both in raising and OC, the lower copy of a movement chain can, in some languages, be spelled out instead of the higher copy (e.g. Polinsky and Potsdam 2002, 2006; Potsdam and Polinsky, to appear). Treating all instances OC like raising, however, ignores the contexts in which OC and NOC share properties absent in raising. As in NOC, for example, the lower infinitival subject can denote a superset of the higher argument (e.g. Wilkinson 1971; Williams 1980; Landau 2000).

Instead, I argue here that the category of OC phenomena really collapses two structurally different constructions, movement-derived OC and control of a PRO. A number of OC effects uncover two types of complements. There is variation in case, in the acceptability of superset readings and in the acceptability of inherent case on the lower position, for example. In addition, the way these properties pattern strongly suggests that these have the properties of movement and PRO. I will refer to movement-derived OC as *θ-movement*,<sup>2</sup> while I use the term *PRO-control* to signify the binding of an in situ PRO. The majority of OC verbs are shown to allow both of these, although

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1 There are also a number of approaches in which all three operations are technically distinct, in that they make use of different machinery (e.g. Rosenbaum 1967; Manzini and Roussou 2000).

2 Noam Chomsky (p.c.) points out that a movement analysis of OC does not necessitate the assumption that movement into a  $\theta$ -position is licit. Instead, an account is possible in which the lexical argument receives multiple thematic roles in its base position and raises only to a case position. It is difficult to see what empirical fact would distinguish this theory from one in which movement into a  $\theta$ -position is possible. I adopt a  $\theta$ -movement analysis here, however, involving movement into a thematic position, because this allows a straightforward account of the interaction of inherent case and movement, as discussed in section three.

some only allow movement.<sup>3</sup> Note also that, on independent grounds, there is convincing evidence for the existence of both PRO-control and  $\theta$ -movement. From the availability of partial control readings, and the fact that these are possible in NOC, but not in raising, it follows logically that some instances of OC have a distinct subject in the lower position. Similarly, the existence of backward control in a number of languages necessitates a  $\theta$ -movement analysis.

In this model, as long as an argument is active (i.e. not all of its features are valued), there are no restrictions on the number and type of operations it may enter into. For instance, arguments may accrue multiple thematic roles, if there is no intervening licensing position. As a result, movement is possible from any type of deficient position. I assume also that infinitival verbs project an external argument position, which may be occupied by the null nominal PRO. PRO is taken to be special in that it is somehow licensed in what it is otherwise a deficient position. It follows from this that movement and control of PRO are both available to derive obligatory control.

The empirical basis of this model rests on the observation that there are two types of OC complements that have the properties of  $\theta$ -movement and PRO-control, respectively. An overview of these characteristics that will be argued to belong to  $\theta$ -movement and PRO-control is given in Table 1. Note that these are all properties that are naturally associated with the relevant constructions.<sup>4</sup>

**Table 1:** Properties of  $\theta$ -movement and PRO-control

| <b><math>\theta</math>-movement</b>   | <b>PRO-control</b>  |
|---|---|
| <ul style="list-style-type: none"> <li>- Only one case is necessary.</li> <li>- One argument occupies both argument positions.</li> <li>- One argument carries multiple thematic roles.</li> <li>- The lower copy can be spelled out instead of the highest copy.</li> <li>- OC is possible into any type of deficient position.</li> </ul> | <ul style="list-style-type: none"> <li>- Each position has its own case.</li> <li>- The higher and the lower position are occupied by independent arguments.</li> <li>- The higher and the lower position have independent <math>\theta</math>-roles.</li> <li>- PRO is limited to non-finite positions.</li> </ul> |

As noted, this paper demonstrates that these types of obligatory control can be differentiated consistently. A number of methods achieve this. First, embedding a case-sensitive secondary predicate, participle or floating quantifier allows the two different

<sup>3</sup> This asymmetry actually follows from the assumptions outlined in this paragraph. If movement is possible from any deficient position, it should be available with every OC verb. PRO, however, may impose licensing conditions, because remains in the OC complement. As such, we might expect PRO to be restricted to some OC environments.

<sup>4</sup> Some authors have assumed that PRO can pick up case through transmission (e.g. Þráinsson 1979; San Martín 2004; Landau 2004, 2006, 2008; Sigurðsson 2008). This assumption, however, is motivated only by the attested case patterns (see, for instance, section one). A priori, without any knowledge of the empirical picture, we would expect only the opposite, namely that PRO is like any other argument and acquires case independently. This is the simplest possible model and, therefore, the null hypothesis.

case patterns to be brought to light. Second, inducing a superset reading of the lower position, the effect known as *partial control*, diagnoses the presence of PRO. Third, it is argued that movement from an inherent case position to a  $\theta$ -position is ungrammatical, on the basis of data from Icelandic (e.g. Eythórsson and Barðdal 2005; Sigurðsson 2008; Bobaljik and Landau 2009). As a result, embedding a verb that assigns inherent case to its subject also serves to filter out PRO-control. Finally, on the basis of data from NOC, it is claimed that PRO is incompatible with subject-verb agreement. Finite complement clauses may then serve to isolate the effects of  $\theta$ -movement. This is also shown to shed some light on the availability of backward control. Taken together, this is evidence not only that there are two types of OC, but that these specifically have the properties of movement and PRO.

### 1 On Case-sharing and Case Independence

The pattern of case in OC brings out two types of OC complements. In the first type, which I refer to as *case-sharing*, the higher and the lower position carry the same case, as in raising. A second type is characterised by *case independence*. In these constructions, the lower position has a case that is distinct from that of the higher position, just as in NOC. A priori, these are the properties we would associate with  $\theta$ -movement and PRO-control. In movement, only one nominal is licensed and, as such, only one case is assigned. Conversely, using a PRO means that two nominals are licensed and, as such, that two cases have been assigned. These are the properties of  $\theta$ -movement and PRO-control in the simplest model. Although many authors have assumed that PRO can acquire case from its antecedent (e.g. San Martin 2004; Landau 2004, 2006, 2008; Sigurðsson 2008), such a special mechanism is motivated only by the attested Case patterns. The null hypothesis is that PRO is like any other argument and checks case independently. This is then the simplest possible model and also our a priori expectation.

The pattern of case assignment in OC emerged in early work on case concord in Ancient Greek, Icelandic and Russian (Andrews 1971, 1976; Comrie 1974). Case concord refers to a situation in which a secondary predicate, participle or floating quantifier agrees in case with an argument. In Russian, for instance, the form of the secondary predicate *odin* ‘alone’ varies along with the case of its antecedent (3a-b).

- (3) **Secondary elements agree in case:**
- a. Taras prišel odin.  
Taras.NOM came alone.NOM  
‘Taras came alone.’
  - b. Ja našel ego odnogo.  
I.NOM found him.ACC alone.ACC  
‘I found him alone.’  
(Landau 2008: 882)

By embedding such a predicate in an OC clause, the case of the lower position can

be diagnosed, because it will agree with the secondary element in case. This has been used productively to examine the behavior of case in OC.

The first type of complement that this work uncovered is one in which one case is shared between the lower position and the higher position, (e.g. Andrews 1971, 1976; Comrie 1974). A priori, this is what is expected under a  $\theta$ -movement analysis, because both positions are occupied by the same element. Case-sharing is widely attested and has since been observed also in a number of other languages, such as Lithuanian (Timberlake 1988), Polish (Franks 1995; Przepiórkowski and Rosen 2004), Czech (Franks 1995; Przepiórkowski and Rosen 2004), Slovene (Franks 1995), Latin (Cecchetto and Oniga 2004) and Italian (Cecchetto and Oniga 2004). Some examples are given in (4a-g), with the higher argument and the relevant secondary predicate, participle or floating quantifier indicated in bold.

(4) **Case-sharing is possible in OC:**

- a. Ona proposila ego ne ezdit' tuda odnogo.  
she.NOM ask.PAST **he.ACC** not go.INF there **alone.ACC**  
'She asked him not to go there alone.'  
(Russian; Landau 2008: 886)
- b. Marie naučila Honzu chodit domů střízlivého.  
Marie.NOM teach.PAST **Honza.ACC** go.INF home **sober.ACC**  
'Marie taught Honza to come home sober.'  
(Czech; Przepiórkowski and Rosen 2004: 38)
- c. General je poslal stotnika delat bolnega.  
general AUX.3SG send.PAST **captain.ACC** work.INF **sick.ACC**  
'The general sent the captain to work sick.'  
(Slovene)
- d. Ólafi fannst gaman að vera fyrstum.  
**Olaf.DAT** found fun to be.INF **first.DAT**  
'Olaf found it fun to be number one.'  
(Icelandic; Sigurðsson 2008: 415)
- e. ku:rou edeonto ho:s prothumotatou genesthai.  
**Cyrus.GEN** beg.PAST.3PL AS **most.devoted.GEN** be.INF  
'They begged Cyrus to be as devoted to them as possible.'  
(Ancient Greek; Andrews 1971: 130)
- f. Zakistrijonas man liepė būti stropesniam.  
deacon.NOM **me.DAT** tell.PAST be **more.diligent.DAT**  
'The deacon ordered me to be more diligent.'  
(Lithuanian; Timberlake 1988: 191)
- g. Pięć kobiet bało się być niespokojnych.  
five.ACC **girls.GEN** feared be.INF **uneasy.GEN**  
'Five girls were afraid to be uneasy.'  
(Polish; Przepiórkowski and Rosen 2004: 36)

In all of these examples, the case on the agreeing element in the lower clause appears to originate in the higher clause. In (4a-c), it is structural nominative or accusative that appears to be transmitted downward. In (4d-g), the same happens with a quirky case. We can conclude then that the higher position can, at least in some instances, determine the case of the lower position. This is straightforwardly explained if these are instances of  $\theta$ -movement. Under this analysis, the OC argument is merged in the lower clause and then raises into the finite clause to check case.<sup>5</sup>

That movement indeed creates this pattern can be confirmed by looking at raising (see Hudson 1998, 2003, Przepiórkowski 2004 and Przepiórkowski and Rosen 2004 also for this argument). As the examples in (5a-e) illustrate, raising always produces case-sharing in these languages.

(5) **Raising produces case-sharing:**

- a. Ég tel strákana hafa verið kitlaða.  
I.NOM believe **boys.ACC** have.INF been **tickled.ACC**  
'I believe the boys to have been tickled.'  
(Icelandic; Bobaljik and Landau 2009: 115)
- b. ape:ngelthe: Philippos hu:mi:n He:raion teikhos poliorko:s.  
was.reported **Philip.NOM** by.you Herian wall **besieging.NOM**  
'Philip was reported by you to be besieging the Herian wall.'  
(Ancient Greek; Andrews 1971: 135)
- c. Pięć kobiet wydawało się być niespokojnych.  
five.ACC **girls.GEN** seemed be.INF **uneasy.GEN**  
'Five girls seemed to be uneasy.'  
(Polish; Przepiórkowski and Rosen 2004: 36)
- d. Pět poslanců se zdálo být nespokojených.  
five.NOM **MPs.GEN** seem.PAST be.INF **dissatisfied.GEN**  
'Five MPs seemed to be dissatisfied.'  
(Czech; Przepiórkowski and Rosen 2004: 37)
- e. Jai reikai būti pasiruošusiai.  
**her.DAT** must be **prepared.DAT**  
'It is necessary for her to be prepared.'  
(Lithuanian; Timberlake 1988: 190)

In (5a-e), case on the lower position is again determined by the higher position, regardless of whether the higher argument bears structural or lexical case. In the simplest model, case-sharing OC complements are then derived by  $\theta$ -movement. In this way, the observed similarity is straightforwardly explained.

<sup>5</sup> There a number of theories that can be employed to explain how case ends up on the secondary predicate (e.g. Frampton and Gutmann 2000; Matushansky 2008). The point of this section is that adopting a dual-route account of OC means that whatever account of case concord that suffices for monoclausal environments will suffice for OC. No special assumptions are necessary, such as PRO's special status for case concord in a PRO-only theory, unlike in single-route theories.

There is a consistent class of exceptions to the case-sharing pattern, however. In these OC constructions, the lower position is associated with an independent case, distinct from that of the higher position. This case independence pattern has also been a consistent finding (6a-f) (e.g. Andrews 1971, 1976; Comrie 1974; Þráinsson 1979; Timberlake 1988; Franks 1995; Przepiórkowski 2004; Przepiórkowski and Rosen 2004). Recall that in the simplest possible model, this is the pattern that PRO creates.

(6) **Case independence is possible in OC:**

- a. Bræðurnir æsktu þess að vera báðum boðið.  
**brothers.NOM** wish.PAST it to be.INF **both.DAT** invited  
 ‘The brother wished to both be invited.’  
 (Icelandic; Sigurðsson 2008: 410)
- b. Bræðrunum líkaði illa að vera ekki báðir kosnir.  
**brothers.DAT** like.PAST ill to be.INF not **both.NOM** elected  
 ‘The brother disliked not being both elected.’  
 (Icelandic; Sigurðsson 2008: 410)
- c. Ona proposila ego ne ezdit' tuda odnomu.  
 she.NOM ask.PAST **he.ACC** not go.INF there **alone.DAT**  
 ‘She asked him not to go there alone.’  
 (Russian; Landau 2008: 886)
- d. Sumpherei autois philous einai.  
 advantageous **them.DAT** **friends.ACC** be.INF  
 ‘It is advantageous to them to be friends.’  
 (Ancient Greek; Andrews 1971: 148)
- e. General je ukazal stotniku iti na zabavo pijan  
 general AUX.3SG order.PAST **captain.DAT** go.INF to party **drunk.NOM**  
 ‘The general ordered the captain to go the party drunk.’  
 (Slovene)
- f. Marie nařídila Honzovi přijit střízlivý.  
 Marie.NOM order.PAST **Honza.DAT** come.INF **sober.NOM**  
 ‘Marie ordered Honza to come sober.’  
 (Czech; Przepiórkowski and Rosen 2004: 38)

Case independence manifests itself in two ways. In (6a), case on the lower position is lexical. In (6b-f), case on the lower position appears to be structural. In both cases, what is important is that the relevant case is distinct from that of the higher position. This type of OC complement is then different in an important sense from the one in (4a-g), in which the two positions share a case. This pattern is that of finite clauses, in which every argument position is associated with an independent case and what appears to be a structural case alternates with lexical cases. This difference is accounted for in a straightforward manner if case independence configurations are instances of PRO-control.

That the apparently structural case in these clauses is not the result of a failure of

case assignment is evidenced by a number of facts. In Russian, the secondary predicate *odin* ‘alone’ is found only in an agreeing form and in a dative form in OC. This dative does not have the distribution of instrumental case, which can in non-agreeing configurations. As such, the most straightforward explanation of these facts is that the lower position carries dative case. For Icelandic, Sigurðsson (2008) and Bobaljik and Landau (2009) have argued extensively that the nominative is not a default. It is widely available – in fact, preferred in many contexts – and otherwise agrees fully in phi-features. In addition, the nominative is never possible when the antecedent occupies an inherent case position. Finally, in all of these languages, raising *only* produces case-sharing. If any of these independent cases are simply default options that arise because of a lack of case in infinitival subject positions, they should show up also in at least some raising complements. I conclude then that the case on the secondary predicate or floating quantifier in (6a-f) is indeed the case of the lower subject.

In support of this, we find that the same pattern appears in non-obligatory control. This confirms that case independence is what a PRO analysis should lead us to expect. Some examples from Russian, Icelandic, Czech, and Slovene are given below (7a-d). Note that we again find dative in Russian and nominative in Icelandic, Czech and Slovene.

(7) **NOC produces case independence:**

- a. Ivan      *dumaet čto pojti domoj odnomu važno.*  
Ivan.NOM thinks    that go.INF home **alone**.DAT important  
‘Ivan thinks that it is important to go home alone.’  
(Russian; Landau 2008: 885)
- b. Að vera ríkur      er ágætt.  
for be.INF **rich**.NOM be.3SG nice  
‘To be rich is nice.’  
(Icelandic; Sigurðsson 2008: 416)
- c. Být opilý      znamená být hloupý.  
be.INF **drunk**.NOM means    be.INF **stupid**.NOM  
‘To be drunk means to be stupid.’  
(Czech; Przepiórkowski and Rosen 2004: 38)
- d. Iti    na delo pijan      je    neprofesionalno.  
go.INF to work **drunk**.NOM AUX.3SG unprofessional  
‘To go to work drunk is unprofessional.’  
(Slovene)

Some instances of obligatory control then pattern with non-obligatory control, in that both are characterised by case independence. I conclude that these constructions are derived in the same way. If case independence constructions in OC involve a PRO, the similarity with non-obligatory control is derived.

In this way, diagnosing the case of the lower position brings out two different types of OC, one in which case is shared between the two positions and one in which it is

not. The first of these is identical to raising, while the second behaves exactly like non-obligatory control. The simplest account of these facts is then one in which  $\theta$ -movement underlies case-sharing and PRO-control underlies case independence.<sup>6</sup> Variation in case in OC is then straightforwardly explained, allowing a significant amount of empirical complexity to be derived. In addition, case can then help us distinguish between  $\theta$ -movement and PRO-control complements.

This approach avoids some of the conceptual problems that single-route accounts of OC run into. In a movement-only analysis, for instance, some special mechanisms are necessary to account for the asymmetry between OC and raising. Specifically, the fact that case independence is possible in obligatory control is problematic, because it is not attested in raising in the same languages. As such, some account of this disparity is necessary. Boeckx, Hornstein and Nunes (2010), for instance, postulate two morphological mechanisms to deal with Icelandic case data, one in which case can be copied onto an unvalued secondary predicate and one which assigns nominative case as a default. These then interact with locality differences between OC and raising (Boeckx, Hornstein and Nunes 2010: 125, fn. 9).

A PRO-only analysis similarly requires a number of special assumptions, because of the prevalence of case-sharing configurations. The existence of these force a departure from the simplest possible model and require the assumption that PRO can check case against its antecedent. A mechanism of transmission is then necessary which not only allows PRO to acquire case through multiple routes, but also explains why there are no apparent restrictions on case transmission. Lexical or inherent cases, for example, are shared with the lower position in the same way that structural cases are (8a-c).

(8) **Quirky cases undergo case-sharing:**

- a. Ji patarè jam būti pasiruošusiam.  
she.NOM advise **he.DAT** be **prepared.DAT**  
'She advised him to be prepared.'  
(Lithuanian; Timberlake 1988: 191)
- b. Ólafí fannst gaman að vera fyrstum.  
**Olaf.DAT** found fun to be.INF **first.DAT**  
'Olaf found it fun to be number one.'  
(Icelandic; Sigurðsson 2008: 415)
- c. ku:rou edeonto ho:s prothumotatou genesthai.  
**Cyrus.GEN** beg.PAST.3PL as **most.devoted.GEN** be.INF  
'They begged Cyrus to be as devoted to them as possible.'  
(Ancient Greek; Andrews 1971: 130)

If case transmission is structurally conditioned, then we might have expected to find such

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<sup>6</sup> In recent work on OC phenomena in HPSG, Hudson (1998, 2003) and Przepiórkowski (2004; Przepiórkowski and Rosen 2004) have independently argued for a similar analysis, although, in this theory, subject control is exclusively derived through structure-sharing, the HPSG counterpart of movement. This cannot be correct, considering (6a,c), but the proposal is in the same spirit.

restrictions. Quirky case is, after all, tied to specific  $\theta$ -roles or positions. PRO does not fulfil either requirement (*cf.* Martin 1996). Some specific assumptions are then necessary to make a transmission mechanism pick out the right configurations. Attempts at this type of account can be found in Landau (2007, 2008) and Matushansky (2008).<sup>7</sup>

A dual-route model that allows both  $\theta$ -movement and PRO-control account has a significant conceptual advantage over single-route theories. The case data demonstrate that there are two types of OC complements, one that patterns with raising and one that resembles non-obligatory control. This empirical complexity is straightforwardly derived in such a model. In this way, secondary predicates that are sensitive to case allow the properties associated with  $\theta$ -movement and PRO-control to be differentiated. In the rest of this paper, three other ways in which these two constructions can be separated from each other will be discussed. These properties will be shown to correlate predictably with the case differences noted here.

## 2 On Partial and Exhaustive Control

In this section, inducing a superset reading of the lower position is shown to differentiate two types of obligatory control. Some OC complements allow a superset, or *partial control*, reading of the lower position (Wilkinson 1971; Williams 1980; Landau 2000). Because, in PRO-control, the higher and the lower position are occupied by distinct nominals, referential differences are not unexpected. In  $\theta$ -movement, however, one element occupies multiple positions and such an effect should not be possible. In support of this, it is observed that partial control is possible also in NOC, but not in raising. Not only is this evidence for the existence of PRO-control, whether an OC complement allows partial control is shown to correlate with whether it allows case independence. In this way, there is direct evidence for the idea that OC complements with case-sharing

<sup>7</sup> What might be especially problematic for such a transmission account is the fact that DP-internal cases also participate in case-sharing. In Polish and Czech, for instance, the genitive case that numerals assign to nouns may show up on the secondary predicate (ia-b).

(I) **DP-internal cases may undergo case-sharing:**

- a. Pět poslanců se bálo být upřímných.  
five.NOM MPs.GEN feared be frank.GEN  
 ‘Five MPs were afraid to be frank.’  
 (Czech; Przepiórkowski and Rosen 2004: 37)
- b. Pięć kobiet bało się być niespokojnych.  
five.ACC girls.GEN feared be uneasy.GEN  
 ‘Five girls were afraid to be uneasy.’  
 (Polish; Przepiórkowski and Rosen 2004: 37)

In these examples, genitive case is shared between the two positions, triggering agreement on the secondary predicate just as in a monoclausal environment. If there is a mechanism of case transmission at work, it can then not exclusively be operating by means of structural case assigners external to the higher argument, because these simply do not carry genitive case in these examples. In the Czech example, we can even see this directly, because the numeral shows that structural case is active. Even a case percolation mechanism, along the lines of Matushansky (2008), has problems dealing with this pattern, because the lower clause is not contained in the phrase to which the numeral assigns case. As such, some non-trivial machinery is necessary to derive the right patterns.

have the properties of  $\theta$ -movement and OC complements with case independence have the properties of PRO-control.

Wilkinson (1971) first noted that a superset reading of the lower position is possible with some OC verbs (see also Williams 1980; Landau 2000). In the examples below, for instance, the subject of the lower clause refers to both Calvin and Hobbes, even though the higher argument only picks out one of these (9a-c).

- (9) **Lower position can denote a superset in OC:**
- a. Calvin denied throwing snowballs at Susie together.
  - b. Hobbes promised to read comics together.
  - c. Calvin expected to trek to the Yukon together.

In (9a), for instance, the understood subject of *to throw snowballs at Susie together* is Calvin and Hobbes. Nevertheless, the higher argument only refers to Calvin. The interpretation of the lower position is clearly constrained by the identity of the higher argument, but only insofar that the former should at least include the latter. Landau (2000), dubbing these instances of *partial control*, points out that these are actually instances of obligatory control.<sup>8</sup> That is, they behave like OC in all the relevant tests.

This interpretive asymmetry suggests that the elements occupying these positions are formally distinct at some level. I conclude from this that these constructions are established by PRO-control, because  $\theta$ -movement should only give rise to indistinctness. Indeed, superset readings are also possible in non-obligatory control (10a-b).

- (10) **Lower position can denote a superset in NOC:**
- a. Hobbes felt that throwing snowballs at Susie together was gratifying.
  - b. Calvin thought that trekking to the Yukon together was a great idea.

That partial control is not a property of movement is illustrated by raising and monoclausal sentences, in which partial control is ungrammatical (11a-d).

- (11) **Lower position cannot denote a superset in raising:**
- a. \*Calvin seemed to trek to the Yukon together.
  - b. \*Spaceman Spiff appeared to land on an alien planet together.
  - c. \*Hobbes read comics together.
  - d. \*Susie played house together.

Note, however, that some OC verbs do behave like raising verbs, as observed by Landau (2000). In these cases, the lower position cannot denote a superset of the higher position (12a-c).<sup>9</sup>

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<sup>8</sup> Wilkinson (1971) is the first to make this observation, noting that partial control readings can be differentiated from arbitrary readings of PRO. Williams (1980), however, classifies partial control as non-obligatory control.

(12) **Lower position cannot denote a superset in some OC cases:**

- a. \*Calvin dared to throw water balloons together.
- b. \*Hobbes managed to read comics together.
- c. \*Calvin continued to trek to the Yukon together.

Landau (2000) refers to these cases as *exhaustive control*, because the higher argument appears to exhaustively determine the reference of the lower argument. This can be explained if these OC constructions are instances of  $\theta$ -movement. The verb classes that do not permit partial control are then special only in that they only allow  $\theta$ -movement (see fn. 3). Similar contrasts have been documented in other languages, including German (Landau 2000; Wurmbrand 2002), Italian (Landau 2000; Cinque 2006), Brazilian Portuguese (Rodrigues 2007) and Russian (Landau 2008). Minimal pairs from some of these languages, and also from Slovene and Dutch, are given below (13-16).

(13) **Exhaustive and partial control contrasts:**

- a. Hans erwog sich gemeinsam zu bewerben.  
Hans contemplate.PAST SE together to apply.INF  
'Hans contemplated applying together.'
  - b. \*Der Beamte hat ihm empfohlen sich gemeinsam zu bewerben.  
The clerk has him recommend SE together to apply.INF  
'The clerk recommended applying together to him.'
- (German; Wurmbrand 2002: 5-6)

- (14) a. Predsedatel' predpočel sobrat'sja vsem v šest'.  
chair.NOM prefer.PAST gather.INF all.DAT at six  
'The chair preferred to all gather at six.'
- b. \*Predsedatel' predpočel sobrat'sja vse v šest'.  
chair.NOM prefer.PAST gather.INF all.NOM at six

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9 Bowers (2008) argues that the contrast between (9a-c) and (12a-c) is not a reliable one. He uses examples like (iia-b).

(ii) **Apparent cases of partial control with exhaustive control verbs:**

- a. The union organiser didn't dare to gather during the strike.
- b. The chair managed to meet at six. (Bowers 2008: 139)

Although it is true that these sentences are not sharply ungrammatical for some (though many speakers do appear to reject both (iia-b) and (iia-b)), Bowers's examples exclusively use collective verbs like *gather* and *meet*. As Bowers notes, these do not always reliably enforce semantic plurality, because the same type of variation is found in (iia-b).

(iii) **Apparent cases of partial control in monoclausal sentences:**

- a. Supported by the rank and file, the organiser gathered every single day during the strike.
- b. It's weird – this minister gathers on Monday instead of Sunday! (Bowers 2008: 140)

As such, I only use partial control readings created by *together* here, because these appear to more reliably enforce the relevant distinction. Finally, Landau's (2008) survey of native speakers of Russian illustrates that partial control contrasts can be reliable across OC constructions. Bowers's examples are then mostly testament to interspeaker variability in obtaining partial control readings, particularly in the absence of secondary triggers, such as case in Russian.

- ‘The chair preferred to all gather at six.’  
(Russian; Landau 2008: 908)
- (15) a. Calvin je želel družno metati kepe.  
Calvin.NOM AUX wanted in.company throw.INF snowballs  
‘Calvin wanted to throw snowballs together.’  
b. \*Calvin je uspel družno metati kepe.  
Calvin.NOM AUX managed in.company throw.INF snowballs  
‘(lit.) Calvin managed to throw snowballs together.’
- (16) a. Calvin beloofde samen sneeuwballen te gooien.  
Calvin promise.PAST together snowballs to throw.INF  
‘Calvin promised to throw snowballs together.’  
b. \*Het lukte Calvin om samen sneeuwballen te gooien.  
It succeeded Calvin C.INF together snowballs to throw.INF  
‘(lit.) Calvin succeeded in throwing snowballs together.’

In these pairs, the (a) sentences all allow partial control, while it is ungrammatical in the (b) sentences. Partial control is then more evidence that some OC constructions behave like raising, while others pattern with NOC. This is straightforwardly explained if partial control is taken to be a property of PRO.<sup>10</sup> Note also that the existence of partial control constitutes independent evidence for a PRO-control construction.

Under this account, partial control should then serve to isolate PRO effects. If a partial control reading is enforced, properties uniquely associated with movement should disappear. Case independence, as a property of PRO, should be brought out by partial control. Case-sharing, as a property of  $\theta$ -movement, should be ungrammatical in a partial control context, however. Finally, exhaustive control environments should only show case-sharing.

We can put these predictions to the test by looking at partial control in a language like Russian, in which case can be diagnosed using case concord phenomena. Landau (2008) observes that partial control in Russian is only grammatical in case independence configurations. He points out, without a partial control reading, case-sharing is possible - in fact, preferred for many speakers (an issue I will leave unaddressed here). In object control, case-sharing is similarly widely attested (17a-b). Floating quantifiers are used here to diagnose the cases of the lower position. Note that, in order to control for the influence of scrambling, the floating quantifier *vse* ‘all’ is scoped under embedded negation.<sup>11</sup>

<sup>10</sup> Admittedly, explaining why PRO should allow partial control is not necessarily straightforward. It must be considered an LF effect, since Rodrigues’s (2007) discussion of Brazilian Portuguese shows that partial control does not affect the featural content of the lower position. However, we can at least understand why some OC complements pattern with raising and the subjects of monoclausal sentences. One option is to say that, at LF, PRO’s set of referents can be expanded because it does not enter the derivation with a prespecified reference. We could speculate then that PRO is different from other anaphors in that these interact with reflexive predicates (*cf.* Reinhart and Reuland 1993; Reuland 2001), which impose identity restrictions.

<sup>11</sup> My thanks to David Pesetsky (p.c.) for suggesting this.

(17) **Case-sharing is possible in subject and object control:**

- a. My predpočli ne prixodit' vse / ??vsem v šest'.  
we.NOM prefer.PAST not come.INF all.NOM / all.DAT at six  
'We prefer to not all come at six.' not > all
- b. Ona poprosila ix ne prixodit' vsex / vsem v šest'.  
she ask.PAST them.ACC not come.INF all.ACC / all.DAT at six  
'She asked them to not all come at six.' not > all

If both case independence and partial control signal PRO-control, inducing partial control reading should affect these preference. Indeed, when a partial control reading is induced, however, the pattern is reversed and case independence is the only option in both constructions, as observed by Landau (2008) (18a-b).

(18) **In partial control, case-sharing is impossible:**

- a. Ona predpočla ne sobirat'sja \*vse / vsem v šest'.  
she.NOM ask.PAST not gather.INF all.NOM / all.DAT at six  
'She preferred to not all gather at six.' not > all
- b. Ona poprosila predsedatelja ne sobirat'sja \*vsex / vsem v šest'.  
she ask.PAST chair.ACC not gather.INF all.ACC / all.DAT at six  
'She asked the chair to all gather at six.' not > all

Similarly, in object control, optionality disappears under partial control, leaving only the independent case option. Partial control and case independence then indeed correlate, as predicted.

This asymmetry clearly argues in favour of a connection between partial control and case independence. Taking partial control as a property of PRO, we can conclude from this that case-sharing constructions do not have a PRO underlyingly. Rather, the correlations described above argue for a  $\theta$ -movement derivation.

In accordance with this, we should find that OC verbs that do not allow partial control do not allow case independence. As noted, in object control in Russian, both case-sharing and case independence are possible, as (19a) also shows. When an exhaustive control verb that does not allow partial control, such as *zastavit'* 'force,' is used (19b), however, this optionality disappears (19c).

(19) **Case independence not an option for exhaustive control verbs:**

- a. Ja poprosil ix tuda sročno ?vsex / vsem ujexat'.  
I.NOM ask.PAST them.ACC there urgently all.ACC / all.DAT travel.to.INF  
'I asked them to all travel there urgently.'
- b. \*Ja zastavil otca tuda vsex / vsem ujexat'.  
I.NOM force.PAST father.ACC there all.ACC / all.DAT travel.INF  
'(lit.) I forced the father to all travel there.'
- c. Ja zastavil ix tuda vsex / \*vsem ujexat'.

I.NOM force.PAST them.ACC there all.ACC / all.DAT travel.to.INF  
 ‘I forced them to all travel there.’

Taken together, these facts are evidence not only that there are two ways to derive OC, but also that these specifically have the properties of  $\theta$ -movement and PRO-control. This offers a straightforward account of the connection between case independence and partial control, on the one hand, and between case-sharing and exhaustive control, on the other. These are simply natural properties of both configurations.

A PRO-only account of these facts, on the other hand, has to explain why PRO does not allow partial control readings in some contexts. It needs recourse to a special mechanism that is sensitive to the referential properties of PRO. Landau’s (2000, 2006, 2008) theory of partial control, for instance, has to make a number of specific stipulations about the way semantic plurality is encoded, particularly in relation to tense.<sup>12</sup> In addition, a PRO-only analysis needs a special mechanism to account for the connection between partial control and case independence (e.g. Landau 2008), because this correlation does not follow from any a priori property of PRO.

It is even more difficult to see how these data could be explained in a movement-only account of OC phenomena. There are a number of proposals in the literature that attempt to derive partial control in the framework of the Movement Theory of Control (e.g. Barrie and Pittman 2004; Rodrigues 2007; Snarska 2008; Witkos and Snarska 2008), but these suffer from the problem that partial control needs to be limited to certain movement environments. Rodrigues (2007), for instance, proposes a null associative morpheme, which can be stranded in movement. Although this derives partial control readings, it does not explain why these are absent in raising or in monoclausal sentences.<sup>13</sup> In general, a problem with this kind of approach is that there are no independently attested effects in which a trace of movement can be interpreted as a

12 A problem internal to this account is that not all internally tensed complements allow partial control. In Russian, for example, a non-simultaneous reading is possible with case-sharing (iv).

(iv) **Case-sharing complements are tensed, yet do not allow partial control:**  
 Včera ona reshil sobrat'sja vse / ?vsem zavtra v šest'.  
 yesterday she.NOM decided gather.INF all.NOM / all.DAT tomorrow at six  
 ‘Yesterday, she asked them to all gather at six tomorrow.’

As I discussed in section two, case-sharing configurations do not tolerate partial control. As such, it cannot be the case that it is only internal tense that gives rise to partial control, contra Landau’s (2000, 2006, 2008) assumptions.

13 Rodrigues (2007: 222) appeals to the idea that modality may license partial control, following Wurmbrand (2007), pointing to sentences like (va). However, it is not clear that this is a robust effect and not due to the interference discussed in Bowers (2008) (see fn. 9), as (vb) illustrates.

(v) **Effect of modality on partial control:**  
 a. I can try to meet tomorrow.  
 b. \*I can try to sing a song together tomorrow.

In addition, her proposal does not explain why superset readings are out in simple sentences or in raising. As Abusch (2004) notes, there are tense contrasts in raising also, along the lines documented for OC by Wurmbrand (2007). As such, we cannot claim that embedded modality is unique to OC. Finally, not all internally tensed environments allow partial control, casting doubt on the claim that it is this difference that gives rise to partial control (see fn. 12).

superset. Finally, a movement approach has no reason to expect partial control to correlate with any other OC property. As such, an account of this relationship is also necessary.

In this way, the OC account proposed here has a significant advantage over other accounts. Nothing needs to be said beyond the observation that partial control is a property of PRO. The correlations between partial control and case independence, on the one hand, and exhaustive control and case-sharing, on the other, then follow straightforwardly. This is a significant argument in favour of the idea that different structures underlie OC phenomena and that these specifically have the properties of  $\theta$ -movement and PRO-control.

### 3 On the Expression of Inherent Case in OC

There is one other important diagnostic for PRO, alongside partial control. In this section, I argue that embedding a verb that assigns inherent case to its subject is only possible in the PRO-control variant of OC. It is claimed that the lower OC position cannot be quirky in  $\theta$ -movement, on the basis of two facts from Icelandic. First, embedding a quirky case verb results in case preservation in raising, but never in obligatory control. Second, with some OC verbs, embedding a verb that assigns inherent case to its subject gives rise to ungrammaticality. We can account for these facts if a  $\theta$ -movement derivation is blocked in these configurations.

I offer an account of the ungrammaticality of  $\theta$ -movement in these configurations in terms of an LF condition on the interpretation of inherent case. As a result, inherent case on the lower position serves as a diagnostic for PRO-control. In accordance with this, the ability to embed a quirky verb is shown to correlate with the ability to have a partial control reading. In this way, it is a diagnostic for the presence of PRO and further evidence for the fact that there are two structurally different types of obligatory control.

Before going into these correlations, it is important to establish why inherent case should serve as a diagnostic for PRO, as claimed here. To understand this, it is first necessary to go back to a classic observation about case preservation in Icelandic OC. In Icelandic, there is one context in which case concord in OC is dissimilar from raising in an interesting way, as noted by, among others, Þráinsson (1979), Sigurðsson (2008) and Bobaljik and Landau (2009). In raising, inherent case on the lower position is preserved (20). Crucially, this inherent case resists overwriting by the nominative case that is ordinarily assigned to the finite subject.

(20) **Inherent case is preserved in raising:**

Mönnunum virðist báðum hafa verið hjálpað.  
boys.DAT seem both.DAT have been helped.DFT  
‘The boys both seem to have been helped.’  
(Sigurðsson 2008: 419)

If OC phenomena and raising are, at least in some instances, derived in the same way, we

would expect this case preservation to be possible in OC also. However, case preservation is ungrammatical in obligatory control (21a-d).

(21) **Inherent case is not preserved in OC:**

- a. Ólafur hafði ekki gaman af að leiðast einum í veislunni.  
Ólaf.NOM have.PAST not pleasure of to be.bored alone.DAT in party.the
- b. \*Ólafi hafði ekki gaman af að leiðast einum í veislunni.  
Ólaf.DAT have.PAST not pleasure of to be.bored alone.DAT in party.the  
'Ólaf did not find it pleasurable to be bored alone at the party.'  
(Sigurðsson 2008: 412)
- c. Ég vonaðist til að verða vitjað aleins á morgun.  
I.NOM hope.PAST for to become.INF visit.PART all.alone.GEN at morning
- d. \*Mín vonaðist til að verða vitjað aleins á morgun.  
I.GEN hope.PAST for to become.INF visit.PART all.alone.GEN at morning  
'I hope to be visited all alone in the morning.'

Instead, the higher position can only bear nominative case (21a,c), in contrast with (20). Crucially, however, as the floating quantifier *báðum* shows, dative case is nonetheless expressed in the lower position. This has been taken as evidence for a PRO-only account over a movement-only account of OC effects (e.g. Sigurðsson 2008; Bobaljik and Landau 2009). Because nominative case cannot overwrite inherent case, as in (20), if the relevant quirky case is indeed expressed, it should be preserved under movement.

At first glance, this is problematic for any OC account that allows a  $\theta$ -movement derivation. Within a theory that allows both a movement and a PRO derivation, however, there is another possibility. If the  $\theta$ -movement derivation is for some reason unavailable in these configurations, however, we expect the same empirical picture. In support of this idea, it turns out that there are other contexts in which inherent case cannot be expressed on the lower position (e.g. Þráinsson 1979; Eythórsson and Barðdal 2005; Sigurðsson 2008). Eythórsson and Barðdal (2005) observe, for instance, that quirky case verbs embedded under the OC verb *reyna* 'try' are ungrammatical (22a-b). Similar considerations apply to *byrja* 'begin' (22c-d).

(22) **Inherent case on lower position can cause ungrammaticality in OC:**

- a. \*Ég reyndi að falla þessar konur í geð.  
I.NOM try.PAST C fall.INF these women.NOM in liking  
'I tried to like these women.'  
(Eythórsson and Barðdal 2005: 851)
- b. \*Ég reyndi að verða vitjað aleins á morgun.  
I.NOM try.PAST C become.INF visit.PART all.alone.GEN at morning  
'I tried to be visited alone in the morning.'
- c. \*Ég byrja að vera hjálpað.  
I.NOM begin.1SG C be.INF help.PART.DFLT  
'I began to be helped.'

- d. \*Ég byrjaði að verða vitjað aleins á morgun.  
 I.NOM begin.PAST C become.INF visit.PART all.alone.GEN at morning  
 ‘I began to be visited all alone in the morning.’

From the perspective of a PRO analysis, this is unexpected, since these constructions should underlyingly be the same as (21a,c). If  $\theta$ -movement is illicit when the lower position bears inherent case, however, we can explain the ungrammaticality in (22a-d) and (21b,d) by saying that these are all movement-derived. This is the account that I adopt here. The question that arises then is why  $\theta$ -movement should be unavailable in this type of configuration.

One aspect of a movement derivation that might play a role is the fact that it involves movement into a  $\theta$ -position. Icelandic quirky case is typically analysed as inherent and tied to specific  $\theta$ -roles (e.g. Jónsson 1996; Woolford 2006), so movement into a new thematic position could somehow disturb its interpretation. Specifically,  $\theta$ -movement is different from raising and passives in that the relationship between the lower thematic position and the higher case position is less local. In OC, the case position is separated from the lower position by a phase boundary, on the assumption that raising and passive light *v* are defective phase head (e.g. Chomsky 2000, 2001). Suppose then that there is some locality condition on the interpretation of inherent case in A-positions that forces the relevant A-positions to be in the same spell-out domain. In other words, we can postulate an LF condition which renders inherent case uninterpretable if it is not in the same spell-out domain as its thematic position.

To see how this works, consider the raising and  $\theta$ -movement derivations in (23) and (24), respectively. Note that I assume here that raising clauses are TPs, while OC clauses are CPs with a defective C, explaining why neither constitutes a strong phase. Nothing much hinges on this choice. I further take raising and passive light *v*'s to be defective phases, as noted.

On these assumptions, in the raising derivation (23), the first phase head is the matrix C, because the higher *v* and lower *v* are defective. The spell-out domain of this phase head is the whole TP. As such, the lower thematic position, the complement of V, is in the same spell-out domain as the highest A-position.

In the OC derivation in (24), in contrast, the first phase head is the higher *v*, because it is not defective. As such, the first spell-out domain is the higher VP, which includes the lower thematic position. This ensures that, when the second phase head, the higher C, is merged, the lower thematic position is not in the same spell-out domain as the highest A-position. At this point, all the material in the higher VP has been spelled out. This is indicated in grey font.

(23) **Raising:**

*Mönnunum virðist hafa verið hjálpað.*

First phase:

[<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{DAT}] T [<sub>VP</sub> v [<sub>VP</sub> V [<sub>TP</sub> [<sub>DP</sub> D{DAT}] T [<sub>VP</sub> v [<sub>VP</sub> V [<sub>DP</sub> D{DAT}]]]]]]]]]]

(24) **θ-movement (subject control):**

*\*Mín vonaðist til að verða vitjað.*

First phase:

[<sub>VP</sub> [<sub>DP</sub> D{GEN}] v [<sub>VP</sub> V [<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{GEN}] T [<sub>VP</sub> v [<sub>VP</sub> V [<sub>DP</sub> D{GEN}] ]]]]]]]]

Second phase:

[<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{GEN}] T [<sub>VP</sub> [<sub>DP</sub> D{GEN}] v [<sub>VP</sub> V [<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{GEN}] T ... ]]]]]]]]

Note that a similar structural asymmetry can be postulated for ECM and object control, drawing on Landau's (2008: 902-903) treatment of object control.<sup>14</sup> Appl then corresponds to v in subject control and v to T. Like v, Appl is assumed to function as a phase head when it hosts an argument position, but is defective when it does not.

Suppose then that inherent case is only interpretable in an A-position if it is in the same spell-out domain as its associated thematic position. This would predict that a θ-movement derivation is unavailable in the OC case in (24). Specifically, I propose the interface condition in (25).

(25) **Interpretability Condition on Inherent Case:** Inherent case in an A-position can only be interpreted at LF if the associated θ-role is interpreted on the same Spell-Out cycle.

This should be conceived of as a condition on A-positions or, alternately, it could be assumed that interpretation of case occurs when an argument is fully licensed (at least for the purposes of A-movement). On this scenario, the condition in (25) can just apply generally.

Note that, once this restriction is allowed for, the locality condition in (25) is not such an unnatural condition on inherent case. In a phase-based theory, the assumption that thematic roles are configurational (i.e. determined only on the basis of the syntactic positions an argument occupies) entails that information about thematic roles has to be read off narrow syntax. The most natural place for this to happen is at the end of a spell-

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14 Landau (2008: 902-903) proposes a low applicative analysis, along the lines of Pykkänen (2002). In this analysis, the lower clause is the complement of an applicative head, while the higher object position is the specifier of this head. With Landau (2008), I assume that light v, as the locus of object agreement, assigns case to the higher object. In this way, the head that assigns a thematic role to the object is distinct from the case assigner, as in subject control. Adopting this model, the relevant derivations are as in (vi) and (vii). The relevant examples are taken from Bobaljik and Landau (2009).

(vi) **ECM:**

*Ég tel strákanum hafa verið bjargað.*

First phase:

[<sub>VP</sub> [<sub>DP</sub> D{NOM}] v [<sub>VP</sub> V [<sub>AppIP</sub> Appl [<sub>TP</sub> [<sub>DP</sub> D{DAT}] T [<sub>VP</sub> v [<sub>VP</sub> V [<sub>DP</sub> D{DAT}] ]]]]]]]]

(vii) **θ-movement (object control):**

*\*Jón bað honum að leiðast ekki einum.*

First phase:

[<sub>AppIP</sub> [<sub>DP</sub> D{DAT}] Appl [<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{DAT}] T [<sub>VP</sub> [<sub>DP</sub> D{DAT}] v [<sub>VP</sub> V]]]]]

Second phase:

[<sub>VP</sub> [<sub>DP</sub> D{NOM}] v [<sub>VP</sub> V [<sub>AppIP</sub> [<sub>DP</sub> D{DAT}] Appl [<sub>CP</sub> C [<sub>TP</sub> [<sub>DP</sub> D{DAT}] T ... ]]]]]]

out domain. Suppose then that, at the end of each phase, the thematic information that is present in the spell-out domain is interpreted at LF. Assuming then that the interpretation of inherent case is dependent on the interpretation of the associated  $\theta$ -role, the locality condition in (25) is derived. This can also explain the failure of case preservation in obligatory control, given that failure to express inherent case leads to ungrammaticality.

In this account, the raising derivation in (23) is grammatical, because the highest A-position is in the same phase as the lower thematic position. This means that the lower thematic role is read off narrow syntax, and therefore accessible, in the same cycle in which the associated inherent case is interpreted. In the OC derivation in (24), however, the lower thematic role is interpreted in the first phase, headed by the higher *v*. The associated inherent case is not expressed until the next phase, at which point it is divorced from information about the relevant  $\theta$ -role. The interpretation of inherent case is then blocked. The expression of a structural nominative is also not possible, however, because this case can never overwrite an inherent case. As such, the derivation crashes.<sup>15</sup>

This approach crucially predicts that the reverse situation, in which inherent case is associated with the higher thematic position, is grammatical. In this configuration, the highest A-position and the relevant thematic position are in the same spell-out domain. As such, a  $\theta$ -movement derivation should not be blocked and case-sharing should be possible. This is indeed true, as (8a-c), repeated here as (26a-c), illustrate.

(26) **Case-sharing possible when inherent case is in higher position:**

- a. Ji patarė jam būti pasiruošusiam.  
she.NOM advise **he.DAT** be **prepared.DAT**  
'She advised him to be prepared.'  
(Lithuanian; Timberlake 1988: 191)
- b. Ólafí fannst gaman að vera fyrstum.  
**Olaf.DAT** found fun to be.INF **first.DAT**  
'Olaf found it fun to be number one.'  
(Icelandic; Sigurðsson 2008: 415)
- c. ku:rou edeonto ho:s prothumotatou genesthai.  
**Cyrus.GEN** beg.PAST.3PL as **most.devoted.GEN** be.INF  
'They begged Cyrus to be as devoted to them as possible.'  
(Ancient Greek; Andrews 1971: 130)

Another consequence of this account is that case preservation is in principle possible in obligatory control, given the right locality conditions. An apparent construction of this kind is found in some variants of Spanish (Gonzalez 1990; Bošković 1994). The dative case that the verb *gustar* 'like' assigns to its subject can be preserved when embedded

<sup>15</sup> An alternative approach could be to say that assignment of a thematic role undoes the assignment of inherent case, following Boeckx, Hornstein, and Nunes (2010). In this account,  $\theta$ -role assignment entails stripping the relevant argument of any inherent case it might have. We could then assume that failure to express inherent case gives rise to ungrammaticality, creating an illicit derivation. Note, however, that this approach incorrectly predicts that the Spanish example in (28b) is ungrammatical.

under the OC verb *querer* 'want' (27a-b).

(27) **Inherent case preserved in Spanish OC with *querer*:**

- a. A Polly le gusta el gato.  
Polly.DAT CL like.3SG the cat  
'Polly likes the cat.'
- b. A Polly quería gustarle el gato.  
Polly.DAT want.PAST like.INF.CL the cat  
'Polly wanted to like the cat.'

These are nonetheless OC constructions, as (28a) illustrates. One interesting fact, however, is that *querer* is a restructuring verb, as evidenced, for instance, by the fact that long-distance clitic climbing is possible (28b).

(28) **Multiple thematic roles and restructuring with *querer*:**

- a. \*El agua quería correr.  
the water want.PAST flow.INF  
'(lit.) The water wanted to flow.'
- b. Lo quería comprar.  
CL want.PAST buy.INF  
'She wants to buy it.'

Restructuring is generally taken to indicate that the argument positions of the lower clause are in a more local position with the regard to the higher verb. Suppose we adopt the analysis of restructuring in Cinque (2006), for instance, in which restructuring constructions are monoclausal and the restructuring verbs is directly inserted in a left-peripheral position. Under this analysis, we can derive the availability of case preservation, despite the apparent existence of multiple thematic positions. This follows from the fact that all the relevant A-positions remain in the same spell-out domain.

If correct, this analysis entails that embedding a quirky verb is another way in which the presence of PRO can be diagnosed. This predicts then that partial control is possible exactly in those environments where inherent case is available on the lower position. Conversely, partial control should be blocked where inherent case is. We can return to the Icelandic data to examine this. Recall that *vonast* 'hope' is an example of a verb that allows inherent case in its complement, where *reyna* 'try' and *byrja* 'begin' do not. Partial control can be induced using the secondary predicate *saman* 'together.' As the examples in (29a-b) show, only semantic plurality is necessary to license it.

(29) ***Saman* is licensed by semantic plurality:**

- a. Fjölskyldan hafi borðað saman.  
family.NOM.DET have.3SG eat.PART together  
'The family has eaten together.'
- b. \*Hann borðaði saman.

He.NOM eat.PAST.3SG together  
 ‘(lit.) He ate together.’

Embedding *saman* in the relevant non-finite complements yields the relevant contrasts. As expected, although partial control is acceptable with *vonast* ‘hope’ (30a),<sup>16</sup> it is ungrammatical with *reyna* and *byrja* (30b-c).

(30) **Partial control correlates with the possibility of inherent case:**

- a. Ég hélt að hann vonaðist til að borða saman.  
 I.NOM think.PAST C he.NOM hope.PAST for C eat.INF together  
 ‘I thought that he hoped to eat together.’
- b. ??Ég hélt að hann reyndi að borða saman.  
 I.NOM think.PAST C he.NOM try.PAST C eat.INF together  
 ‘(lit.) I thought that he tried to eat together.’
- c. ??Ég hélt að hann byrjaði að borða saman.  
 I.NOM think.PAST C he.NOM begin.PAST C eat.INF together  
 ‘(lit.) I thought that he began to eat together.’

If the ability to host a partial control reading correlates with the ability to embed a quirky subject, as I argue here, then this pattern is straightforwardly explained. Both rely on the presence of PRO. In this way, a previously unexplained fact about quirky case in obligatory control is derived from independently motivated assumptions about the way in which OC phenomena are established. In addition, the inherent case data once again demonstrate that there are two types of OC complements, which respond differently to the same syntactic environment.

In a single-route OC account, however, these data are less straightforward. Just like the approach developed here, some mechanism is necessary to account for the contrasts in the grammaticality of inherent case in both theories. In addition, however, the correlation between inherent case and partial control needs to be explained. As a result, some special mechanism is necessary to derive it. This is true both of a PRO-only and of a movement-only account of OC phenomena. Finally, a movement-only theory requires a special mechanism to explain the failure of case preservation in OC, as in Boeckx, Hornstein, and Nunes (2010). The present theory then has a significant empirical advantage over both OC accounts.

#### 4 On OC and Subject-Verb Agreement

In this section, subject-verb agreement on the embedded verb is argued to be a diagnostic for  $\theta$ -movement, because PRO is not licit in agreeing positions. In support of this, OC complements with subject-verb agreement are shown to only display those properties that

<sup>16</sup> Not all Icelandic speakers accept partial control. Halldór Sigurðsson (p.c.), for instance, rejects partial control across the board. For those that do allow the reading, however, the contrast in (31a-c) obtains, just as in their English counterparts.

are compatible with movement.<sup>17</sup> Non-obligatory control, for instance, is absent in clauses with subject-verb agreement, but raising is attested. Finally, in some instances, the lower copy of the movement-chain can be spelled out instead of the higher one.

It is first necessary to motivate the claim that PRO is not licensed in positions with subject-verb agreement. Evidence for this comes from the fact that NOC always uses a specialised non-agreeing form. Romanian and Persian, for instance, which use agreeing subjunctive verbs in OC otherwise, only employ a non-agreeing infinitive for non-obligatory control (31a-b).

(31) **NOC employs non-agreeing verbs:**

- a. A fi om e lucru mare.  
to be man is thing big  
'Being decent is a precious thing.'  
(Romanian; Alboiu 2003: 10)
- b. Kâr kard-an dar in sharâyet xeyli saxt-e.  
work do-INF in this conditions very difficult-is  
'Doing work in these conditions is very difficult.'  
(Persian; Karimi, to appear: 8)

In addition, in some languages, such as Greek and Romanian, null subjects in agreeing positions only allow a referential reading (32a-b). In Greek subjunctives, for instance, an arbitrary reading is only possible using the overt impersonal pronoun *kanis* 'one' (Roussou 2009). Third person singular *pro* only allows a referential reading (32a). The Romanian subjunctive behaves in the same way (32b).

(32) **Agreeing clauses do not take arbitrary readings:**

- a. Ine efkolo na fi.  
is easy SUBJ leave.3SG  
'It is easy for him/her to leave.'  
(Greek; Roussou 2009: 1830)
- b. E usor sa plece.

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17 On the basis of section one, we might also expect to only find case-sharing. However, it turns out that finite OC does not show any evidence of case-sharing. This is perhaps not so surprising once we realise that subject-verb agreement is commonly held responsible for case assignment (e.g. Chomsky 2000, 2001). Finite OC would then involve multiple case positions. I assume then that finite OC always involves a multiple case chain. In support of this, we find that inherent case is not restricted as in infinitival OC and can be expressed in the complements of exhaustive control verbs (Alboiu 2007). This might also be what is ultimately responsible for the backward control phenomenon discussed in this section, if case is held responsible for spelling out an argument. Indeed, backward control configurations appear to always involve a multiple case chain. What forces movement in these cases has to then be linked to some other factor. One generalisation about these cases is that finite OC complement cannot have internal tense, as many have noted (e.g. Iatridou 1988; Varlokosta 1993; Landau 2004). If this absence of tense corresponds to some failure in licensing, unrelated to case and thematic roles, this could be held responsible for the fact that coreference is obligatory in these constructions.

is easy SUBJ leave.3SG  
 ‘It is easy for him/her to leave.’  
 (Romanian)

There is thus reason to think that PRO is banned from positions with subject-verb agreement. This would make sense of the above empirical facts straightforwardly. If true, subject-verb agreement should then serve to bring out only  $\theta$ -movement derivations.

OC into clauses with subject-verb agreement is indeed found in a number of languages. This may involve subjunctive clauses or, sometimes, inflected infinitives. I will refer to this as *finite obligatory control*, or *finite OC* here. Examples of finite OC, in which the higher argument agrees with both the higher and the lower verb, are given below (33a-d).

(33) **Finite OC with co-indexed agreement:**

- a. O Janis prospaθise na katalavi.  
 the Janis tried.3SG SUBJ understand.3SG  
 ‘Janis tried to understand.’  
 (Greek; Krapova 2001: 105)
- b. Ivan može da spečeli pari.  
 Ivan can.3SG SUBJ make.3SG money  
 ‘Ivan can make money.’  
 (Bulgarian; Krapova 2001: 107)
- c. aræš mi-tun-e ke bi-ad  
 Arash DUR-can-3SG C SUBJ-come-3SG  
 ‘Arash can come.’  
 (Persian; Ghomeshi 2001: 12)
- d. Victor încercă să cinte.  
 Victor try.3SG SUBJ sing.3SG  
 ‘Victor tried to sing.’  
 (Romanian; Alboiu 2007: 190)

In these examples, only coreference is grammatical. The lower subject must be co-indexed with a higher argument, even though the lower clause can host an independent subject when embedded under different verbs. In addition, only a sloppy reading of the lower position is possible under ellipsis, indicating that these are indeed instances of obligatory control.

In support of the idea that these may be treated as instances of movement, we find that raising out of agreeing positions is also attested, although it is less prevalent.<sup>18</sup> As in finite obligatory control, agreement on both verbs must be co-indexed (34a-d).

<sup>18</sup> In Persian, for instance, although finite OC is attested, raising is not (Karimi, to appear). Instead, raising verbs are subjectless and take a finite complement with an in situ subject. Presumably, this relates to tense properties of the raising complement in Persian, in the same way that tense determines variation in finite OC (see fn. 17).

(34) **Raising out of agreeing clauses is attested:**

- a. Epitidhes stamatisa na perno ta farmaka.  
on.purpose stop.PAST.1SG SUBJ take.1SG the medicine  
'I stopped taking medicine on purpose.'  
(Greek; Alexiadou and Anagnostopoulou 2002: 24)
- b. Lui Mihai pare să-i placă școala.  
Mihai.DAT seem.PAST.3SG SUBJ-CL.3SG.DAT like.3SG school.NOM  
'Mihai seems to like school.'  
(Romanian; Alboiu 2007: 201)
- c. axe-r pjəsmə-r a-txə-new ø-feža-κ-ex  
3PL-ABS letter-ABS 3PL.ERG-write-INF 3.ABS-begin-PAST-3PL.ABS  
'They began to write the letter.'  
(Adyghe; Potsdam and Polinsky 2009: 7)
- d. kid ziya b-išr-a y-oq-si.  
girl.II.ABS COW.III.ABS III.feed-INF II.begin.PAST.EVID  
'The girl began to feed the cow.'  
(Tsez; Polinsky and Potsdam 2002: 249)

In this way, OC and raising resemble each other, in that they apply in the same domains. Analysing these constructions as movement provides a straightforward account of this similarity.

Partial control is essentially undetectable in finite OC complements. An important characteristic of finite OC is that partial control verbs display a different behavior than exhaustive control verbs, as observed by San Martin (2004) and Landau (2006). In fact, the relevant verbs do not establish an obligatory control relationship at all. In these constructions, the reference of the lower position is instead unrestricted (35a-d).

(35) **Partial control verbs take free reference in finite OC:**

- a. Θelo na erθi.  
want.1SG SUBJ come.3SG  
'I want him to come.'  
(Greek; Krapova: 105)
- b. Ivan<sub>i</sub> iska da ec<sub>ij</sub> sledva.  
Ivan want.3SG SUBJ study.3SG  
'Ivan wants to go to college.'  
(Bulgarian; Krapova 2001: 107)
- c. pro<sub>i</sub> mi-xa-m ke ec<sub>ij</sub> bi-ad.  
DUR-want-1SG C SUBJ-come-3SG  
'I want (him/her) to come.'  
(Persian; Ghomeshi 2001: 14)
- d. pro<sub>i</sub> vrea să ec<sub>ij</sub> plece.  
want.3SG SUBJ leave.3SG

‘She/he wants (for him/her/them) to leave.’  
(Romanian; Alboiu 2007: 193)

In a sense, this aspect of obligatory control resembles non-obligatory control, in that, in both environments, we find free reference instead of OC. We could explain this if PRO differs from lexical arguments in that it does not need – and, in fact, cannot receive – whatever subject-verb agreement contributes to licensing. This would predict the alternation between PRO and free reference.<sup>19</sup>

A more tangible advantage of this account is that it may shed light on the phenomenon of *backward control*. An observation about OC that has received a more central place in recent work is the fact that the lower copy of an OC chain can sometimes be spelled out (Polinsky and Potsdam 2002, 2006; Potsdam 2006, 2009). Not only does this suggest that an argument may occupy two thematic positions at the same time, but it is also a way in which obligatory control resembles raising. There is evidence also of a backward raising construction, in Adyghe (Potsdam and Polinsky 2009). On its own, backward control then already constitutes an argument for the idea that  $\theta$ -movement is possible.

What is interesting now about backward control is that it is found in exactly the type of OC complements described above, for which I proposed a movement analysis on independent grounds, in which only exhaustive control verbs establish OC. This pattern is found in OC complements with subject-verb agreement, as noted, but also in languages without agreement, such as Japanese and Malagasy. In this way, backward control is an argument for a movement analysis of these constructions.

Backward control has been documented in a variety of languages, including Malagasy (Potsdam 2006, 2009), Tsez (Polinsky and Potsdam 2002), Telugu (Haddad 2007) and Omani Arabic (Al-Balushi 2008). Although the status of the data is less clear,<sup>20</sup> there is some indication that there is a similar construction in Greek and Romanian (Alboiu 2007; Alexiadou et al., to appear). In these languages, the DP that is understood as an argument of both the higher clause and the lower clause can be spelled out in the lower clause (36a-d). The relevant argument is indicated in bold throughout.

(36) **Finite OC subject can be spelled out in the lower clause:**

- a. [kid-**bā** ziya b-išr-a] y-iči-s.  
girl.II.ERG COW.III.ABS III.feed.INF II.continue.PAST.EVID  
‘The girl continued to feed the cow.’  
(Tsez; Polinsky and Potsdam 2002: 247)
- b. naneren’ i Mery [hofafa- **ko** ny trano].  
force.CT Mary sweep- I.NOM the house

<sup>19</sup> This particular theory of PRO is explored in greater detail in work in progress, in which it is used to derive the unique properties of PRO.

<sup>20</sup> Specifically, some of the key judgements are not very robust across speakers, making it difficult to rule out a scrambling analysis. Anna Roussou (p.c.) reports not getting the Principle C contrasts that are key to Alexiadou et al.’s (to appear) argumentation, for instance.

‘Mary forced me to sweep the house.’

(Malagasy; Potsdam 2006: 330)

- c. [Ram-e kam-tu kor-i] gusi gol.  
Ram-NOM work do-CNP away went  
‘Having done the work, Ram left.’

(Telugu; Haddad 2007: 82)

- d. tgarra? [ʔinnu-h yi-msik Talal l-Guul].  
dare.PAST.3SM that-3SM PRES-hold.3SM.SUBJ Talal.NOM the-snake.ACC  
‘Talal dared to hold the snake.’  
(Omani Arabic; Al-Balushi 2008: 11)

A representative example is the case of Tsez, in (36a), documented in Polinsky and Potsdam (2002). In this language, the ergative subject of the lower clause is spelled out with some OC verbs (37a-b).

(37) **Lower ergative subject can be spelled out in Tsez:**

- a. [kid-bā ziya b-išr-a] y-oq-si.  
girl.II.ERG COW.III.ABS III.feed.INF II.begin.PAST.EVID  
‘The girl began to feed the cow.’
- b. [kid-bā ziya b-išr-a] y-iči-s.  
girl.II.ERG COW.III.ABS III.feed.INF II.continue.PAST.EVID  
‘The girl continued to feed the cow.’  
(Polinsky and Potsdam 2002: 247)

This ergative-marked argument is understood as the thematic subject of both clauses. In addition, as the verbal prefixes indicate, the ergative argument agrees with the higher verb. This is striking, because agreement in Tsez otherwise tracks absolutive arguments exclusively. To account for this, Polinsky and Potsdam propose that there is an absolutive-marked copy of the ergative argument in the higher clause. In support of this Polinsky and Potsdam show that, for the purposes of scrambling and clitic positioning, the ergative subject is treated as a member of the lower clause. Despite this, it behaves as if it is in the higher clause for the purposes of licensing depictives, reflexives and agreement on the higher verb. This pattern makes sense if there are two copies of the OC nominal, one in both clauses.

Another representative example is an alternation found in Malagasy (Potsdam 2006, 2009). In Malagasy object control, the OC argument can be spelled out in two positions (38a-b).

(38) **Malagasy OC argument can be spelled out in both clauses:**

- a. naneren’ i Mery ahy [hofafana ny trano].  
force.CT Mary I.ACC sweep the house
- b. naneren’ i Mery [hofafa- ko ny trano].  
force.CT Mary sweep- I.NOM the house

‘Mary forced me to sweep the house.’  
(Potsdam 2006: 330)

Potsdam (2006, 2009) presents a number of facts in support of this analysis. Floating quantifiers can be stranded in the higher clause, even when the relevant argument is in the lower clause. In addition, Malagasy is not an object *pro*-drop language, so an analysis along these lines is implausible.

In support of the idea that this is a movement-related effect, there is a similar construction in raising, *backward raising*. A construction like this has been observed in Adyghe (Potsdam and Polinsky 2009). Adyghe, like Tsez, makes use of inflected infinitives and is a finite OC language. In this construction, the raising nominal can surface both with the absolutive case of the higher position and with the ergative case of the lower position (39a-b).

(39) **Raising argument in Adyghe can have case of both clauses:**

- a.     axe-me pjəsmə-r a-txə-new        ø-feža-Ɂ-ex  
3PL-ERG letter-ABS 3PL.ERG-write-INF 3.ABS-begin-PAST-3PL.ABS  
‘They began to write the letter.’
- b.     axe-r   pjəsmə-r a-txə-new        ø-feža-Ɂ-ex  
3PL-ABS letter-ABS 3PL.ERG-write-INF 3.ABS-begin-PAST-3PL.ABS  
‘They began to write the letter.’  
(Potsdam and Polinsky 2009: 7)

What is striking about this alternation is that the raising argument shows absolutive agreement with the higher verb regardless of what form it is in. To explain this, Potsdam and Polinsky (2009) propose that (39a) has the same underlying structure as backward control in Tsez. In other words, there is an absolutive copy of the same argument in the higher clause and the ergative-marked argument in (39a) is in the embedded clause. That these are indeed raising verbs is evidenced by the fact that idiomatic readings are preserved (40).

(40) **Idioms are preserved in Adyghe raising:**

- ə-pe           h<sub>w</sub>əzə-r   qərəxjə-new feža-Ɂ  
3SG.POSS-nose smoke-ABS blow-INF    began  
‘(lit.) Smoke began to blow out of his/her nose.’  
‘She/he began to be furious.’  
(Potsdam and Polinsky 2009: 10)

Potsdam and Polinsky (to appear) also show that these structures are biclausal, in that the clauses allow independent negation and event modification.

Facts from NPI licensing then indicate that the ergative argument is indeed in the lower clause, while the absolutive argument is in the lower clause. An NPI subject has to be licensed by negation on the verb in its clause. As the examples in (41a-b) show, the

ergative argument is only licensed by negation on the lower verb. Conversely, the absolutive subject is only licensed by negation on the higher verb.

(41) **NPI data tracks case:**

- a. \*zeč'erjə / zeč'emjə kjətajə-bze-r                    a-mə-še-new  
 all.ABS / all.ERG Chinese-language-ABS 3PL.ERG-NEG-know-INF  
 qəčəč'ə-ɸ-ex  
 happen-PAST-PL
- b. zeč'erjə / \*zeč'emjə kjətajə-bze-r                    a-še-new  
 all.ABS / all.ERG Chinese-language-ABS 3PL.ERG-know-INF  
 qəčəč'ə-ɸ-ep  
 happen-PAST-NEG  
 'Nobody happened to know Chinese.'  
 (Potsdam and Polinsky 2009: 17)

Data from scope readings nonetheless show that there is a copy of the raising subject in the higher clause in both constructions. Similar facts from reflexive-binding support this conclusion. In this way, Adyghe shows that backward raising is also possible.

The backward control and raising data are important in a few ways.<sup>21</sup> First, they present an argument for the idea that a nominal can occupy two thematic positions at the same time – strongly suggesting that  $\theta$ -movement is at least a possibility in natural languages. In addition, these data constitute independent evidence for a  $\theta$ -movement analysis of finite OC. Backward control is only found in languages that have this pattern of obligatory control (i.e. only exhaustive control verbs establish OC). In this way, subject-verb agreement serves as a diagnostic for the presence of  $\theta$ -movement. In the approach to obligatory control developed here, the properties associated with finite OC can then be captured straightforwardly.

For a movement-only approach to OC phenomena, these data are also straightforward, since no PRO effects are predicted anywhere. Backward control is similarly not problematic. A PRO theory has difficulty dealing with the existence of backward control effects, however, because an argument is assumed not to be able to occupy two thematic positions. It then has the non-trivial task of accounting for the fact that this appears to be possible. As such, it has to postulate some special mechanism to explain backward control and why it should be found in a consistent class of environments.

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21 There are a number of good reasons to take the backward control data seriously. As Polinsky and Potsdam (2006) note, the instances of backward control across languages seem to behave as a coherent class across languages. The verbs that allow backward control are similar. Specifically, they belong to the verb classes that only allow exhaustive control in English and other languages. An analysis using a higher *pro* might be entertained (e.g. McCormack and Smith 2004), disregarding, for the moment, that this should incur a Principle C violation and that not all of these languages are *pro*-drop languages, but it has no reason to expect these constructions to have a consistent character. In addition, backward control obtains only in a particular type of complement, finite OC complements.

A  $\theta$ -movement and PRO-control approach to OC is then able to accommodate a wide range of empirical phenomena. The existence of variation in case, in the tolerance to partial control, in the ability to embed a quirky verb and in the tolerance to subject-verb agreement follows from the availability of multiple strategies. In addition, the fact that two coherent sets of properties, one naturally associated with  $\theta$ -movement and one with PRO-control, can be isolated from each other in different contexts is straightforwardly derived.

## 5 Final Remarks

This paper has argued for a new account of OC phenomena, in which both  $\theta$ -movement and PRO-control underlie OC. In this model, obligatory control is the area in which the distribution of raising and NOC overlaps. In support of this, it is observed that: a) there are two structurally different types of OC and b) these have the properties of movement and PRO, respectively. The consistent pattern of case independence alongside case-sharing, the availability of partial control alongside exhaustive control and the correlations between these properties are in this way derived from relatively natural assumptions about the characteristics of movement and PRO. Similarly, the correlation between inherent case on the lower position and partial control, the absence of PRO effects in finite OC and the existence of backward control can be accommodated within this account. Competing OC theories need to assume a range of special mechanisms to capture these facts. In addition, although a novel account of the failure of case preservation in OC is necessary, this is true of other OC accounts also.

This dual-route account of OC phenomena appears to introduce some optionality in the grammar. The use of multiple strategies to establish one relation is nothing new, however. Antecedency and movement strategies are found alongside each other in most  $\bar{A}$ -movement processes, such as *wh*-movement and relativisation (see, for instance, McCloskey 2001 and den Dikken 2009 on *wh*- extraction in Irish and Hungarian, respectively and Adger and Ramchand 2005 on Welsh). In addition, natural language routinely employs multiple constructions to derive the same relation. Dutch, for instance, has three different possessive constructions that can be used with animate possessors.<sup>22</sup>

Note finally that both  $\theta$ -movement and PRO-control derive from mechanisms that

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22 These are: a topic plus possessive construction (viii<sub>a</sub>), a genitive (viii<sub>b</sub>), and a prepositional possessive (viii<sub>c</sub>). When an animate possessor is used, there appears to be no real semantic difference between these options. Only the prepositional possessive is compatible with an inanimate possessor, however.

(viii) **Three possessives in Dutch:**

- a. Calvin zijn handschoenen  
Calvin he.POSS hand.shoes
- b. Calvins handschoenen  
Calvin.POSS hand.shoes
- c. de handschoenen van Calvin  
the hand.shoes of Calvin  
'Calvin's gloves'

are independently necessary in the grammar. The unique nature of non-obligatory control, and perhaps the existence of PRO as matrix subject of autonomous impersonals (e.g. McCloskey 2007), calls for a unique null argument. Similarly, we know from raising constructions that cross-clausal A-movement is an option in natural languages. There is even evidence that raising may move through multiple case positions (e.g. Polinsky and Potsdam 2002; Potsdam and Polinsky 2009). The range of environments in which they are found may be defined differently, but the basic operations behind NOC and raising must then be maintained in any model of OC. What this theory does is simply to exploit this fact fully.

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