

Object Extraposition in Germanic – A Challenge for Control Theory?

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1. Introduction

Observation:

There are control structures in Germanic which are problematic for the *Movement Theory of Control* (MTC) (cf. Hornstein 1999, 2001 and subsequent work); cf. section 3. On the other hand, one advantage of the MTC over traditional PRO-based theories of control is that it is compatible with a local derivational approach to syntax in which the accessible domain is restricted by the *Phase Impenetrability Condition* (PIC) (cf. Chomsky 2000, 2001, 2008).

Aim:

To argue for a theory of control which can handle the Germanic data and is at the same time compatible with a local derivational view of syntax.

Structure of the talk:

- locality considerations → how local is control? (section 2)
- object extraposition in Germanic → challenging data from (i) Icelandic and (ii) German (section 3)
- an alternative approach – the hybrid theory of control (HTC) → how can it handle the Germanic data? (section 4)
- summary (section 5)

2. Locality

Control – a non-local phenomenon?

At first sight, control seems to involve a non-local dependency: Since the controller is part of the matrix clause and the controllee is embedded in the complement clause, they are separated from each other by at least one clause boundary.

- (1) [_{matr.clause} controller ... [_{emb.clause} controllee ...]]

Consequence:

This is not compatible with the PIC; in (1), at least one phase boundary (= embedded CP) intervenes between controller and controllee.

Existing theories of control:

While this is problematic for the traditional *PRO-based theories of control* (including Landau 2000, 2004, who develops a theory based on the phase model¹), the MTC does not face this

¹At some point, his theory involves an Agree relation between a functional head in the matrix clause and PRO in the embedded SpecT position for which he has to accept a relaxation of the PIC.

problem. Following the MTC, the controllee is not a distinct argument on its own but just a copy of the controller left behind by A-movement.

Summary:

<i>Ability to handle ...</i>	<i>local derivational implementation</i>
traditional PRO-based theories	✗
MTC	✓

3. Object Extraposition in Germanic

3.1 Intervention Effects in Icelandic (cf. Wood 2012)

Observation by Wood (2012):

- Control across the intervening sentential pronoun það in (2) works.
- However, topicalization (cf. (3)) or raising (cf. (5)) across such a pronoun is illicit.

- (2) Þeir ákváðu (það) að PRO heimsækja Ólaf.
they.MASC.NOM decided (it.ACC) to visit Olaf.ACC
'They decided to visit Olaf.'
(cf. Wood 2012:323)
- (3) Ólaf₁ ákváðu þeir (*það) að PRO heimsækja t₁.
Ólaf.ACC decided they.MASC.NOM (*it.ACC) to visit
'Olaf, they decided to visit.'
(cf. Wood 2012:323)

Note:

As to raising structures and the insertion of the intervening pronoun það, it could be argued that the ungrammaticality results from the different structures involved in raising constructions, namely their lack of the CP-layer in the embedded clause.

This is why Wood (2012) uses the verb *byrjaði* (*begin*) as an illustration: As (4) shows, it behaves like a raising verb insofar as it preserves the quirky Case it gets from the embedded predicate *bore*, although it involves at the same time *að*, which occurs in C.

- (4) Mér₁ byrjaði að t₁ leiðast.
me.DAT began to bore
'I began to feel bored.'
(cf. Wood 2012:324)

Ad (5):

In the raising context in (5), the insertion of það is excluded.

- (5) *Haraldur₁ byrjaði það að t₁ senda henni bréf.
Harold.NOM began it.ACC to send her.DAT letters.ACC
'Harold began to send her letters.'
(cf. Wood 2012:324)

Result:

The intervening pronoun það blocks movement of all sorts: Both standard A'- and A-movement across það are impossible (cf. (3), (5)). By contrast, control across það is licit (cf. (2)).²

²In fact, Wood (2012) already suggests that if A'-movement across the pronoun is blocked, "A-movement

Conclusion:

If control is movement, this is unexpected. It suggests that the type of movement involved in control underlies locality restrictions which are less strict than those regulating other types of movement; this contradicts the underlying idea of the MTC according to which control involves A-movement, the most local type of movement.

Consequence for the MTC:

These intervention effects pose a problem for the MTC.

3.2 Intervention Effects in German

Observation 1:

In German, we can also find sentential pronouns of this type. As has been observed before (cf., for instance, Webelhuth 1992:101f., Müller 1995:230f.), they occur optionally (like *það* in Icelandic) and block CP topicalization; cf. (6).

- (6) a. Ich bereue (es), dass Maria wegfährt.
I regret (it) that Maria goes away
I regret that Maria is going away.
- b. Dass Maria wegfährt bereue ich (*es).
that Maria goes away regret I (it)
I regret that Maria is going away. (cf. Webelhuth 1992:101)

Observation 2:

As (7)-(10) show, the pattern can be extended to non-finite complement clauses and topicalization involving extraction out of the embedded CP: As in Icelandic, the latter is illicit (cf. (7-b)-(10-b)), while control across the intervening pronoun is not blocked (cf. (7-a)-(10-a)).

- (7) a. Er hat (es) bereut/bedauert, Maria verletzt zu haben.
he has (it) regretted Maria hurt to have
He regretted having hurt Maria.
- b. Maria hat er (*es) bereut/bedauert verletzt zu haben.
Maria has he (it) regretted hurt to have
He regretted having hurt Maria.
- (8) a. Er bittet dich (darum), die Unterlagen morgen mitzubringen.
he asks you (for it) the documents tomorrow to bring
He is asking you to bring the documents tomorrow.
- b. Die Unterlagen bittet er dich (*darum), morgen mitzubringen.
the documents asks he you (for it) tomorrow to bring
He is asking you to bring the documents tomorrow. (cf. Bierwisch 1963:135)³
- (9) a. Er hatte (darauf) gehofft, dieses Spiel zu gewinnen.
he had (on it) hoped this match to win
He had hoped to win this match.

past this pronoun would be unexpected [...] [since] A-movement is in general governed by stricter locality constraints." (cf. Wood 2012:324).

³Thanks to Marcel Pitteroff for bringing this example to my attention.

- b. Dieses Spiel hatte er (*darauf) gehofft zu gewinnen.
this match had he (on it) hoped to win
He had hoped to win this match.
- (10) a. Ich habe dich doch noch (dazu) überredet, diesen Job zu übernehmen.
I have you after all (to it) persuaded this job to take over
After all, I have persuaded you to take over this job.
- b. Diesen Job habe ich dich doch noch (*dazu) überredet zu übernehmen.
this job have I you after all (to it) persuaded to take over
After all, I have persuaded you to take over this job.

Note 1:

The intervention effect does not only occur with topicalization; other instances of A'-movement are equally affected – cf. (11), which involves *wh*-movement.⁴

- (11) a. Wen hat er bereut, verletzt zu haben?
who has he regretted hurt to have
Who did he regret having hurt?
- b. *Wen hat er es bereut, verletzt zu haben?
who has he it regretted hurt to have
Who did he regret having hurt?

Note 2:

It is more difficult in German to show that the pronoun also generally blocks A-movement. But consider the ambiguous verb *beginnen* in (12) and (13), which can only occur with *damit* in control structures.

Raising:

- (12) Ich glaube, dass es bald (*damit) beginnt, heftig zu regnen.
I believe that it soon (with it) begins heavily to rain
I believe it will soon begin to rain heavily.

Control:

- (13) Ich glaube, dass er (damit) begann, Briefe zu schreiben.
I believe that he (with it) began letters to write
I believe that he began to write letters.

Underlying assumptions concerning the examples with sentential pronoun:

Following Bennis (1986), Vikner (1995), Müller (1995) and others, it is assumed that the sentential pronoun is referential and occupies the complement position of the verb. Furthermore, it is assumed that the embedded CP is base-generated in the complement position of the

⁴Note that there are similar examples from Dutch as well. As Bennis (1986:104) points out, "extraction from sentential complements is excluded if a corresponding *het* is present".

- (i) a. Wat betreurde jij dat hij gezegd had?
what regretted you that he said had
- b. *Wat betreurde jij het dat hij gezegd had?
what regretted you it dat hij gezegd had (cf. Bennis 1986:104)

pronoun and then undergoes (obligatory) extraposition (cf., for instance, Müller 1995:231). Extraposition is considered to be right-adjunction (to vP or TP, derived by movement; cf., among many others, Bierwisch 1963, Reinhart 1980, Buring & Hartmann 1995, Müller 1995, 1997).

Consequences for the MTC:

The MTC would have to find a way to extract the controller DP (*er* in (7)) out of the embedded CP.

Possibility 1: (i) extraction + (ii) extraposition

First, the controller DP is moved out of the CP, then the latter is extraposed. Consequence: The controller DP would have to move across the intervening pronoun which normally blocks movement (cf. (7-b)-(10-b)).^{5,6}

Possibility 2: (i) extraposition + (ii) extraction

First, extraposition takes place, then the controller DP is extracted. In this scenario we end up with a configuration similar to that of control into adjuncts – the controller DP must leave an adjunct in the end, namely the extraposed CP.

MTC analysis – extraction out of adjuncts:

The analysis for control into adjuncts proposed by the MTC relies on sideward movement. However, this particular case considered here is not completely parallel, since the analysis of adjunct structures like (14) normally relies on an interarboreal operation; i.e., the controller DP *John* is not moved out of the adjunct and into the matrix clause in one step. Instead, the DP is copied while the adjunct and the matrix vP are still unconnected. Then the copy is inserted into the matrix vP, and only then is the adjunct merged into the derivation.

- (14) John₁ saw Mary [_{adjunct} after <John₁> eating lunch].
(cf. Boeckx, Hornstein & Nunes 2010:88)

Object extraposition:

- (15) Er₁ hat (es) bedauert, [_{adjunct} <er₁> Maria verletzt zu haben].
he has (it) regretted <he> Maria hurt to have
He regretted having hurt Maria.

Difference:

Although (14) and (15) look similar at first sight, there is a crucial difference: In examples like (15) (= (7-a)) sideward movement cannot apply, since the extraposed CP is a derived adjunct which has already been merged into the derivation before; hence, movement of the controller DP out of this adjunct would yield a CED effect.

Conclusion:

Following the MTC, two types of adjuncts have to be distinguished; (i) adjuncts created

⁵Why movement is blocked by the intervening sentential pronoun is not at issue here (following Wood 2012, it might be a violation of the A-over-A principle). However, whatever the reason is, it would also have to block control under the MTC.

⁶Note moreover that this would be the underlying derivation for the grammatical versions of (7-b)-(10-b) without intervening pronoun (i.e. extraction takes place prior to extraposition).

by external merge vs. (ii) adjuncts created by internal merge. Control into type (i) involves sideward movement (i.e. interarboreal movement) of the controlled DP into the controller position; control into type (ii) is not possible since it violates the CED.

Note:

In analysis 2, the pronoun does not syntactically intervene anymore when extraction is supposed to take place; but because of the CED we would have to resort to analysis 1, which is ruled out due to the intervening pronoun.

*Result: (i) extraction + (ii) extraposition → blocked by the intervening pronoun
(i) extraposition + (ii) extraction → violation of the CED*

Conclusion:

These data pose a problem for the MTC; potential derivations either face a CED effect or are blocked by the intervening pronoun.

Recall that...

PRO-based theories do not involve movement and therefore do not care about intervening pronouns.

Summary:

<i>Ability to handle ...</i>	<i>local derivational implementation</i>	<i>Germanic intervention effects</i>
traditional PRO-based theories	✗	✓
MTC	✓	✗

4. A Hybrid Theory of Control (HTC)

Proposal:

→ a new, hybrid theory of control which combines the advantages of both theories

4.1 The HTC in a Nutshell

Underlying assumptions:

- (i) controlled DP ≠ residue of A-movement; the θ -Criterion holds (cf. PRO-based theories)
- (ii) θ -roles = features which are checked when they are assigned to an argument (cf. MTC)
- (iii) numeration of an OC structure without an argument like PRO violates the θ -Criterion (more θ -roles than arguments) → feature mismatch which is already visible in the numeration

Underlying idea:

Without knowing anything about the syntactic structure to come, we can tell by looking at the numeration whether the the number of arguments matches the number required by the respective predicate. (And this does not hinge on the encoding of θ -roles in terms of features; in fact, it is just a mismatch between the required number of arguments and the real number of arguments present.)

(16) *Illustration:*

- a. Num₁ = {argument_[θ], argument_[θ], predicate_[*θ*,*θ*]} → ✓
- b. Num₂ = {argument_[θ], predicate_[*θ*,*θ*]} → mismatch

(iv) repair strategy to save the derivation: a new numeration with an incomplete copy/phonetically empty argument is generated (= can be called PRO, but note that it is not a completely independent element but is derived from one of the other arguments)⁷

Note:

Formally, this can be conceived as follows: A numeration with a θ -feature mismatch is doomed to failure; hence, an alternative (new) numeration is created which differs from the first one only insofar as it tries to repair the defect of the previous one (i.e. the Inclusiveness Condition is not violated).

(17) *Illustration:*

- a. Num = {argument_[θ], predicate_[*θ*,*θ*]} → mismatch
- b. Num_{repaired} = {argument_[θ], copied argument_[θ], predicate_[*θ*,*θ*]} → ✓

Why is the copied argument phonetically empty and referentially defective?

- To minimize the effort of the repair, only the minimally necessary features are copied: What is needed first of all is a syntactic element that can function as argument; phonetically and semantically it need not be "complete".
- Hence, the result is a copy which lacks the original reference of the argument; however, as an argument it needs to be referentially identified in the end, and so it has to be syntactically licensed by a fully specified argument to be referentially identified.

(v) The empty argument has to be syntactically licensed in the derivation by another argument under Agree to be referentially identified.

(vi) licensing mechanism for OC = Agree with the first available referential DP:
controllee = probe, controller = goal (\neq Landau 2000, 2004)

(vii) only restriction: goal and probe have to be accessible at the same time in the derivation; involves upward probing (cf. also Schäfer 2008, Wurmbrand 2013)

(viii) This can be achieved by assuming that the controllee moves in the syntactic derivation from phase edge to phase edge until it can be licensed (\rightarrow compatibility with a local derivational view).

(ix) vPs, CPs, and DPs are phases.

(x) referential identification – technical implementation: the copied argument bears a feature called [REF], which is valued by the controller under Agree; as a result, the controllee and the respective DP are interpreted as coreferent.

⁷Cf. also Assmann (2012) for a similar proposal concerning the analysis of parasitic gaps. As to the idea that control involves a repair strategy, cf. also Barrie & Pittman (2004).

Illustration: subject control in the HTC

(18) John₁ tries PRO₁ to win.

Step 1: Feature mismatch & repair by PRO insertion

To prevent a crash because of feature mismatch, PRO insertion takes place; cf. (19).

Note:

For the sake of convenience, I call the incomplete copy PRO although it is generated differently than standard PRO. Note moreover that in (19) only the external θ -roles/arguments are highlighted.

- (19) a. *Underlying numeration:*
Num = {John_[θ], tries_[*θ*], to, win_[*θ*]} → feature mismatch
- b. *PRO insertion:*
Num_{repaired} = {John_[θ], tries_[*θ*], to, **PRO**_[θ,REF], win_[*θ*]}

Step 2: deriving the embedded clause

In Specv, PRO is inserted as external argument of *win* and can check the latter's $[*θ*]$ -feature. Then it moves to the embedded SpecT position to check the EPP, and finally to the edge of the embedded CP in order to remain accessible, since it still needs to value its [REF]-feature; cf. (20). (Inaccessible parts of the structure are crossed out.)

- (20) a. [_{VP} PRO_[θ,REF] win_[*θ*]] [_{VP} t_{win}]
- b. [_{TP} PRO_[REF] to_[EPP]] [_{VP} t_{PRO} win [_{VP} t_{win}]]
- c. [_{CP} PRO_[REF]] [_{TP} t_{PRO} to [_{VP} t_{PRO} win [_{VP} t_{win}]]]]

Step 3: deriving the matrix clause

After having merged the matrix verb *try*, the matrix subject *John* enters the derivation in Specv and checks the $[*θ*]$ -feature of the matrix predicate.

Step 4: Agree between John and PRO

PRO is still accessible when *John* is merged into the structure (*John* is then in Specv of the matrix clause and PRO in SpecC, the edge of the preceding phase), and the [REF]-feature can finally be valued by the matrix subject under Agree. Thus, PRO inherits the referential features of *John*, i.e., the two arguments corefer; cf. (21).

- (21) [_{VP} John_[θ] hopes_[*θ*]] [_{VP} t_{hopes}] [_{CP} PRO_[REF]] [_{TP} t_{PRO} to [_{VP} t_{PRO} win t_{win}]]]]

Comparison MTC – HTC:

- The HTC also involves movement and can thus profit from many advantages of the MTC (like compatibility with the PIC); however, the controllee does not have to move all the way up to the position of the controller – it can stop as soon as the controller is accessible at the same time.
- It is exactly this difference between the MTC and the HTC which makes the latter superior with respect to the observed intervention effects, since the controllee is not forced to move out of an island (here: the adjunct) to be licensed.

4.2 Germanic Object Extraposition and the HTC

Analysing the German control data:

- (22) Er hat (es) bedauert, Maria verletzt zu haben.
 he has (it) regretted Maria hurt to have
 He regretted having hurt Maria.

Recall:

As the data in (7)-(11) have shown, there is an asymmetry between leftward and rightward movement; while the former is blocked by the sentential pronoun (cf. the examples involving topicalization, *wh*-movement, raising), the latter is available (i.e. object extraposition).

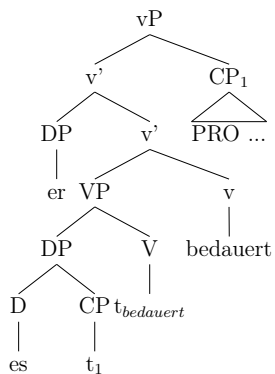
Consequence:

Whatever the reasons for this asymmetry are, we can conclude: Although PRO is not allowed to move leftwards in the direction of the controller across the pronoun, PRO can be moved inside the extraposed CP to a right-adjoined position.

Result:

Here, PRO can be licensed by the controller in exactly the same way as in all other instances of control into adjuncts: When it is located at the edge of the adjoined CP, PRO and the matrix subject are both accessible at the same time before the matrix vP is left; cf. (23).

- (23) *Agree between controller "er" and PRO:*⁸



Licensing of PRO:

When the complement CP is adjoined to vP, PRO (being at the edge of the CP) is in the accessible domain and c-commanded by the subject *er*
 → Agree relation between controller *er* and PRO is established; as a result, PRO's [REF]-

⁸In fact, on the assumption that rightward movement also requires the CP to be in SpecD first of all, movement of PRO to SpecD might not be blocked after all. So the blocking by the pronoun might be based on the impossibility of leaving SpecD (i.e. the edge of the DP phase) via leftward movement. If this is true, another analysis is plausible, according to which PRO moves to the edge of the DP phase (but does not leave it) and can be licensed here by the matrix subject.

feature can be valued and controller and controllee are interpreted as coreferent
 → the control relation is derived

Note:

Note that Agree into the adjunct takes place when the vP has not yet been left (cf. (23)). Therefore, PRO is still accessible and can participate in the Agree relation. Since PRO is in the specifier of the adjunct (i.e., the edge of the adjoined CP), it becomes inaccessible as soon as the vP is left. After the completion of the vP, only material at its own edge (plus the phase head) remain accessible (i.e., the adjunct itself, for instance, but not the adjunct's edge, where PRO is located).⁹

Difference MTC vs. HTC:

Agree is possible in (23) (c-command + accessibility), movement out of the adjunct is illicit (CED):

MTC: (i) extraposition + (ii) extraction → violation of the CED

HTC: (i) extraposition + (ii) Agree between PRO and its controller → licensing possible without extraction out of the adjunct

5. Summary

The data:

- Germanic control structures which involve object extraposition and a sentential pronoun.
- Observation: Although movement across this pronoun is illicit, control is possible.

- (24) a. Er hat (es) bereut, Maria verletzt zu haben.
 he has (it) regretted Maria hurt to have
 He regretted having hurt Maria.
 b. Maria hat er (*es) bereut verletzt zu haben.
 Maria has he (it) regretted hurt to have
 He regretted having hurt Maria.

Impact of the data:

- The Icelandic data brought up by Wood (2012) are not a side issue; the construction also occurs (at least) in German, is productive, and we get clear contrasts in grammaticality (cf. (24)).
- Since the sentential pronoun cannot be crossed by leftward movement, the MTC faces a problem, since the most obvious alternative analysis (first extraposition, then extraction) is blocked by the CED.

Aim:

- (i) To capture these data
 (ii) within a local derivational approach.

Advantage of the HTC:

- Involves movement: as a result, the non-local dependency is split up → the HTC is compatible with a local derivational theory based on the PIC (advantage over PRO-based

⁹Cf. also Müller's (2010, 2011) discussion of CED effects as a consequence of the PIC.

theories; cf. aim (ii)).

- Although the controllee moves, it does not have to move across intervening pronouns or out of islands (advantage over the MTC; cf. aim (i)).

<i>Ability to handle ...</i>	<i>local derivational implementation</i>	<i>Germanic intervention effects</i>
traditional PRO-based theories	✗	✓
MTC	✓	✗
HTC	✓	✓

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