

Embedded Verb Second in Infinitival Clauses^{*}

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1. THE PROBLEM OF INFINITIVAL VERB MOVEMENT IN ICELANDIC

Icelandic is the only Scandinavian language in which the verb always moves past negation, and other sentence adverbials, in embedded clauses. We follow everyone else and take this as evidence that Icelandic as opposed to the other Scandinavian languages has V^o-to-I^{o1} movement (see, e.g., Kosmeijer 1986, Holmberg & Platzack 1990:101, Rohrbacher 1994:30-69, and Vikner 1994:118-127, 1995:ch.5). If we assume that negation and sentence adverbials mark the left edge of VP (they could be adjoined to VP or to TP, for example), then the following embedded questions clearly show that the verb has to move to I^o in Icelandic and remain lower in Swedish.

- (1) a. *Ég spurði af hverju hefði Helgi oft lesið þessa bók. (Icelandic)
b. Ég spurði af hverju Helgi hefði oft lesið þessa bók.
c. *Ég spurði af hverju Helgi oft hefði lesið þessa bók.
I asked why (had) Helgi (had) often (had) read this book
(I asked why Helgi had often read this book.)
(Vikner 1995:139, (15))

- (2) a. *Jag frågade varför hade Helge ofta läst denna bok. (Swedish)
b. ??Jag frågade varför Helge hade ofta läst denna bok.
c. Jag frågade varför Helge ofta hade läst denna bok.
I asked why (had) Helge (had) often (had) read this book
(I asked why Helgi had often read this book.)

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¹We adopt a post-Pollockian view of clausal structure, one that gives to each clause two functional projections into which the VP (or VPs) are embedded. We will call the lower of these functional projections TP (tense phrase), indicating our belief that this projection is associated with tense morphology; the higher of these functional projections we call IP (inflection phrase).

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In the references cited above, the difference between (1) and (2) is linked to the difference between the strong agreement in Icelandic and the weak one in the other Scandinavian languages, as witnessed by the inflectional paradigms in (3).²

(3) *throw*, infinitive and present indicative:

	Icelandic	Faroese	Swedish
Infinitive	<i>kasta</i>	<i>kasta</i>	<i>kasta</i>
	Singular		
1st	ég kasta	eg kasti	jag kastar
2nd	þú kastar	tú kastar	du kastar
3rd	hann kastar	hann kastar	han kastar
	Plural		
1st	við köstum	vit kasta	vi kastar
2nd	þið kastið	tit kasta	ni kastar
3rd	þeir kasta	tey kasta	de kastar

Icelandic agreement morphology is richer in its distinctions than are the agreement morphologies in the other languages. In the Germanic family, this morphological richness tends to correlate with the availability of V^o-to-I^o movement. Without becoming particular about how many distinctions qualify an agreement morpheme as strong, we can express the correlation as follows:³

(4) If and only if a clause has strong agreement morphology, then V^o-to-I^o.

In this light, it is interesting that a parallel difference in verb movement seems to exist between Icelandic and the other Scandinavian languages in a construction where there is no agreement inflection whatsoever to be found on the moved verb: control infinitives. In these clauses the verb also moves past negation and sentence adverbials in Icelandic. This is illustrated for complement infinitivals in (5) and (6), and for infinitival relatives in (7).

²For more discussion of Faroese, see e.g. Rohrbacher (1994:48,130), Vikner (1994:123-125, 1995:sec. 5.3.3), Petersen, *et al.* (1998), and references cited there.

³See Rohrbacher (1994), Vikner (1997) and references cited there.

- (5) a. *María lofaði að lesa ekki bókina.* (Icelandic)
 b. **María lofaði að ekki lesa bókina.*
 Maria promised to (read) not (read) book-the
 (Mary promised to not read the book.)
 (Sigurðsson 1989:50, (3a, 4a))
- (6) *Þess vegna fullyrðir Pétur ...* (Icelandic)
 Therefore claimed Pétur ...
- a. *... að hafa oft hugsað um foreldra sína.*
 b. **... að oft hafa hugsað um foreldra sína.*
 ... to (have) often (have) thought about parents his
 (Therefore, Peter claimed to have often thought about his parents.)
- (7) a. **Þetta er góð ástæða (til) að ekki líka málvísindi.* (Icelandic)
 b. *Þetta er góð ástæða (til) að líka ekki málvísindi.*
 this is good reason to (not) like (not) linguistics
 (This is a good reason not to like linguistics.)
- c. **Þetta er góð ástæða (til) að aldrei lesa danskar bækur.* (Icelandic)
 d. *Þetta er góð ástæða (til) að lesa aldrei danskar bækur.*
 this is good reason to (never) read (never) Danish books
 (This is a good reason to never read Danish books.)

In the other Scandinavian languages, the verb has to remain inside VP in such constructions; we illustrate this with Swedish examples.

- (8) a. **Maria lovade att läsa inte boken.* (Swedish)
 b. *Maria lovade att inte läsa boken*
 Maria promised to (read) not (read) book-the
 (Mary promised to not read the book.)
 ((8b) based on Holmberg 1986:154, (46b))
- (9) *Därför påstod Peter sig ...* (Swedish)
 Therefore claimed Peter REFL ...
- a. **... att ha ofta tänkt på sina föräldrar.*
 b. *... att ofta ha tänkt på sina föräldrar.*
 ... to (have) often (have) thought about his parents
 (Therefore, Peter claimed to have often thought about his parents.)

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- (10) a. Det här är ett gott skäl (för) att inte gilla lingvistik. (Swedish)
 b. *Det här är ett gott skäl (för) att gilla inte lingvistik.
 this here is a good reason (for) to (like) not (like) linguistics
 (This is a good reason not to like linguistics.)
 c. Det här är ett gott skäl (för) att aldrig läsa danska böcker. (Swedish)
 d. *Det här är ett gott skäl (för) att läsa aldrig danska böcker.
 this here is a good reason (for) to (never) read (never) danish books
 (This is a good reason never to read Danish books.)

It appears, therefore, that the difference in availability of verb movement in finite clauses which distinguishes Icelandic from the other Scandinavian languages is reproduced in infinitives. Because the infinitival morphology in all these languages is wholly lacking agreement, the correlation between richness of agreement morphology and availability of V° -to- I° appears imperiled.

Is there, perhaps, a way of expressing the correlation so that these non-finite clauses no longer constitute a counterexample for it? Maybe, for instance, the relationship between strong morphology and verb movement in (4) could be rewritten so that it speaks of language types instead of clause types. That is, perhaps it could be rendered as in (11).

- (11) If and only if a language has strong agreement, then V° -to- I° .

This would let V° -to- I° exist in every clause type of a language, if that language hosts any clause type with strong agreement. Thus, V° -to- I° would be licensed in Icelandic infinitival clauses because of the strong agreement Icelandic has in its finite clauses.

French stands in the way of this sort of revision, however. French is like Icelandic in having V° -to- I° movement in finite clauses (cf. Emonds 1978, Pollock 1989), but does not have V° -to- I° movement in its infinitivals:⁴

- (12) a. *Marie a promis de (ne) lire pas le livre. (French)
 b. Marie a promis de (ne) pas lire le livre.
 Marie has promised to (read) not (read) the book
 (Mary has promised not to read the book.)

This, then, does not look like the way (4) should be rescued.

We propose a different way to evade the counterexample. First, we take the (more common) view that (4) should be rendered so that it correlates a verb's surface position with strength of agreement, rather than correlating the V° -to- I° rule with agreement strength. This is because in those languages which do not tolerate a verb in I° on the surface, the verb may

⁴For the particular situation concerning the position of infinitival auxiliaries, see Pollock (1989:373-383).

nonetheless move through this position. In Danish, for example, a finite verb may move through I° into C°, as in (13).

- (13) Kaffe drikker Peter ofte om morgenen.
 coffee drinks Peter often in morning-the
 (Coffee, Peter drinks often in the morning.)
 (Vikner 1995: 47, (33d))

Thus, (4) should be changed to (14).

- (14) The I° in a given clause may contain a V° on the surface, only if agreement morphology is strong in that clause.

This change means that V°-to-I° will be possible in Icelandic control infinitives, just so long as the verb doesn't stop there. We suggest – and here is where we depart from everyone else⁵ – that the verb in Icelandic control infinitives doesn't stop moving until it gets to C°. This analysis presupposes, therefore, that there are two CPs in the infinitival clauses of (4a) and (5a): The higher C° contains *að* 'to', and the lower contains the infinitive *lesa*, 'read':⁶

- (15) *María lofaði [CP [C° að] [CP [C° lesa] ekki bókina]].* (Icelandic)
 Maria promised to read not book-the
 (Mary promised to not read the book.)

Our starting point will be to show that this is a possible analysis of Icelandic infinitival clauses. In the following section we begin that task by defending the idea that Icelandic control infinitives can be forced to have the recursive CPs shown in (15).

2. THE PROPOSAL: ICELANDIC CONTROL INFINITIVES ARE RECURSIVE CPs

2.1. Icelandic Control Infinitives can be Recursive CPs

The recursive CP structure we posit for Icelandic control infinitives is known to be possible for embedded finite clauses. If we take the verb-second word order to be diagnostic of recursive

⁵We therefore differ from with Thráinsson (1984:253-254, 1986a:247, 1986b:254), Holmberg (1986:156, (52)), Hornstein (1989:217), Sigurðsson (1989:50), Sigurjónsdóttir (1989:38), Rögnvaldsson & Thráinsson (1990:19), and Thráinsson (1993:191).

⁶The CP-recursion analysis has been advocated for the analysis of embedded finite V2-clauses in Frisian by deHaan & Weerman (1986:86), in Swedish by Holmberg (1986:110) and by Platzack (1986a:225), in English by Rizzi & Roberts (1989:22) and Authier (1992), in Danish and Frisian by Iatridou & Kroch (1992), and in all of the above by Vikner (1994, 1995:ch. 4).

In our view, this analysis does not differ crucially from the analyses, where a (different) functional projection intervenes between CP and IP: The head of this projection is labeled Agr1° in Roberts (1993), F° (for focus) in Tsimpli (1990), T° (for topic) in Müller & Sternefeld (1993:485), and AgrC° in Shlonsky (1994).

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CPs, then the availability of embedded V2 in Danish, (16), and in German, (17), indicates that they are possible in these languages.

- (16) a. Vi ved [_{CP} at [_{CP} Helge₁ har₂ [_{IP} t₁ ikke t₂ læst bogen]]] (Danish)
 We know that Helge has not read book-the
- b. Vi ved [_{CP} at [_{IP} Helge ikke har læst bogen]]
 We know that Helge not has read book-the
 (We know that Helge has not read the book.)
- (17) a. Wir wissen [_{CP} Helge₁ hat₁ [_{IP} t₁ das Buch gelesen t₂]] (German)
 We know Helge has the book read
- b. Wir wissen [_{CP} daß [_{IP} Helge das Buch gelesen hat]]
 We know that Helge the book read has
 (We know that Helge has read the book.)

In fact, this situation is possible in virtually every Germanic language. But, interestingly, recursive CPs are typically only permitted when the selecting verb is a so-called bridge verb.⁷ Compare the Danish (16a) to (18a,c) below and the German (17a) to (19a,c) below.

- (18) a. Det var uventet, ... (Danish)
 It was unexpected ...
- C° CPsp C° IPsp I° Adv V°
- a. *... at Helge havde ofte læst den her bog.
 b. ... at Helge ofte havde læst den her bog.
 ... that (Helge)(had) (Helge) often (had) read this here book
- C° CPsp C° IPsp I° Adv V°
- c. *... at den her bog havde Helge ofte læst
 d. *... at den her bog Helge havde ofte læst
 e. *... at den her bog Helge ofte havde læst
 ... that this here book (had) Helge (had) often (had) read
 (It was unexpected that Helge had often read this here book.)

⁷For further discussion, see e.g. Iatridou & Kroch (1992:4-7, 17-19) and Vikner (1994:133-135; 1995, 70-72) and references cited there.

- (19) Es war unerwartet, ... (German)
 It was unexpected ...

- C° CPsp C° IPsp
 a. *... (daß) Helge hatte dieses Buch gelesen
 b. ... daß Helge dieses Buch gelesen hatte
 ... that (Helge) (had) (Helge) this book read (had)
 c. *... (daß) dieses Buch hatte Helge gelesen
 d. *... (daß) dieses Buch Helge gelesen hatte
 ... that this book (had) Helge read (had)
 (It was unexpected that Helgi had read this here book.)

If this sensitivity to selecting verb also constrains the CP recursion phenomena in Icelandic, then we should expect to find evidence of verb movement in Icelandic control infinitives only in contexts where a bridge-verb selects a control infinitive.

But CP recursion in Icelandic is not constrained in this way. Any finite declarative complement can display CP recursion in Icelandic, even those embedded under a non-bridge-verb, as in (20).

- (20) Það var óvænt, [C° að] ...
 It was unexpected that ...

- CPsp C° IPsp I° Adv V°
 a. ... Helgi skyldi oft hafa lesið þessa bók.
 b. *... Helgi oft skyldi hafa lesið þessa bók.
 ... (Helgi)(should) (Helgi) often (should) have read this book
 CPsp C° IPsp I° Adv V°
 c. ... þessa bók skyldi Helgi oft hafa lesið.
 d. *... þessa bók Helgi skyldi oft hafa lesið.
 e. *... þessa bók Helgi oft skyldi hafa lesið.
 ... this book (should) Helgi (should) often (should) have read
 (It was unexpected that Helgi should have often read this book.)
 (from Vikner 1994:126, (20))

As a consequence, we should find that verb movement in Icelandic control infinitives is not sensitive to the class of verb that selects that infinitive. So far as we have been able to determine, there is no such sensitivity.

Note also that (20) indicates that when CP recursion occurs, the Verb Second word order is obligatory: (20b) is worse than (20a), and (20d,e) are ungrammatical when compared to (20c). Apparently, the extra C° that CP recursion introduces must be filled with a verb. Thus, our

hypothesis that Icelandic control infinitives have recursive CPs will also guarantee that the verb's movement into C° is obligatory.

It is possible, therefore, that Icelandic control infinitives have the recursive CP structure that we posit for them. Icelandic finite declarative clauses may always have a recursive CP structure, and because there is no known reason why this ability shouldn't be shared by non-finite declarative clauses, we should expect it in control infinitives as well. But there is a difference between finite and infinitival clauses that we shall need to explain. CP recursion is merely optional in finite clauses, but our account requires it to be obligatory in control infinitives.

2.2. How Icelandic Control Infinitives are Forced to be Recursive CPs

The optionality of CP recursion in embedded finite clauses is indicated by the optionality of verb second word-order in these clauses.

- (21) a. Vi ved [_{CP} at [_{CP} Helge₁ har₂ [_{IP} t₁ ikke t₂ læst bogen]]] (Danish)
 We know that Helge has not read book-the
- b. Vi ved [_{CP} at [_{IP} Helge ikke har læst bogen]]
 We know that Helge not has read book-the
 (We know that Helgi has not read the book.)
- (22) a. Wir wissen [_{CP} Helge₁ hat₁ [_{IP} t₁ das Buch gelesen t₂]] (German)
 We know Helge has the book read
- b. Wir wissen [_{CP} daß [_{IP} Helge das Buch gelesen hat]]
 We know that Helge the book read has
 (We know that Helgi has read the book.)

As noted above, if the relevant C° is forced to exist, as is the case in embedded topicalizations, then the movement of the finite verb must take place:

- (23) a. Vi ved [_{CP} at [_{CP} denne bog₁ har₂ [_{IP} Helge ikke t₂ læst t₁]]] (Danish)
 b. *Vi ved [_{CP} at [_{CP} denne bog₁ [_{IP} Helge ikke har læst t₁]]]
 We know that this book (has) Helge not (has) read
 (We know that this book, Helgi has not read.)
- (24) a. Wir wissen [_{CP} dieses Buch₁ hat₂ [_{IP} Helge t₁ gelesen t₂]]. (German)
 b. *Wir wissen [_{CP} dieses Buch₁ [_{IP} Helge t₁ gelesen hat]].
 We know this book (has) Helge read (has)
 (We know that this book, Helgi has read.)

So the optional movement of the verb in (21)-(22) must be due to the optionality of CP recursion.

But, verb movement, hence CP recursion, in Icelandic control clauses is not optional. What is it about Icelandic control clauses that suddenly enforces this option? We suggest that it is the

same factor which is responsible for blocking control infinitives in English from having an overt complementizer associated with them. The majority of English dialects have contrasts of the kind in (25).

- (25) a. Sandy wants [_{CP} [_{C̄} [_{IP} PRO to go]]].
 b. *Sandy wants [_{CP} [_{C̄} for [_{IP} PRO to go]]].
 c. Sandy wonders [_{CP} when [_{C̄} [_{IP} PRO to go]]].
 d. *Sandy wonders [_{CP} [_{C̄} if [_{IP} PRO to go]]].

A popular description of this fact implicates the conditions that determine where PRO, the null subject of control infinitives, can be. In *Lectures on Government and Binding*,⁸ for instance, Chomsky proposed a condition like that in (26), which he then suggested could be derived from a theory of anaphora.

- (26) PRO cannot be governed by a lexical item.

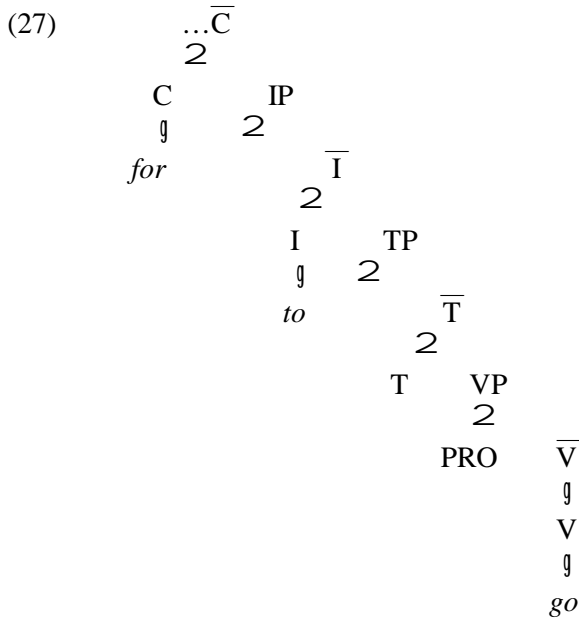
The PRO subjects of (25a) and (25c) survive this condition, but the PROs in (25b) and (25d) don't. They are governed by the adjacent complementizer.⁹ While the particular method Chomsky suggested for deriving the description in (26) has fallen into disuse, its validity appears to be unchallenged. Therefore, though we will qualify it slightly below, let us adopt (26) as the source of the contrasts in (25).

(26) is not quite sufficient, however. It needs to be coupled with a theory that forces PRO to reside in the Specifier position that complementizers govern. Consider, for example, what would happen in (25b) if PRO were able to remain in its underlying position, which we will assume is the Specifier of the VP headed by *go*. This might yield a parse like that in (27).

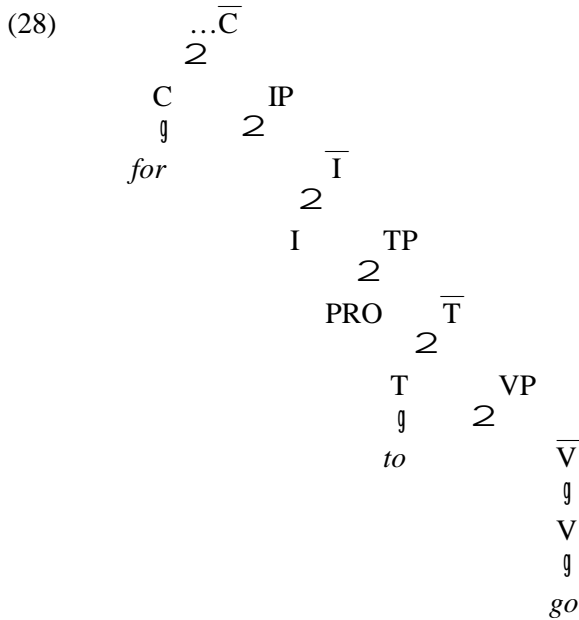
⁸Chomsky, N. 1981. *Lectures on Government and Binding*. Dordrecht, The Netherlands: Foris Publications.

⁹ α governs β iff every phrase marker node dominating α also dominates β and there is no more than one γ that dominates β but not α . Understand dominates to be irreflexive.

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(Note that we have held constant our post-Pollockian assumption that clauses are made up of at least two functional projections.) In this representation, (26) is satisfied – no lexical item governs PRO – and so it appears that (25b) should have (this) grammatical parse. Maybe, however, we have made a mistake in placing *to* in I° ; if it were in T° , then PRO in (27) would be governed by *to*, and even this parse would correctly cause (26) to be violated. But if *to* is in T° , then (28) should be a grammatical representation.



In (28), PRO has moved into Specifier of TP, and there finds an ungoverned position. Thus, for the presence of PRO to prevent the expression of a complementizer by way of (26), we need to guarantee that it is always present in Specifier of IP. Following Sigurðsson (1989:183-192, 1991:328-339), Chomsky & Lasnik (1993:561), Thráinsson (1993:206) and others, let us assume that this is done by way of the Case Filter. Assume that PRO gets its Case from Specifier of IP, and no matter where it starts, it will always ‘surface’ there. So, in addition to (26), adopt also:

- (29) PRO must be in a Case-marked position in the surface representation.
 (30) The Specifier of non-finite IP is assigned the Case that PRO bears.

Now, holding constant (29) and (30), Icelandic control infinitives cannot be parsed without CP recursion if they are to avoid violating (26). Because Icelandic control infinitives contain something overt in their C°, namely *að*, they are fully parallel to (25b):

- (31) *María lofaði* [CP [\bar{C} *að* [IP PRO *lesa* *bókina*]]]. (Icelandic)
 Mary promised ‘to’ read book-the
 (Mary promised to read the book.)

In (31), *að* governs PRO, and a violation of (26) ensues. The complementizers of Icelandic non-finite clauses cannot delete, as they can in English, so there is no companion representation like the English (25a). But Icelandic can invoke CP recursion, which has the desirable property of putting distance between the complementizer and PRO, as (32) indicates.

- (32) *María lofaði* [CP [\bar{C} *að* [CP [\bar{C} [IP PRO *lesa* *bókina*]]]]. (Icelandic)
 Mary promised ‘to’ read book-the

Að no longer governs PRO in (32). This is what we suggest forces CP recursion in the control infinitives of Icelandic. The movement of the verb is then an automatic consequence.¹⁰

Unfortunately, the consequential movement of the verb also appears to undermine the reason we have just given for obligatory CP recursion in these contexts. Once the verb has moved, it will stand in the position shown in (33), where it governs PRO.

- (33) *María lofaði* [CP [\bar{C} *að* [CP [\bar{C} *lesa* [IP PRO *t_v* *bókina*]]]]. (Icelandic)
 Mary promised ‘to’ read book-the

How does this parse survive (26)?

At the beginning of this section, we noted that an embedded finite clause is forced to avail itself of a recursive CP structure when it hosts a topicalized phrase (see (23) and (24)). Another

¹⁰That CP recursion obligatorily triggers verb movement into C° is the reason we believe that English does not avail itself of this strategy to alleviate the violations of (26) in (25b) and (25c). The English verb cannot move into C°, at least because of the intervening presence of *to*.

view of this claim is that they obligatorily host topicalization. This, we suggest, is how PRO passes (26) – it topicalizes to the Specifier of the embedded CP, yielding (34).

- (34) *María lofaði* [_{CP} [_{C̄} *að* [_{CP} PRO₁ [_{C̄} *lesa* [_{IP} *t_I t_v* *bókina*]]]]. (Icelandic)
 Mary promised ‘to’ read book-the

Of course, (34) still looks like a violation of (26) since PRO again resides in a position governed by *að*. But there is a difference in this case and the one in (31), where PRO was also governed by *að*. The PRO in (31) is in a Case-marked A-position, whereas the PRO in (33) is in an \bar{A} -position. The data that motivate (26) are all cases where PRO is in an A-position. Could it be that (26) should be restricted to hold only of PRO in A-positions?

Some accounts of the *tough* Construction in English might be construed as evidence for qualifying (26) in this way. Chomsky (1980) (and see the discussion in Browning 1987, section 2.3) suggest that in constructions like (35), a null anaphoric element has moved into the Specifier of the embedded infinitival.

- (35) *Julie₁ is tough* [_{CP} \bar{e} ₁ [_{C̄} [_{IP} PRO to displease *t_I*]]]].

This null element, which in (35) is represented by “ \bar{e} ,” has many of the properties of PRO. It must be understood as bound by a c-commanding term, as the ungrammaticality of (36) indicates, and it is subject to a locality condition like that which holds of bound PRO, as the parallelism between (37a) and (37b) indicates.

- (36) **[Julie₁’s brother] is tough* [_{CP} \bar{e} ₁ [_{C̄} [_{IP} PRO to displease *t_I*]]]].

- (37) a. **Julie₁ thought that Liz₂ is tough* [_{CP} \bar{e} ₁ [_{C̄} [_{IP} PRO to displease *t_I*]]]].
 b. **Julie₁ said that Liz₂ tried* [_{IP} PRO₁ to leave].

Roughly, PRO must be bound by a c-commanding argument in the clause immediately containing PRO’s own clause, and this is also precisely true of “ \bar{e} .” (See Bresnan 1982, Manzini 1983 and Chierchia 1984, chapter 4 for discussion.) So, it is not too radical to imagine that \bar{e} is PRO:

- (38) *Julie₁ is tough* [_{CP} PRO₁ [_{C̄} [_{IP} PRO to displease *t_I*]]]].

But, interestingly, the PRO in Specifier of CP in (38) is governed by *tough*. This will violate (26) as it stands; but if (26) is modified to hold only of PRO sitting in A-positions, then (38) will pass.

So let us change (26) in the required way:

- (39) PRO cannot both be governed by a lexical item and stand in an A-position.

In Icelandic control infinitives, (39) has the effect of forcing PRO to topicalize, and this in turn triggers the recursive CP and attendant Verb Movement processes. This is what we propose is responsible for the verb’s movement in these control infinitives.

3. THE EVIDENCE

3.1. Language Internal

In the preceding section, we have provided a way of conceiving of the verb movement in Icelandic control infinitives that removes this as a counterexample to a generalization about when verb movement to I° is licensed in Germanic. This way of conceiving of Icelandic control infinitives makes use of facts about embedded verb second phenomena and conditions on PRO's distribution which, even if not entirely understood, nonetheless look true. We have made two extensions to the standard beliefs about these facts in our proposal. First, we have restricted the standard description of where PRO can be so that it applies just to PROs which reside in A-positions. And second, we have countenanced recursive CPs for infinitival clauses, where the standard literature only treats CP recursion as a phenomenon available to finite clauses. We have defended our modification of the condition on PRO by considering *tough* constructions. We feel that extending CP recursion to infinitival clauses is also benign; there is nothing known about CP recursion that would restrict it to just finite clauses, so, in fact, we should treat this extension as the null hypothesis.

To the extent, then, that we have demonstrated that verb movement in Icelandic infinitival clauses can be achieved without embracing an exceptional instance of V° -to- I° , we consider our proposal to have achieved some attractiveness. But does it have any stronger virtues? In this and the following section we consider what might be construed as evidence for the proposal, as well as evidence against it.

One piece of evidence on behalf of our proposal would seem to be that it can explain why CP recursion appears to be impossible in Icelandic control infinitives. As mentioned above, we do not know of an explanation for the fact that embedded Verb Second word-order seems to be unavailable in infinitival clauses; and if this isn't due to constraints on where CP Recursion is available, then it is a fact in need of explanation. Our modification to the principle governing PRO's distribution in (39) will explain why verb second word-order is so hard to detect in these infinitivals. Because (39) prevents PRO from being governed when it is in an A-position, the obligatory movement of the verb into C° in contexts of CP recursion will create a violation of (39) in control infinitives. Thus, the ungrammaticality of examples like (40a,b) will follow from the fact that in such cases PRO will be forced into a governed A-position, in violation of (39).¹¹

¹¹The higher Specifier of CP may not contain a topicalized element either, but this is a different phenomenon: The Specifier of an overt (non-verbal) C° may never contain an overt element, although a trace is allowed. This also holds for finite clauses across the Germanic and the Romance languages. See Grimshaw (1997, p. 406) and Pesetsky (1997), where this is expressed as a high-ranking left edge constraint.

- (40) Pétur lofaði Jóni ... (Icelandic)
 Pétur promised Jón-D ...

- a. *... [_{CP} að [_{CP} á morgun fara [_{IP} PRO þó til London]]]
 b. *... [_{CP} að [_{CP} til London fara [_{IP} PRO þó á morgun]]]
 to – go after-all to London tomorrow
 (Peter promised John to go after all to London tomorrow.)

Though we've illustrated this effect with an Icelandic example, the result is more general. No control infinitive should allow for recursive CPs, unless PRO can escape the Specifier of IP. In Icelandic, and, we believe across Germanic, this can only be achieved by topicalizing PRO, thereby obscuring the presence of recursive CPs in infinitival clauses. Since control infinitives are the only infinitival clauses which are CPs, they are the only ones in which CP recursion is an option. Therefore, we derive the absence of verb second word-order in all infinitival clauses.

Another, more direct, piece of evidence in support of our proposal might be seen in the fact that verb movement in Icelandic non-finite clauses is restricted to control infinitives. It would be reasonable, on the proposal above, to suggest that the reason is that other infinitives do not have a C° at all.¹²

Holmberg (1986:156), Sigurðsson (1989:50), Sigurjónsdóttir (1989:23), and Thráinsson (1986a:257) all point out that in non-control infinitives, the infinitive cannot precede negation (*ekki*) or a sentential adverbial. They interpret this to indicate that there is no verb movement of the sort found in control infinitives within these non-finite clauses. This, in turn, suggests that the position to which the infinitival verb moves in control infinitives is not found in these infinitives. Because non-control infinitives – raising and ECM infinitives – are standardly characterized as IPs, not CPs, our proposal that the infinitival verb is moving to C° in control infinitives transparently derives this difference.

But there is some trouble with these data. Sigurðsson (1989:85-86) shows that it is actually not possible to have *ekki* anywhere within non-control infinitival constructions. Further sentential adverbials can only appear clause finally within these infinitives. This is indicated in (41)-(45).

Exceptional case marking: (Icelandic)

- (41) a. *Pétur hafði talið Maríu ekki hafa vaskað upp diskana.
 b. *Pétur hafði talið Maríu hafa ekki vaskað upp diskana.
 c. Pétur hafði talið Maríu hafa vaskað upp diskana.
 Pétur had believed María-A (have) not (have) washed up dishes-the
 (Peter had believed Mary not to have washed the dishes.)

¹²In this paper, we do not discuss modal verbs, but we assume that in all the languages discussed, the complements of modal verbs are VPs (cf. e.g. Thráinsson & Vikner 1995:sec. 4.1). For discussions of the particular properties of Icelandic modal verbs, some of which require the presence of the infinitival marked *að* in their complement, see. e.g. Thráinsson (1986a, 1993) and Thráinsson & Vikner (1995).

Raising:

(Icelandic)

- (42) a. *María hafði virst ekki hafa vaskað upp diskana.
 b. *María hafði virst hafa ekki vaskað upp diskana.
 c. María hafði virst hafa vaskað upp diskana.
 María had seemed (have) not (have) washed up dishes-the
 (Mary had seemed not to have washed the dishes.)
- (43) a. *Mér hafði virst María ekki hafa vaskað upp diskana.
 b. *Mér hafði virst María hafa ekki vaskað upp diskana.
 c. Mér hafði virst María hafa vaskað upp diskana.
 Me-D had seemed María-N (have) not (have) washed up dishes-the
 (Mary had seemed to me not to have washed the dishes.)

Causatives with let:

(Icelandic)

- (44) a. *Pétur hafði látið Maríu ekki vaska upp diskana.
 b. *Pétur hafði látið Maríu vaska ekki upp diskana.
 c. Pétur hafði látið Maríu vaska upp diskana.
 Pétur had let María-A (wash) not (wash) up dishes-the
 (Peter had let Mary not wash the dishes.)

Perception verbs:

(Icelandic)

- (45) a. *Pétur hafði séð Maríu rækilega vaska upp diskana.
 b. *Pétur hafði séð Maríu vaska rækilega upp diskana.
 c. Pétur hafði séð Maríu vaska upp diskana rækilega.
 Pétur had seen María-A (wash) carefully (wash) up dishes (carefully)
 (Peter had seen Mary carefully wash the dishes.)

This is a peculiarity of Icelandic; Danish, for example, allows negation (*ikke*) in clauses of this type, as (46) indicates.¹³

- (46) a. Marie ser ud til ikke at være i godt humør. (Danish)
 b. Marie ser ud til at være i godt humør.
 Marie sees out to (=seems) (not) to be in good mood
 (Mary seems not to be in a good mood.)

Consequently, the evidence for the absence of verb movement typically offered for Icelandic non-control infinitives is undermined. For some unknown reason, non-control infinitives in

¹³In all of (41)-(45), Icelandic *ekki* ‘not’ can be exchanged for *aldrei* ‘never’ or *oft* ‘often’, and in (46) Danish *ikke* ‘not’ for *aldrig* ‘never’ or *ofte* ‘often’, with no consequences for the grammaticality status of any of the examples.

Icelandic are so anemic, that they do not allow for the kinds of adverbs usually used to determine whether verbs have moved or not.

Nonetheless, we believe some evidence for the absence of verb movement in Icelandic ECM infinitives can be found in the behavior of other kinds of adverbs. Consider, for instance, *aðeins* ‘only’. This adverb can sit within ECM infinitives, as indicated by the grammaticality of (47).

- (47) Pétur hafði talið Maríu aðeins borða kæstan hákarl. (Icelandic)
 Peter had believed Mary only eat rotten shark
 (Peter had believed Mary only to eat rotten shark.)

But, interestingly, it cannot follow the main verb, as in (48).

- (48) *Pétur hafði talið Maríu borða aðeins kæstan hákarl. (Icelandic)
 Peter had believed Mary eat only rotten shark
 (Peter had believed Mary only to eat rotten. shark.)

In this respect, the position of *aðeins* in ECM infinitives is just the opposite of its position in control infinitives, where it must follow the infinitival verb:

- (49) a. *Pétur hafði reynt að aðeins borða kæstan hákarl. (Icelandic)
 Peter had tried to only eat rotten shark
 b. Pétur hafði reynt að borða aðeins kæstan hákarl.
 Peter had tried to eat only rotten shark.
 (Peter had tried to only eat rotten shark.)

Hence, with adverbs like *aðeins* there is evidence that, as originally claimed, infinitival verbs do not move in Icelandic, except in control infinitives. Our proposal accounts for this; only control infinitives are CPs, and therefore, only control infinitives are susceptible to the recursive CPs that we claim are responsible for verb movement in these contexts.

3.2. Cross-Linguistic

The final argument we will consider on behalf of the proposal concerns cross-linguistic variation. It remains an open question why English control infinitives resist having (overt) complementizers, while the same is not true in many other languages. Our proposal has already expressed a way of capturing this difference with Icelandic control infinitives. The wider availability of CP Recursion in Icelandic makes it possible for PRO to escape being governed by a complementizer by Topicalizing. Thus, the presence of PRO in Icelandic control infinitives is not incompatible with the presence of a complementizer in these infinitives, and Icelandic control infinitives have evolved to contain one. In English, by contrast, CP Recursion is never available in infinitival clauses because it is not possible to satisfy the accompanying requirement that verbs move to C° in recursive CPs. The presence of *to* between the underlying position of the verb in English and C° means that verbs are unable to make it to C° without incurring a violation of the Head Movement Constraint. Thus, those infinitival clauses which are equipped with

complementizers cannot rescue a following PRO by Topicalizing it. Instead, English has evolved to include a complementizer deletion rule.

Our proposal about Icelandic control infinitives therefore makes a partial claim about how departures from the ban on complementizer-PRO sequences happen. It claims that (39), which generates this effect, is not the source of variation, nor is the variation to be located in some qualifier concerning which complementizers “count.” Instead, languages which appear to violate (39) actually don’t, they simply have devised means different from that employed by English (namely, complementizer deletion), to separate PRO and the complementizer. In Icelandic, this means is Topicalization. One way of testing the proposal, then, is to see if this consequence is borne out. Are the languages which allow complementizers in control infinitives just those which have properties that would allow PRO and this complementizer to be far enough apart for government to fail? This is the task of this section.

3.2.1. Germanic

We begin with an examination of the Germanic languages. Because our proposal is that the ban on governed PRO holds in the same way in both English and Icelandic, we think it reasonable to require that it holds in the same way throughout Germanic.

We will argue that none of these infinitival markers are found in C° in Germanic. We think it not unlikely that this reflects the fact that (39) holds in all of these languages.¹⁴

There is just one other Germanic language which has been argued to group with Icelandic and English with respect to its control infinitives. Platzack (1986a) argues that *att* is in C° in the control infinitives of Swedish. Yet, as we saw in (8) (repeated here as (50)), Swedish control

¹⁴The infinitival marker in the verb-final languages is always part of the clause final verbal cluster, and therefore plainly not in C° . Yiddish, which is otherwise parallel to Icelandic, places its infinitival marker below I° , and therefore, like English, shows no Verb Second word order in infinitival clauses because of the Head Movement Constraint. Platzack (1986b) shows that the infinitival marker in Danish and Norwegian is not in C° ; the Swedish case is discussed in the text.

infinitives lack the verb movement¹⁵ we have argued is indicative of CP Recursion in these contexts.

- (50) a. *Maria lovade att läsa inte boken. (Swedish)
 b. Maria lovade att inte läsa boken.
 Maria promised to (read) not (read) book-the
 (Mary promised to not read the book.)

But Swedish also does not appear to avail itself of complementizer deletion in these contexts in the way that English does (i.e. Swedish *att* may not be deleted in (50) the way that English *for* may be deleted in (25)). Swedish therefore looms as a counterexample to our proposal. Unless some means other than CP Recursion or complementizer deletion can be found to circumvent the apparent violation of (39) in (50), our thesis is lost.

Let us begin by concentrating on the difference between Swedish and Icelandic with respect to CP recursion. If we grant that in both languages, the infinitival marker is in C°, and that verb movement in infinitival clauses correlates with CP recursion, then Swedish control infinitives have the following structure:

- (51) Maria lovade [_{CP} [_{C°} att] [_{IP} PRO inte läsa boken]] (Swedish)
 Maria promised to not read book-the

How does this survive (39)?

We will consider, and dispense with, a variety of possibilities; and then return to reconsider the evidence adduced for treating the Swedish infinitival marker (*att*) as a complementizer. We do not consider this evidence compelling.

¹⁵Cecilia Falk (p.c.) points out that there is no verb movement in Old Swedish control infinitives, as seen by the infinitivals following the negations in (i) and (ii):

- (i) Siunda är at ei bryta skriptamal (Old Swedish)
 Sin is to not make(?) confession
 (from Ett fornsvenskt legendarium, 1276-1307, Stephens 1847:166)
- (ii) En aff them hafdhe lovat aldrih äta köt um löghordagin
 One of them had promised never eat meat on Saturdays
 (from Järteckenbocken, 1385, Klemming 1877:119)

We are obliged to assume that one of the methods we advocate in the text for allowing such a configuration was used in Old Swedish; we are, unfortunately, unable to tell which.

A different kind of complication is presented by 16th century Danish, which, according to Falk & Torp (1900:299-300), could have the modern Icelandic word order with auxiliaries and the modern (and old) Swedish word order when no auxiliaries were present.

If *att* really is in C° , could (39) still be satisfied in Swedish by using the strategy English employs? Could it be that, despite appearances, the relevant difference between Swedish and Icelandic is actually the availability of complementizer deletion in Swedish? This might be suggested by the fact that the Icelandic infinitival marker, *að*, can never delete (as mentioned above), but the Swedish infinitival marker, *att*, may:

- (52) a. Maria lovade att PRO läsa artikeln. (Swedish)
 b. Maria lovade PRO läsa artikeln.
 c. María lofaði að PRO lesa greinina. (Icelandic)
 d. *María lofaði PRO lesa greinina.
 Maria promised to read article-the
 (Mary promised to read the article.)
 ((32a,b) based on Holmberg 1990:238, (3b))

If we suppose that infinitival complementizer deletion is simply absent from Icelandic, but present in Swedish either overtly or covertly, then complementizer deletion might be able to rescue PRO from government by a complementizer in Swedish where only CP recursion can in Icelandic. In those cases where C° appears to hold the infinitival marker, we might conjecture that complementizer deletion applies at LF. Supposing that the anti-government requirement on PRO (i.e., (39)) need be satisfied only at LF, we then predict that Swedish control infinitives can both have *att* in C° (overtly) and fail to invoke CP recursion in just those cases where *att* can delete at LF. This analysis, then, would have Swedish display at LF what surfaces in English infinitives (with Swedish *att* corresponding to English *for*):

- (53) a. *Sally wants [_{CP} for [_{IP} PRO to go]].
 b. Sally wants [_{CP} [_{IP} PRO to go]].

We don't believe this can be the reason Swedish appears to violate the anti-government requirement on PRO, however. One immediate difficulty is that it requires an account of the difference between the phenomena illustrated by (53) in English and (52a,b) in Swedish. As (53a) indicates, we cannot allow the anti-government requirement to be satisfied at LF in English, as the strategy being explored here would require of the Swedish (52a). If LF Complementizer Deletion were sufficient, then it should be possible to create an LF from (53a) by Complementizer Deletion that would be identical to the grammatical (53b), incorrectly predicting (53a) to be acceptable. We don't know what this additional component to the account would be.

Another difficulty is that it would require positing complementizer deletion at LF in configurations where, judging from surface conditions on complementizer deletion, we would not expect it to be possible. For example, as in English, complementizer deletion is blocked in Swedish in CPs that are complements to nouns, and yet it is possible to find an infinitival clause in this position in Swedish:

- (54) a. Att Christian saknade förmåga att skämmas, visste hon. (Swedish)
 b. *Att Christian saknade förmåga skämmas, visste hon.
 That Christian lacked ability (to) be-ashamed, knew she
 (That Christian lacked the ability to be ashamed, she knew.)
 ((54a) from Hulthén 1944:279)

Similarly, it is not possible to find complementizer deletion overtly in CPs that are complements to adjectives in Swedish. Yet, once again, it is possible to find a control infinitival in this position:

- (55) a. Sigyn var alls inte ovillig att svara. (Swedish)
 b. *Sigyn var alls inte ovillig svara.
 Sigyn was at-all not unwilling (to) answer
 (Sigyn was not at all unwilling to answer.)
 ((55a) from Hulthén 1944:276)

We conclude that complementizer deletion, even at LF, cannot be responsible for the availability of the infinitival marker in C° in Swedish control infinitivals.

Kayne (1991:677, fn 75) makes a suggestion about how Icelandic *að* manages to avoid violating (39) that might be considered for our problem with Swedish. He proposes that the *að* in Icelandic control infinitives can be in the Specifier of CP. We have not embraced this suggestion for Icelandic (see arguments against it in Thráinsson 1993:192-196); but might it be correct for Swedish control clauses? If Swedish *att* were in Specifier of CP, rather than C° , then it would not govern the following PRO, and no violation of (39) would ensue.

This suggestion isn't workable either, however. If *att* were in Specifier of CP in control infinitivals, we should expect extractions of adjuncts out of control infinitivals to be impossible. That is, we should expect such extractions, as in (56a), to behave like the *wh*-island violation in (56b).

- (56) a. På vilket sätt₁ har du lovat [_{CP} t₁ att tillaga grönsakerna t₁]? (Swedish)
 In which way have you promised to cook vegetables-the
 (In which way have you promised to cook the vegetables?)
 b. *På vilket sätt₁ skulle du vilja veta [_{CP} vilka grönsaker₂ han har tillagat t₂ t₁]?
 In which way should you want (to) know which vegetables he has cooked
 (In which way should you want to know which vegetables he has cooked?)

This is not the case.

Furthermore, in infinitival relative clauses, Specifier of CP would have to contain both *att* and an empty operator:

- (57) a. Jag har ett förslag₁ [_{CP} OP₁ att [_{IP} PRO göra dig t₁]]. (Swedish)
 b. *Jag har ett förslag₁ [_{CP} OP₁ [_{IP} PRO göra dig t₁]].
 I have a suggestion to make you
 (I have a suggestion to make to you.)
 ((43a) from Thorell 1973:145)

For a CP Specifier to host two phrases, in the way this example would require, is not attested anywhere else in Germanic.

We therefore abandon this method of squaring Swedish control infinitives with our hypothesis.

Instead, let's reconsider the evidence that infinitival *att* is in C°. We do not think this evidence is conclusive.

While the structure in (51) above, with *att* in C°, is the one which is generally assumed, (cf. e.g. Platzack 1986b:123, Holmberg 1986:154, Beukema & den Dikken 1989:66 and Sigurðsson 1989:52), we would like to suggest that Swedish *att* is, like its Danish and Norwegian counterparts, lower than C°:

- (58) Maria lovade [_{CP} [_{IP} PRO [_{I°} att] inte läsa boken]]. (Swedish)
 Maria promised to not read book-the

If this is correct, then *att* does not govern PRO, as PRO is in Specifier of IP, and Swedish is not a counterexample to the anti-government requirement.

One reason cited for considering *att* to be in C° is that it occurs to the left of negation and sentence adverbials. In this respect, *att* differs from the infinitival markers in Danish (*at*) and Norwegian (*å*):

- (59) a. Maria lovade att inte läsa boken. (Swedish)
 b. Marie lovede ikke at læse bogen. (Danish)
 c. Marie lovet ikke å lese boken. (Norwegian)
 Maria promised (to) not (to) read book-the
 (based on Holmberg 1986:154, (46b-d))

When these facts were originally analyzed, infinitival clauses were thought to have no more than two potential positions for infinitival markers: I° and C°. But this is no longer the case. Since Pollock (1989), infinitival clauses are thought to host at least one additional position, T°. Moreover, on Pollock's framework, sentence negation lodges between I° and T°. Thus, that *att* precedes negation is no longer a compelling reason for placing it in C°. It could instead be that *att* occupies I°, which precedes negation. The infinitival markers in Danish and Norwegian could then be assigned to T°, which follows negation. As for sentence adverbials, we must assume that they too are lodged between I° and T° in Scandinavian, and in this respect differ from the situation Pollock describes for French. Indeed, it seems certain that the relative order of negation and sentence adverbials that Pollock argues for in French (and see also Belletti 1990 and Chomsky

1991) must be different in Scandinavian. As pointed out by Hansen (1980: 58), among others, negation follows rather than precedes sentence adverbials in Danish, for example.

As a second argument for *att* being in C°, it is pointed out that it is impossible for *att* to occur in ECM and in raising constructions (cf. e.g. Platzack 1986b:127). This would be explained if *att* were necessarily in C°, since these are the infinitives which are standardly taken to be IPs, and not CPs.

This first thing worth noting in this connection is that this description of where *att* falls is flawed. According to Hulthén (1944:248), Holmberg (1986:159) and Platzack (1986b:135, fn. 2) *att* is also possible in these infinitival clauses, at least in colloquial Swedish and in various dialects. Interestingly, when *att* occurs in ECM constructions, it cannot be in C°, as Holmberg (1986:159) points out, because it follows the embedded subject:

- (60) a. Jag anser Peter att vara dum
 b. *Jag anser att Peter vara dum
 I consider (to) Peter (to) be stupid
 (I consider Peter to be stupid.)
 (based on Holmberg 1986:159, (61b))

Furthermore, as our reanalysis has it, *att* has to be in I° rather than further down in ECM infinitives, because though it follows the subject, it precedes negation:

- (61) a. Han måste anse Peter att inte vara lika klok som jag. (Swedish)
 b. *Han måste anse Peter inte att vara lika klok som jag
 He must consider Peter (to) not (to) be as clever as I
 (He must consider Peter not to be as clever as me.)

When *att* occurs in a raising construction like (63a), which is the raising counterpart of (62a), it is not immediately clear whether it precedes or follows the Specifier of IP, of course, since this Specifier position contains a trace.

- (62) a. Det var inte långt ifrån att hon blev antagen. (Swedish)
 b. Det var inte långt ifrån hon blev antagen.
 It was not far from that she was admitted
 (She was very close to being admitted.)
 ((62a) from Gunnarson 1989:2, (3))

- (63) a. Hon₁ var inte långt ifrån t₁ att bli antagen.
 b. *Hon₁ var inte långt ifrån t₁ bli antagen.
 She was not far from to be admitted
 (She was very close to being admitted.)
 ((63a) from Gunnarson 1989:1, (1))

But it is probable that *att* follows the Specifier in these contexts, since it would otherwise create a *that*-trace violation, as it does in (64).

- (64) *Vem_i sa du att t₁ hade kommit? (Swedish)
 Who said you that had come
 (Who did you say that had come?)
 (from Holmberg 1986:123, (127))

The data from these registers or dialects, then, suggests that Swedish *att* is in I°_o, not C°_o. But what of those dialects or registers in which *att* is blocked in ECM and raising infinitives? We do not consider this decisive evidence for the complementizer status of *att* because there exist alternative accounts of this distribution. Consider, for instance, the well-known, if poorly understood, fact that English infinitival *to* cannot be found in ECM contexts invoked by perception and causative verbs:

- (65) a. *I saw Maggie to have left.
 (compare: *I saw Maggie leave.*)
 b. *I made Maggie to laugh.
 (compare: *I made Maggie laugh.*)

These sentences are ungrammatical not because *see* and *make* do not select *to*-infinitival clauses, since the same sentences are grammatical under the Passive operation; compare (66).

- (66) a. Maggie was seen to have left.
 b. Maggie was made to laugh.

Instead, it appears that there is some unknown incompatibility in these constructions between the ECM phenomenon and the presence of *to*. Without a better understanding of this process, we cannot be sure that it isn't also responsible for the absence of *att* in the ECM infinitives of the relevant versions of Swedish. Perhaps it accounts for the absence of *att* in raising infinitives as well. We think this other mechanism, whatever it is, is a more likely source for *att*'s surprising absence in these contexts, given that *att* reappears in these contexts in colloquial speech in just the position it should if it is in I°_o, not C°_o.

If this conclusion is correct, then the only two places where Germanic has control infinitives with an overt complementizer are *for* in English and *að* in Icelandic. And these are just the languages in which we have seen evidence of processes that allow the PRO in the control infinitive to avoid being governed by the complementizer: in English, it is complementizer deletion, in Icelandic, it is CP Recursion and topicalization. This is just what we would expect if, as claimed, the anti-government condition on PRO holds throughout Germanic.

3.2.2. Romance

While our claim about Icelandic control infinitives makes a clear prediction about the typology of Germanic control infinitives – that they will show the effects of the anti-government requirement in (39) – it is less clear what predictions it makes about control infinitives in other language families. Without knowing what the underlying source of the anti-government

requirement is, it is not possible to judge how this requirement might itself be subject to language variation. We have surmised that it should not be expected to vary among the Germanic languages because we have credited two very different members of this family with it: English and Icelandic. But this does not allow us to draw parallel conclusions about what to expect of languages outside the Germanic family.

And, in fact, there are families which are thought to include many languages that tolerate control infinitives with overt complementizers. Moreover, the verb movement that we have tied to CP recursion in Icelandic is not present in the infinitives of these languages. Romance is one of these. If the presence of control infinitives with overt complementizers but without CP recursion is indicative of a violation of (39), then the presence of these languages in Romance suggests that Romance and Germanic might differ in this respect.

Even though Romance is therefore not an appropriate testing ground for our proposal, we would like to point out here that many Romance languages have a process that is just of the right sort to allow control infinitives with complementizers to avoid violating (39). If it is not accidental that this process is found in a language family that has many exemplars of control infinitives with complementizers – that is, if this coincidence of properties is actually part of a correlation – then it speaks on behalf of the program we are proposing.

French and Italian are exemplars of the Romance languages which are thought to have control infinitives with something overt in their C° position. Kayne (1984) argues that the French infinitival marker *de* ‘to’ is in C° (cf. (12) above), and differs, therefore, from English *to*. Four supporting arguments are given: (1) *de* is impossible in raising (its presence would cause a *that*-trace violation (1984:106)); (2) *de* is impossible in ECM (1984:107, 111); (3) *de* must precede negation, (1984:108), and (4) *de* is not compatible with a *wh*-element in the Specifier of CP (explained by the so-called “doubly filled Comp filter” (1984:105)).

Kayne (1991) revises this conclusion somewhat in an effort to bring French infinitival clauses in line with the English infinitives. Noting that if *de* is in C° it would govern PRO and therefore violate the anti-government requirement, he suggests that *de* is in Specifier of CP, rather than its head (cf. Kayne (1991:668)). This also gives a more direct account for the fourth property, the incompatibility *de* has with a *wh*-element in Specifier of CP:

- (67) a. *Jean cherche quelqu’un avec qui de parler. (French)
 b. Jean cherche quelqu’un avec qui parler.
 c. *Gianni cerca qualcuno con cui di parlare. (Italian)
 d. Gianni cerca qualcuno con cui parlare
 John looks-for someone with whom (to) talk
 (John looks for someone with whom to talk.)
 (based on Kayne 1984:105, (9), (10), (20), (21))

The Specifier of CP cannot hold *avec qui* or *con cui* if it must also contain *de* or *di*.

However, the speculation that *de* and *di* is in Specifier of CP suffers from the same difficulty we reported for the parallel proposal concerning Swedish *att*. Adjunct extractions out of these infinitivals should be impossible; the infinitival clauses in (68) should behave like the *wh*-islands in (69), and this isn't so.

- (68) a. Comment₁ as -tu promis [CP t₁ de cuire les légumes t₁]? (French)
 b. Come₁ hai promesso [CP t₁ di cucinare la verdura t₁]? (Italian)
 How have (you) promised to cook the vegetables
 (How have you promised to cook the vegetables?)
- (69) a. *Comment₁ voudrais -tu savoir [CP quoi₂ cuire t₂ t₁]? (French)
 b. *Come₁ vorresti sapere [CP che cosa₂ cucinare t₂ t₁]? (Italian)
 How would (you) know what cook
 (How would you know what to cook?)

Let's abandon this hypothesis, therefore.

Similarly, we should not consider rescuing *de* and *di* from incurring an anti-government violation by letting them delete at LF. This proposal has the same difficulty the parallel proposal for Swedish *att* has. Complementizers are unable to (overtly) delete from the clausal complements to nouns, but infinitival clausal complements to nouns and adjectives can nonetheless host PRO subjects in French and Italian.

- (70) a. Jean a peur de manquer le train. (French)
 b. *Jean a peur manquer le train.
- c. Gianni ha paura di perdere il treno. (Italian)
 d. *Gianni ha paura perdere il treno.
 Jean has fear (to) miss the train
 (John feared missing the train.)
- (71) a. Jean est capable de parler l'anglais. (French)
 b. *Jean est capable parler l'anglais.
- c. Gianni è capace di parlare l'inglese. (Italian)
 d. *Gianni è capace parlare l'inglese.
 Jean is able (to) speak English
 (John is able to speak English.)

Because there is no reason why the conditions on complementizer deletion should differ in the surface representation and at LF, we will abandon this solution too.

If French and Italian are subject to the anti-government requirement on PRO, they must have a means of distancing their PROs from *de* and *di* that we have not yet encountered.

That means might just be the conditions that determine where subjects may surface. Those conditions appear to be slightly different in Romance and Germanic, with the consequence that subjects may surface in Romance lower than in Germanic. If that trend carries over to the position of PRO, then we would expect Romance to tolerate control infinitives with complementizers – just what we find.

Recall that one of the two features of Icelandic which force CP recursion in infinitival clauses is that PRO is driven from its underlying (VP-internal) position into the Specifier of IP, where it gets Case. In general, subjects in Icelandic get their Case only from this position, and consequently subjects surface very high in the clause. (There is an important caveat to this which we address immediately below.) But the situation in French and Italian is different. Subjects in these languages have the option of surfacing much lower in their clause. Therefore, it is reasonable to conclude that the Case filter can be satisfied for subjects in Italian and French without their raising all the way to Specifier of IP.

That this is a feature which distinguishes French and Italian from the Scandinavian languages and English is suggested by the relative freedom with which these languages allow postverbal subjects. We believe that one of the things that causes subjects to be postverbal in Romance is their relatively low position. On one kind of account, for example, subjects end up following the verb, or series of verbs, through the combined effects of the subject's remaining relatively low – perhaps in its original VP-internal position, for example – and the leftward movement of the verb or verbs past this position (see, for example, Ordóñez 1997). On other accounts, postverbal subjects are either in a position right-adjoined to the VP they are related to, or are in the Specifier of this VP (see, for example, Rizzi 1982, Koopman & Sportiche 1991 and Freidemann 1997). On both styles of accounts, then, to be a postverbal subject in Romance is to be a subject in a position lower than Specifier of IP. Thus, the wider availability of postverbal subjects in French and Italian than in the (comparable) verb-initial Germanic languages indicates that subjects in French and Italian are released from the onus they feel in Germanic to raise to Specifier of IP.

That postverbal subjects in Romance are indeed lower than preverbal ones is generally acknowledged to be responsible for their greater freedom of extraction. In particular, the possibility of postverbal subjects to be extracted across a complementizer is credited to their being governed by the main verb, hence, being lower than when in preverbal position. There is evidence of a more direct sort as well. In Italian, for instance, it can be shown that when a postverbal subject follows another argument of the verb, it is within that argument's c-command domain. This, for example, is what is indicated by the successful binding of the pronouns by *ogni ragazzo* in (72).

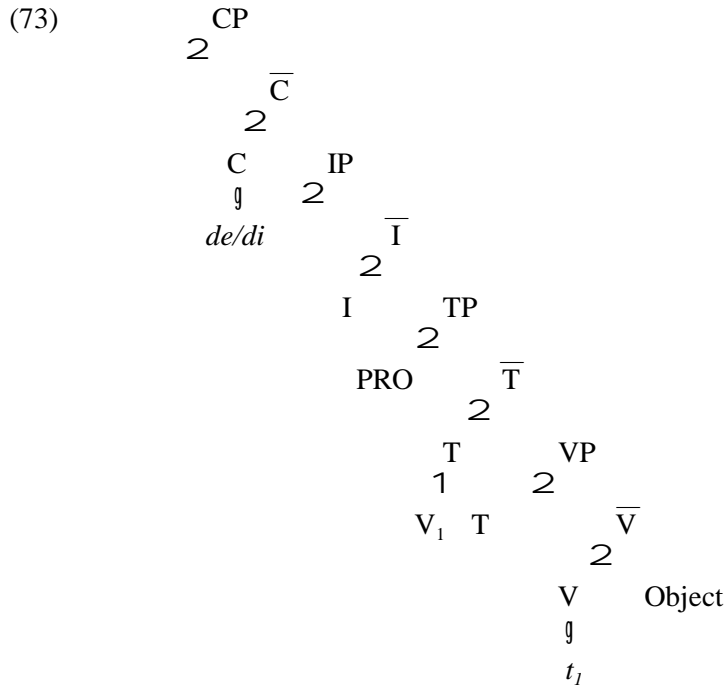
- (72) a. Questo libro, l'ha regalato [a ogni ragazzo]₁ sua₁ madre.
this book it-has given to every boy his mother
(His mother has given this book to every boy.)
- b. Questo libro, l'ha regalato [a ogni ragazzo]₁ la propria₁ madre.
this book it-has given to every boy the self mother
(His own mother has given this book to every boy.)
(Ordóñez 1997: 115 (127))

For *sua* and *propria* to fall within the scope of *ogni ragazzo* in these examples, the subject will have to be allowed to remain low enough in the phrase marker for it to fall within the c-command domain of the indirect object.

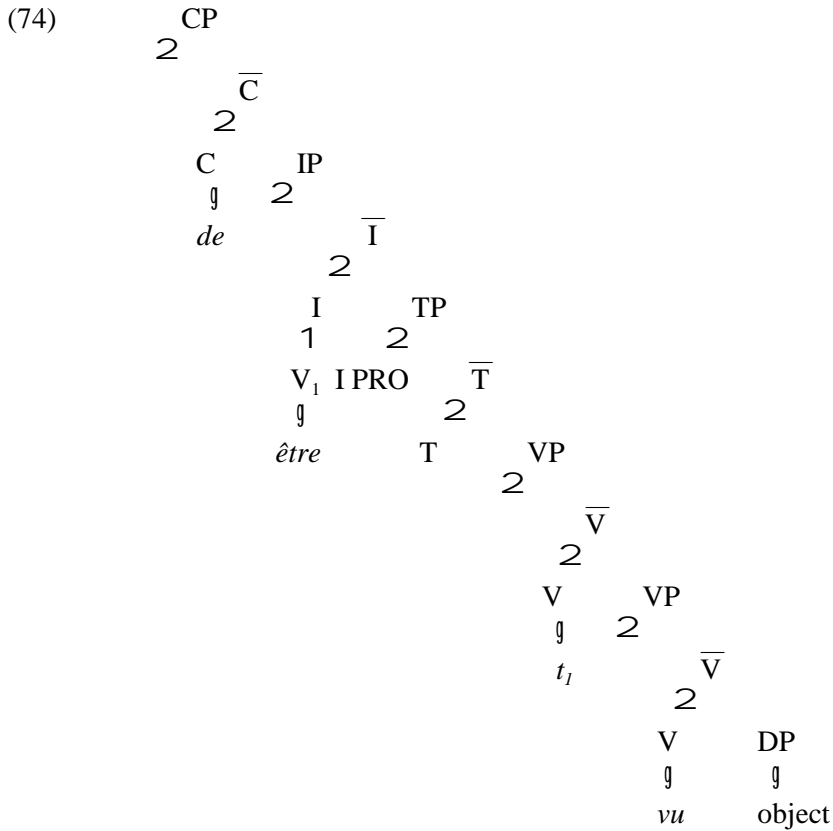
What these phenomena indicate, then, is that subjects in French and Italian are not forced by the Case filter to move into Specifier of IP in finite clauses. Since we see no reason why this should be different for the PRO subjects of infinitival clauses, we conclude that there is nothing that drives PRO into a position where it is governed by C°. This, presumably, is what allows these languages to have infinitival clauses with overt complementizers.

Of course, for this scenario to preserve the anti-government requirement, there must be another position within infinitives in which PRO may sit ungoverned. We do not think it likely that this position is actually the Specifier of VP. This is because of Pollock's (1989) evidence that verbs in French infinitival constructions move into T°. Belletti (1990) makes a similar argument for Italian infinitival clauses. This would bring the verb into a position from which it governs PRO. We suggest, therefore, that PRO in these clauses moves into Specifier of TP, as shown in (73).

EMBEDDED VERB SECOND IN INFINITIVAL CLAUSES



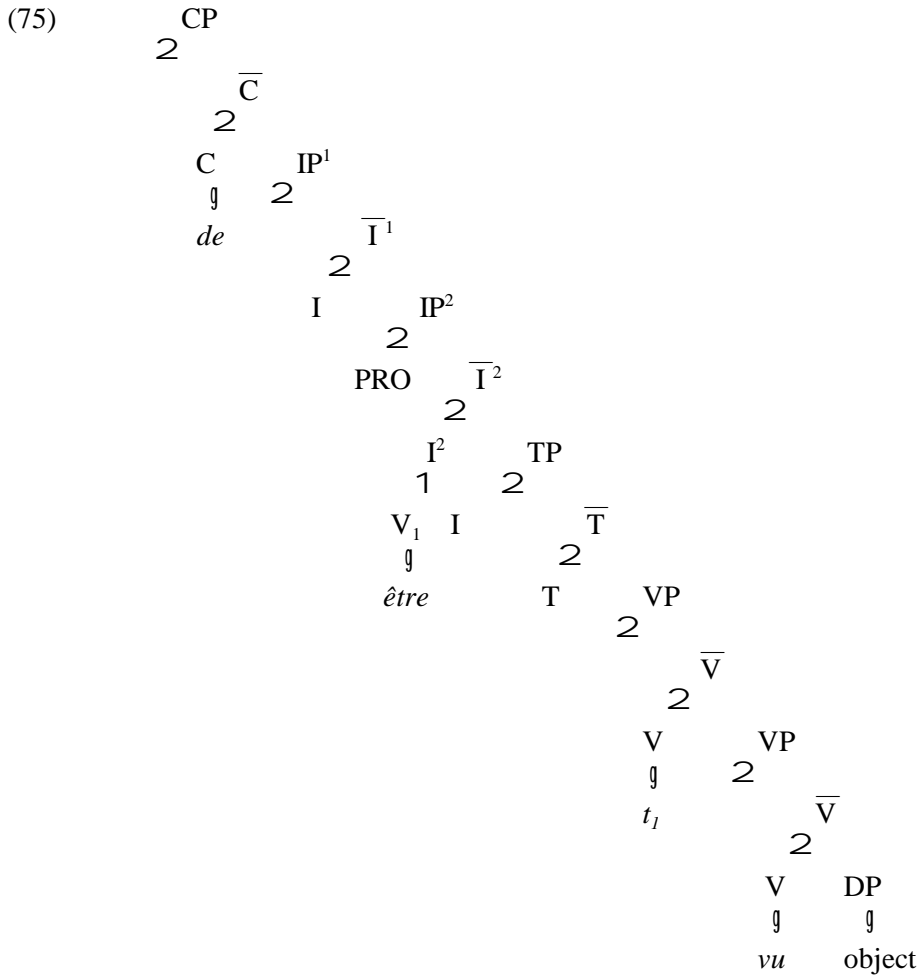
The situation in compound tenses is only somewhat more complex; here, the auxiliary verb is able to move into I°, cf. Pollock (1989:373). Thus, PRO cannot in these cases move into Specifier of TP to avoid government, as shown in (74).



So, when these two cases are considered together, our proposals will not allow PRO to uniformly occupy either Specifier of IP or Specifier of TP in control infinitives.

There are a variety of ways in which the details of this proposal could be worked out to navigate these issues. We could, for instance, simply allow PRO to reside in whichever Specifier remains ungoverned in any particular configuration of auxiliary and main verbs. For concreteness, we will instead adopt Belletti's (1990:84) suggestion that there are two functional projections between the underlying position of the auxiliary verb and the underlying position of the main verb. If the main verb moves only to the lower of these two, then PRO can move to the Specifier of this functional projection and remain ungoverned, as shown in (75).

EMBEDDED VERB SECOND IN INFINITIVAL CLAUSES



Whether this is the correct execution of the idea will depend on how our understanding of infinitival clause structure matures.

In general, then, if PRO can find an ungoverned position among the Specifiers of the functional projections that make up clauses in Romance – perhaps in the way indicated – then because it is not forced to move into Specifier of the highest IP, there is no pressure to invoke a recursive CP to protect PRO from government by a complementizer. This will account for the difference between Germanic and Romance with respect to the availability of complementizers in control infinitives.

4. A PROBLEM

There is one unwelcome consequence of our analysis. If control infinitives in Icelandic hold hidden topicalizations, then, like other embedded topicalizations, they should be islands for extraction. That this is true of embedded topicalizations is indicated by the relative badness of (76).

- (76) Ég spurði ...
I asked ...

- | | | | | | | | |
|----|------------------|-------|------------------|-------|------------------|-------|-------|
| | CP _{sp} | C° | CP _{sp} | C° | IP _{sp} | Adv | V° |
| a. | *... af hverju | hefði | þessa bók | | Helgi | oft | lesið |
| b. | ??... af hverju | | þessa bók | hefði | Helgi | oft | lesið |
| | ... why | (had) | this book | (had) | Helgi | often | read |

What makes each of these examples ungrammatical is that *af hverju* ('why') has been moved past a topicalized argument. Since this is precisely what we claim has happened in control infinitives, we should expect in control infinitives too that *wh* Movement will be blocked. But we have already seen that this is not the case; in (77), for example, is a case where a null interrogative pronoun has moved and successfully passed a topicalized PRO (as shown).

- (77) Þetta er góð ástæða [_{CP} OP₁ [_C að [_{CP} PRO₂ [_C lesa [_{IP} t₂ [_T t_v aldrei [_{VP} danskar bækur t₁]]]]]]]].
this is good reason to read never Danish books
(This is a good reason to never read Danish books.)

More generally, we should expect control infinitives in Icelandic to be islands for extraction; and this is quite wrong:

- (78) a. Hvernig₁ lofaðir þú [að PRO búa alltaf grænmetið til t₁]?
How promised you to prepare always vegetable-the PRT
(How did you promise to always prepare the vegetables?)
- b. Hvernig₁ lofaði Pétur Jóni [að PRO fara til London á morgun t₁]?
How promised Pétur Jón-D to go to London tomorrow
(How did Peter promise John to go to London tomorrow?)
- c. Með hvaða flugvél₁ lofaði Pétur Jóni [að PRO fara til London t₁] ?
With which airplane promised Pétur Jón-D to go to London
(With which airplane did Peter promise John to go to London?)
- d. Hvenær₁ lofaði Pétur Jóni [að PRO fara til London t₁] ?
When promised Pétur Jón-D to go to London
(When did Peter promise John to go to London?)
- e. Á morgun₁ lofaði Pétur Jóni [að PRO fara til London t₁].
Tomorrow promised Pétur Jón-D to go to London
(Tomorrow, Peter promised John to go to London.)

What underlies island effects is not yet completely known. A currently popular approach to them, however, derives from Rizzi's (1990) Relativized Minimality condition. (See, for example, Chomsky 1995 for some developments of this approach.) On Rizzi's theory, the ungrammaticality of examples such as (76) derives from a condition that prevents a term from moving past a

possible “landing site,” where these are defined in terms of Argument (A) and non-Argument (\bar{A}) positions. Thus, (76) is ungrammatical because *af hverju* (‘why’) has moved past an \bar{A} -position (occupied by *þessa bók* (‘this book’)) to get to the A-position it occupies. For the kind of examples we are interested in, we can take this condition to be rendered as (79).

- (79) Let α be A or \bar{A} . No XP may move to an α -position, γ , if there is a YP in an α -position such that γ c-commands YP and YP c-commands XP.

If this is correct, then our puzzle resolves to this: why doesn’t PRO in (77) count as YP in (79)? The answer we would like to propose is that PRO does not exist at the point in the derivation at which (79) holds. We envision a derivation in which PRO is generated in the position in which it receives its θ -role, then moves into the position at which the anti-government requirement (= (39)) is satisfied, and then deletes. The condition in (79) can be satisfied once all these events have transpired. So, for example, if (79) is a condition on the overt movement of the relative pronoun in (77), then PRO will have overtly topicalized (to satisfy (39)) and deleted before the relative pronoun moves. As Chierchia (1984: 424) points out, we might see the fact that PRO does not interrupt *wanna* contraction in the same way that the traces of *wh*-phrases do as evidence that PRO is indeed absent from the surface representation in the way just proposed.

Evidence that PRO deletes might also be gleaned from the facts that are sometimes cited in favor of treating control infinitives as something less than a full clause. Williams (1980), for example, argues that the apparent absence of a subject in control infinitives reflects their actual absence; he treats control infinitives as open predicates which otherwise have the syntax of clauses. And there are ways in which control infinitives do in fact resemble VPs more than they do full clauses. For example, in contexts of VP Ellipsis, control infinitives are related to their controller in the same way that VPs are. Just as *Sam* is necessarily related sloppily to the elided VP in (80a), so also is *Sam* sloppily related to the subject position of the elided infinitive in (80b).

- (80) a. Jerry is nice, and Sam is [_{VP}], too.
 b. Jerry tried to be nice, and Sam did [_{VP}], too.
 c. Jerry believes himself to be nice, and Sam does [_{VP}], too.

That is, the subject of *nice* in the second conjunct in (80a) must be *Sam*, not *Jerry*; and similarly, the subject of *to be nice* in the second conjunct of (80b) must be *Sam* and not *Jerry*. In this respect, then, the hidden subject of control infinitives is different than other, overt, subjects of infinitival clauses. In (80c), for example, the subject of *to be nice* in the second conjunct can be *Jerry: himself* can get a strict interpretation in this ellipsis. So, in this important respect, the relationship an argument has to the subject position of the infinitive it controls is not like the relationship between an argument and an anaphor it binds.

There are other ways in which control infinitives are not like clauses with anaphoric subjects. One, discussed in Chierchia (1984), concerns *it* anaphora. Chierchia notes that when the antecedent to *it* is a full clause, as it is in (81), it allows for a kind of strict reading for the pronouns inside that clause.

- (81) John desires himself to become chairman of the department, and Mary desires it too.
(based on Chierchia 1984: 419 (26))

What (81) reports is that Mary desires for John to become chairman of the department; *it* refers to *himself* (=John) *to become chairman of the department*. But where the antecedent to *it* is an obligatory control clause, as in the gerund in (82), this kind of reading is not available.

- (82) John practiced swimming regularly for two years and Bill practiced it for three.
(Chierchia 1984: 421 (32))

Instead, *it* invokes a sort of sloppy reading in this case; what (82) reports Bill practiced for three years is Bill's (not John's) swimming. Chierchia argues that this is because the control clause in (82) denotes a property, and it is this property which *it* refers to. By contrast, the infinitival clause in (81) refers to a proposition, to which *it* may refer. So, again, here is evidence that control clauses are different semantic objects than full clauses. And, in fact, again control clauses seem to be more like plain VPs, which also licence only a sloppy reading under *it* anaphora:

- (83) Sally ran the Boston marathon, and Sammy did it too.

Just as in (82), the *it* in (83) refers to (something like) a property; in this case, the property of running the Boston marathon. What the second conjunct of (83) says, then, is that Sammy did Sammy's (not Sally's) running of the Boston marathon.

These sorts of facts suggest that control clauses should be of the same semantic type as VPs, and should compose semantically with their controller in much the same way that VPs do with their subjects. (And, given the contrasts above, we should also conclude that this cannot be achieved by taking the controller/subject to corefer with an anaphor that the control clause/VP contains.) We assume that VPs are related to their subjects by way of a trace; the subject moves out of its VP and leaves a trace whose interpretation mediates the composition of subject and VP. The parallelism reviewed above suggests that we should do the same for control clauses and their controllers. But, in this case, we will not want the trace within the control clause to arise from moving the controller out of that clause because this would destroy the distinction between control and raising clauses. Instead, let us adopt a solution to this dilemma that exploits a suggestion in Heim & Kratzer (1998: 225-229): make PRO responsible for creating the relevant trace. In order to give control infinitives the same form as VPs, PRO must then delete. So, on this view, control clauses and VPs end up having basically the same syntactic form – a phrase with a trace in subject position – accounting for their similar interpretation. But they get that form through different derivations. VPs get it from the subject's movement, as indicated in (84), whereas control infinitives get it by way of PRO's movement and deletion, as indicated in (85).

- (84) Sally₁ must [_{VP} *t₁* eat less chocolate].
(85) a. Sally₁ tried [_{CP} [_{IP} PRO₁ to [_{VP} *t₁* eat less chocolate]]].
b. Sally₁ tried [_{CP} [_{IP} to [_{VP} *t₁* eat less chocolate]]].

Take the infinitival marker *to* to be semantically vacuous, and the CP in (85b) will look the same to the interpretive component as the VP in (84) does. This view of PRO, then, gives it a fleeting existence. Its sole function is to create a trace and get out of the way.

If this is the correct solution to the semantic differences between control and other clauses, then it also solves the problem posed for our analysis by the non-islandhood of Icelandic control infinitives. The reason the topicalized PRO in Icelandic control infinitives does not invoke island effects is because it has deleted before it can do so.

5. CONCLUSION

We have argued that the exceptional placement of the infinitival verb in Icelandic control infinitives reflects the fact that the PRO in Icelandic control infinitives is forced to topicalize. On behalf of this conclusion, we have offered the following considerations: (1) it will bring Icelandic infinitival clauses into sync with what appears to be a true description of when verbs may occupy I° in Germanic; and (2) it will explain why there is verb movement in Icelandic control infinitives, but not in Icelandic ECM or raising infinitives. We have suggested that what makes the topicalization of PRO obligatory in Icelandic control infinitives is the anti-government requirement in (39), whose effects have up to now been taken to hold just of English.¹⁶ On behalf of the wider applicability of (39) we have argued that it explains the relative paucity of overt material in the C° of Germanic control infinitives when compared with the parallel availability of this material in the control infinitives of Romance. And we have argued that making (39) responsible for the obligatory topicalization of PRO in the control infinitives of Icelandic will also explain why Germanic infinitival clauses differ from finite clauses in having overt topicalizations. Topicalizing something in an infinitival clause invokes verb second word-order, and this in turn will cause a violation of (39) (unless it is PRO that has topicalized). Finally, we have suggested that Icelandic control infinitives are not islands for extraction, as might be expected, because the topicalized PRO they host deletes before the island violation can be triggered. This, we have argued, is not due to something particular about Icelandic: the interpretation that control infinitives get provides evidence that PRO must always delete.

One way of framing these proposals into a coherent picture is as follows. Let the needs of the interpretive component force control infinitives to lose their subject argument. For example, imagine that verbs which select control infinitives select clauses which must have the same interpretation that VPs do. However, the syntactic conditions that determine how clauses can be built, for example the (Extended) Projection Principle and Theta Criterion or their progeny, will require the presence of a subject argument in control infinitives. To resolve these conflicting needs, control infinitives are equipped with a subject whose sole purpose is to create a trace: it moves and deletes. This is what we have been calling PRO. The anti-government requirement in (39) might then be seen as a condition on deletion. It, or more likely something that derives it,

¹⁶Except in Kayne (1991), whose project is similar to ours, but whose particular proposals we have argued against.

holds of the subjects of control infinitives because the subjects of control infinitives are forced to delete, and (39) names the conditions under which this deletion is tolerated.

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