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ADJUNCT CONTROL

1. Introduction

Heterogeneity of adjunct control:

In the control debates of the recent years (cf. Hornstein 1999, Landau 2000, 2015, a.o.), adjunct control has only played an ancillary role. There are at least three reasons for this:

(i) empirically, adjunct control comprises a very heterogeneous set of examples;

(ii) as Landau (2013, 2015) points out, adjunct control cannot be categorized in unison as obligatory or non-obligatory control (OC vs. NOC); instead, the distinction between OC and NOC cuts through the set of examples involving adjunct control (an observation which adds to its heterogeneous character);

(iii) NOC as such has typically played a minor part in theories of control.

Aim of our talk:

- to provide, in particular, insight into German and Norwegian data involving adjunct control, since, in the literature, the discussion of adjunct control has mainly been based on English data

- to show how these data can be captured theoretically in accordance with phase theory, drawing on ideas by Landau (2015) and Fischer (2017)

Our claim in a nutshell:

It depends on the underlying syntactic configuration whether we get OC with the subject as controller, OC with the object as controller, or NOC.

➤ **adjunction in the vP domain results in obligatory subject control**

➤ **adjunction in the VP domain results in obligatory object control**

➤ **a higher adjunction site yields NOC**

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Outlook:

- empirical evidence - what kind of adverbials can we observe, where do they adjoin, and which type of control do they display?

- theoretical approach - how can this be implemented technically?

2. Empirical Evidence

German:

- adverbial infinitives headed by *(an)statt* ('instead'), *ohne* ('without') and *um* ('in order to') (Høyem 2015, to appear)

- adverbial present and past participle constructions (Brodahl 2016, Brodahl & Høyem to appear, Høyem & Brodahl 2017)

- adverbial small clauses headed by the particle *als* ('as') (Flaate 2007)

Norwegian and English: → equivalent adjuncts

- adverbial infinitives (Faarlund et al. 1999; Landau 2013)

- participle constructions headed by a present or past participle (Faarlund et al. 1999, Fabricius-Hansen & Haug 2012, Kortmann 1991)[2]

- adverbial small clauses headed by the particle *som* in Norwegian (Eide 1996) and *as* in English (Emonds 1985)

Assumptions:

- In line with scope-based adjunct theories like Frey & Pittner (1998, 1999) and Pittner (1999), Haider (2000) and Ernst (2002, 2014), we assume that (German) adverbial adjuncts are located in different syntactic domains (or "zones"), which correlate with their semantic scope.

- According to the scope-based approach, adverbials modifying the speech act or proposition (i.e. speech-act, frame and sentence adverbials) are attached high in the clause (as CP and TP adjuncts), with event modifying (causal, temporal, instrumental, etc.) and process modifying (manner) adverbials lower down in the tree structure (as vP and VP adjuncts).

(1) Ernst (2014: 115)

	CP	TP	vP	VP
Frey & Pittner (1999)	Frame	Proposition	Event	Process
Ernst (2002)	Speech-Act	Proposition	Event	Specified Event

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[2] See Lyngfelt (2002) for a large study of control in Swedish adjunct infinitives (within Optimality Theory) and Thurén (2008) for a control analysis of present participles in Swedish (inspired by Landau's 2000 control analysis and Pesetsky & Torrego's 2007 Agree approach).

- Interestingly, adverbial *als*-predicatives, infinitives headed by *(an)statt*, *ohne* and *um*, as well as present and past participle constructions all appear to adhere to this syntactico-semantic hierarchy.

- These adjuncts are syntactically and semantically underspecified in the sense that they are not inherently temporal, causal or manner, but are interpreted as such in these adjunct positions (see also Businger 2011 for a similar conclusion regarding absolute small clauses headed by *mit* ('with')).

➢ Regarding the interpretation of PRO in these adjuncts, we argue that the low adverbial adjuncts typically display the OC properties described by Landau (2013):

1) the controller must be an argument of the adjunct's matrix clause
2) long-distance and arbitrary control are ruled out
3) OC PRO only allows a sloppy interpretation under ellipsis
4) they freely allow a non-human PRO

- The control status of these adverbial adjuncts is affected by their syntactic position: adjuncts in the c-command domain of T generally display OC properties, and adjuncts adjoined above T display NOC.

Illustration:[3]

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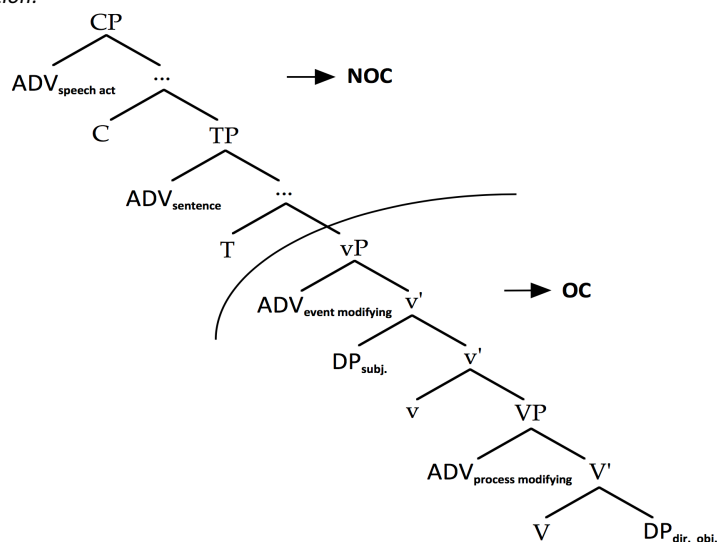
[3] Following Bare Phrase Structure, the labels on the main branch simply illustrate that α is a maximal projection iff α does not project; α is a minimal projection iff α is directly selected from the numeration; α is an intermediate projection iff α is neither a maximal nor a minimal projection.

- Drawing on Frey & Pittner (1998, 1999) and Ernst (2014), we assume that (only) speech act, frame and sentence adverbials have scope over T (anchoring the event/ proposition temporally), and thus, are attached to a projection of TP or CP. Event modifying adjuncts (for instance temporal, causal, conditional adverbials) are adjoined to a projection of vP (semantically corresponding to the whole or parts of the event), whereas process modifying adjuncts are adjoined to VP, cf. tree structure.

	OC	NOC
adverbial *als*-predicatives:	temporal, causal, conditional, counterfactual, manner	
adverbial infinitives:	rationale/purpose, conditional, consecutive, outcome/telic *um*-infinitives, event modifying *ohne*-infinitives and event modifying *(an)statt*-infinitives	speech act adverbials
adverbial present and past participles:	temporal, causal, conditional, instrumental, manner, …	speech act and sentence adverbials

Syntactic evidence for different adjunction sites:
   ➢ pre- and postverbal word order restrictions (i.e. mirror effects):

(i) pre-verbally: subject controlled adjuncts > object controlled adjuncts

(2) Ich$_i$ habe [**PRO$_i$** schon   als junge Studentin] Noam Chomsky$_j$ [**PRO$_j$** als
    I   have   already as young student   Noam Chomsky   as
    Linguisten] bewundert.
    linguist   admired
    'Already as a young student, I admired Noam Chomsky as a linguist.'

(ii) post-verbally: object controlled adjuncts > subject controlled adjuncts:

(3) dass die   Eltern$_i$ den   Sohn$_j$ in den Kindergarten   brachten,
    that the$_{NOM}$ parents the$_{ACC}$ son   to the kinder.garden brought
    [**PRO$_j$** um   mit anderen Kindern zu spielen],
        in.order.to with other   children to play
    [**PRO$_i$** um   mehr Zeit füreinander   zu haben]
        in.order.to more time for.each.other to have
    'that, in order to have more time for each other, the parents took their son to kindergarden to play with other children.'

(4) *dass die   Eltern$_i$ den Sohn$_j$ in den Kindergarten brachten,
    that the$_{NOM}$ parents the$_{ACC}$ son to the   kinder.garden brought
    [**PRO$_i$** um   mehr Zeit füreinander   zu haben],
        in.order.to more time for.each.other to have
    [**PRO$_j$** um   mit anderen Kindern zu spielen]
        in.order.to with other   children to   play   (cf. Høyem 2016)

- We take this as evidence that object controlled adjuncts are closer to the verb and therefore adjoined lower than subject controlled adjuncts:
  - ➢ subject control: vP adjuncts
  - ➢ accusative object control: VP adjuncts
  - ➢ dative object control: VP adjuncts

- Cf. Nissenbaum (2005) for the same observation in subject controlled rationale clauses and object controlled purpose clauses:

(5) They brought Max along …
   a. [_to talk to himself] [(in order) to amuse themselves].
   b. *[(in order) to amuse themselves] [_to talk to himself].

(6) George put that gun on the table …
   a. [_ for me to shoot him with __] [in order to prove I'm a coward].
   b. *[in order to prove I'm a coward] [_ for me to shoot him with __]

2.1 OC in vP/VP adjuncts

- OC is attested in event modifying, event internal and process modifying adjuncts, such as temporal, causal, (true) conditional, counterfactual, instrumental and manner adverbials
  - ➢ adverbial infinitives headed by *(an)statt*, *ohne* and *um* (Høyem 2015, to appear)
  - ➢ adverbial present and past participle constructions (Brodahl 2016; Brodahl to appear; Høyem & Brodahl 2017)
  - ➢ adverbial small clauses headed by the particle *als* (Flaate 2007)

- The following data show that PRO in these adjuncts display the OC properties described by Landau (2013):

1) The controller is an argument of the adjunct's matrix clause (often, but not always the subject):

Adverbial infinitive headed by 'um':

(7) **Ein Licht**$_i$ genügt (mir), [PRO$_i$ um   das Zimmer zu erleuchten].
   a   light$_{NOM}$ suffices (me$_{DAT}$)   in.order.to the room   to light.up
   'A single light is sufficient (for me) to light up the room.'
                                        (cf. Bech 1957: 97, Haider 2015: 1)

(8) Man bezahlte **die Studenten**$_i$, [PRO$_i$ um   Flyer zu verteilen].
   one paid   the students$_{ACC}$ in.order.to flyer to hand.out
   'The students were paid to hand out flyers.'

(9) Eine Kerze genügt **ihm**$_i$, [PRO$_i$ um   sich   zurechtzufinden].
   a   candle suffices him$_{DAT}$ in.order.to REFL   to.orientate$_{INF}$
   'A candle is sufficient for him to orientate himself.' (cf. Haider 2015: 1)

Present and past participle constructions:

(10) [PRO$_i$ Als   tauglich eingestuft],   stellte **Nils**$_i$ zunächst den
    as   fit   found$_{PERF.PTCP}$ handed.in Nils first   the$_{ACC}$
    Antrag   auf Verweigerung des   Dienstes   an der   Waffe.
    application for exemption   the$_{GEN}$ service$_{GEN}$ by the$_{DAT}$ weapon
    'After having been found to be fit for service, Nils applied for exemption from military service.' (cf. Høyem & Brodahl 2017: 1)

(11) [PRO$_i$ Friedlich hinter dem   Steuer seines Audi A6   schlafend]
    peacefully behind the$_{DAT}$ wheel   his $_{GEN}$ Audi A6   sleeping$_{PRES.PTCP}$
    fand   ein Beamter   der   Bundespolizei **einen 49-Jährigen**$_i$.
    found a civil.servant$_{NOM}$ the$_{GEN}$ federal.police a$_{ACC}$ 49-year.old
    'Sleeping peacefully behind the wheel of his Audi A 6, the police found a 49-year-old.'
                                        (cf. Brodahl 2016: 40)

(12) [PRO$_i$ Vor   die   Wahl   zwischen Deutschtum und Motorrad,
    before the$_{ACC}$ choice between   Germanness and motor.bike
    Vaterland   oder Disco gestellt], dürfte **ihm**$_i$ die   Wahl nicht
    native.country or   disc put$_{PERF.PTCP}$ should him$_{DAT}$ the$_{NOM}$ choice not
    schwerfallen.
    be.difficult
    'Confronted with the choice between Germanness and motor bikes, native country and disco, he should have no difficulties in choosing.' (cf. Høyem & Brodahl 2017: 1)

Adverbial small clause headed by 'als':

(13) [PRO$_i$ Schon als 15-Jähriger]   kam **er**$_i$ 1937 zur   Schützengesellschaft.
    already as 15-year.old$_{NOM}$ came he 1937 to.the$_{DAT}$ shooter.society.
    'Already as a 15-year-old, he joined the shooting club in 1937.' (cf. Flaate 2007: 87)

(14) Der anfänglich noch recht vage Verdacht erhärtete   sich aber
    the at.first   PRT rather vague suspicion strengthened REFL however
    erst, als   ein Mädchen **den   Mann**$_i$ spontan
    first when a$_{NOM}$ girl   the$_{ACC}$ man   spontaneously
    [PRO$_i$ als ihren Peiniger] auf einem Polizeifoto   wiedererkannte.
    as   her$_{ACC}$ tormentor on a$_{DAT}$ police.photo recognized
    'The rather vague suspicion was first confirmed when a girl recognized the man as her tormentor on a police photo.' (cf. Flaate 2007: 84)

(15) Für dieses Wirken wurde **ihm**_i 1970 [PRO_i als einem
for this_{ACC} contribution was him_{DAT} 1970 as one_{DAT}
der ersten Gelehrten seines Faches] der Nobelpreis für
the_{GEN} first_{GEN} experts_{GEN} his_{GEN} field_{GEN} the_{NOM} Nobel.prize for
Wirtschaftswissenschaften zugesprochen.
economic.sciences awarded
'For his contribution, and because he was one of the first experts of his field, he was awarded the Nobel Prize in Economic Sciences in 1970.' (cf. Flaate 2007: 90)

2) OC PRO is never arbitrary or long-distance:

Adverbial infinitive headed by 'ohne':

(16) **Sie**_i gingen vorbei, [PRO_{i/*arb/*j} ohne etwas zu bemerken].
they passed by without anything to comment.on
'She passed by without commenting on anything.' (cf. Haider 2015: 4)

Adverbial present and past participle constructions:

(17) **Peter**_i erzählte, dass **Nils**_j, [PRO_{*i/*arb/j} als tauglich eingestuft], zunächst den
Peter told that Nils as fit found_{PERF.PTCP} first the_{ACC}
Antrag auf Verweigerung des Dienstes an der Waffe stellte.
application for exemption the_{GEN} service_{GEN} by the weapon handed.in
'Peter told that Nils, after having been found to be fit for service, had applied for exemption from military service.' (Høyem & Brodahl 2017: 16)

Adverbial small clauses headed by 'als':

(18) **Johan**_i hat **mir**_j erzählt, dass **Peter**_k [PRO_{*i/*j/*arb/k} als Lehrer] arbeitet.
Johan_{NOM} has me_{DAT} told that Peter_{NOM} as teacher works
'Johan has told me that Peter works as a teacher.'

3) In VP-ellipsis, OC PRO can only get a sloppy reading, never a strict reading:

Adverbial infinitive headed by 'um':

(19) **Die Seeschwalben**_i fliegen im Herbst nach Südafrika, [PRO_{i/*arb/k} um
the sea.swallows_{NOM} fly in.the fall to South.Africa in.order.to
im Winter überleben zu können], und das tun auch **einige andere Zugvögel**_j
in.the winter survive to can_{INF} and that do also some other migrating.birds
nach Südafrika fliegen [PRO_{j/*i} um im Winter überleben zu können].
to South.Africa fly in.order.to in.the winter survive to can_{INF}

'In fall, the sea swallows fly to South Africa to be able to survive in winter, and so do some other migrating birds, too.' (Høyem 2016)

Adverbial present and past participle constructions:

(20) [PRO_i Als tauglich eingestuft] stellte **Nils**_i den Antrag auf
as fit found_{PERF.PTCP} handed.in Nils the_{ACC} application for
Verweigerung des Dienstes an der Waffe, und das tat auch **Peter**_j
exemption the_{GEN} service_{GEN} by the weapon and that did also Peter
stellte [PRO_{j/*i} als tauglich eingestuft] den Antrag auf Verweigerung
handed.in as fit found the_{ACC} application for exemption
des Dienstes an der Waffe.
the_{GEN} service_{GEN} by the weapon
'Although he had been found to be fit for service, Nils had applied for exemption from military service, and so did Peter.' (cf. Høyem & Brodahl 2017: 17)

(21) **Anna**_i begleitete die Profi-Musiker [PRO_i swingend und
Anna accompanied the_{ACC} professional-musicians dancing and
fingerschippend], und das tat auch **Paul**_j begleitete die
finger.snapping_{PRES.PTCP} and that did also Paul accompanied the_{ACC}
Profi-Musiker [PRO_{j/*i} swingend und fingerschnippend].
professional-musicians dancing and finger.snapping
'Anna accompanied the professional musicians by dancing and snapping her fingers, and so did Paul.' (cf. Brodahl 2016: 110)

Adverbial small clause headed by 'als':

(22) **Peter**_i arbeitet [PRO_i als Lehrer], und das tut auch **sein Bruder**_j
Peter works as teacher_{NOM} and that does also his brother
arbeitet [PRO_{j/*i/*arb} als Lehrer].
works as teacher
'Peter works as a teacher, and so does his brother.'

(23) Peter schickte **seine Kinder**_i auf die Sommerschule,
Peter_{NOM} sent his_{ACC} children to the_{ACC} summer.school
[PRO_i um mit anderen Kindern spielen zu können],
in.order.to with other children play to can
und das tat Paul auch seine Kinder_j auf die Sommerschule schicken,
and that did Paul also his children to the summer.school send
[PRO_{j/*i} um mit anderen Kindern spielen zu können].
in.order.to with other children play to can
'Peter sent his children to summer school to be able to play with other children, and so did Paul.'

4)   The controller of PRO is not restricted to [+human], but can also be [-human]:

Adverbial present and past participle constructions:

(24) Dort hielt   jetzt, [PRO$_i$ scharf bremsend], **ein Taxi$_i$**.
   there stopped now   sharply breaking   a   taxi
   'There a taxi stopped, breaking sharply.' (cf. Bungarten 1976: 189)

(25) Durch   ihre milde Schärfe   wirken **rote Zwiebeln$_i$** [PRO$_i$ fein
   through their mild sharpness seem red onions   thinly
   geschnitten oder gehobelt auf einem Salat] besonders gut.
   cut$_{PAST.PTCP}$ or sliced   on a$_{DAT}$ salad particularly well
   'Due to their mild flavour, red onions taste particularly well in a salad when thinly cut
   or sliced.' (cf. Høyem & Brodahl 2017: 17)

(26) Er liest **den Dialog$_i$** [PRO$_i$ stark   pointiert],   eben in Schauspielermanier.
   he reads the dialogue   strongly emphasized exactly in actor.way
   'He is reading the dialogue in a strongly emphasized way, just like an actor.'
                                (cf. Høyem & Brodahl 2017: 16)

Adverbial infinitives headed by 'anstatt', 'ohne' and 'um':

(27) Man gab **dem Raumschiff$_i$** genug Brennstoff mit, [PRO$_i$ um
   one gave the spacecraft$_{DAT}$ enough fuel   with   in.order.to
   auch noch den Merkur erreichen zu können].
   also still the Mercury reach   to can
   'The spacecraft got enough fuel to be able to even reach Mercury.' (cf. Leys 1971: 34)

(28) **Salat$_i$** erfrischt, [PRO$_i$ ohne   zu schwächen], […]
   salad refreshes   without to weaken
   'Salad is refreshing without being bad for you.' (cf. Høyem 2015: 175)

(29) Daher kann man kaum begreifen, dass **die   neuen Technologien$_i$** das
   therefore can one hardly understand that the$_{NOM}$ new technologies the$_{ACC}$
   Lesen und Schreiben fördern, [PRO$_i$ anstatt einen Gegensatz darzustellen].
   reading and writing   promote   instead.of an$_{ACC}$ opposite to.be
   'Therefore, one can hardly understand that the new technologies promote reading
   and writing instead of being counterpoductive.' (cf. Høyem 2015: 176)

Adverbial small clauses headed by 'als':

(30) Wir verwenden **unser altes Elternhaus$_i$**   heutzutage nur noch
   we use   our old parents.house these.days only
   [PRO$_i$ als Ferienwohnung].
        as holiday.cottage
   'These days, we only use our parents' old house as a holiday home.'

2.2   NOC in TP/CP adjuncts

- Speech act and sentence adverbial adjuncts, on the other hand, appear to be NOC
  adjuncts, according to Landau's criteria:
  ➢ the controller can, but doesn't have to be an argument in the adjunct's matrix
     clause
  ➢ the controller can be long-distance, arbitrary or speaker
  ➢ NOC PRO is always [+human]

- Speech act adverbial and sentence adverbial readings are attested in adverbial
  infinitives headed by *ohne* and *um* (but not *anstatt*) and adverbial participle
  constructions headed by a present or past participle, but not in adverbial small clauses
  headed by the particle *als*.

Adverbial infinitives headed by 'um' and 'ohne':

(31) [PRO$_{speaker}$ Um   es einmal etwas   überspitzt   zu formulieren],
          in.order.to it once   somewhat exaggerated to express
   ist er ein ganz schöner Schuft.
   is he a rather clever scoundrel.
   'To put it in a somewhat exaggerated way, he is a rather clever scoundrel.'
                              (cf. Pittner 1999: 361)

(32) Er ist, [PRO$_{speaker}$ ohne   zu übertreiben], weit und breit   der beste Billiard-Spieler.
   he is   without to exaggerate widely and broadly the best billiard-player
   'He is, without exaggeration, the best billiard-player ever.' (cf. Pittner 1999: 338)

Adverbial present and past participles:

(33) [PRO$_{arb}$ Von Mainz kommend]   empfiehlt   sich die Fahrt   mit der
        from Mainz coming$_{PRES.PTCP}$ recommends REFL the journey with the
   S-Bahnlinie 8   bis Wiesbaden Hauptbahnhof.
   city-train.line 8 to Wiesbaden central.train.station
   'When coming from Mainz, it is advisable to take the city metro line 8 to Wiesbaden
   central station.' (cf. Brodahl 2016: 113)

(34) [PRO$_{arb}$ Genauer   besehen] fiel die   Niederlage nicht ganz   so
        more.closely considered fell the$_{NOM}$ defeat   not completely so
   vernichtend aus.
   destructively out
   'Considering it more closely, it was not a crushing defeat, after all.'
                              (cf. Høyem & Brodahl 2017)

(35) [PRO$_{speaker/arb}$ Politisch   betrachtet]   ist er eine Katastrophe.
        politically considered$_{PAST.PTCP}$ is he a   disaster
   'Politically, he is a disaster.'

2.3 Extending the overview to Norwegian and English

Crosslinguistic comparison:

Although closely related languages like German, Norwegian, and English differ with respect to the inventory of adjunct (small) clauses hosting PRO, the same dichotomy between OC adjuncts and NOC adjuncts can be attested in all three language, i.e. OC in low adjuncts, adjoined to vP or VP, and NOC in adjuncts located in higher adjunct positions, adjoined to TP or CP.

- **OC in event and process modifying adverbials (→ vP/VP adjuncts)**
  (i.e. manner, instrumental, temporal, causal, conditional, etc.):

<u>*English:*</u>

(36) Thanks, **he**$_i$ said [PRO$_i$ stammering]. (cf. König 1995: 65)

(37) **Mendelsohn**$_i$, [PRO$_i$ after reviewing a number of studies], concluded that the association of low back pain and smoking is very weak.
(cf. Haug, Fabricius-Hansen, Behrens & Helland 2012: 139)

(38) [PRO$_i$ In killing his mother], **he**$_i$ had also killed his dream. (cf. König 1995: 67)

(39) [PRO$_i$ Standing on a chair], **John**$_i$ can touch the ceiling.
(cf. Fabricius-Hansen & Haug 2012: 36)

(40) **Mary**$_i$ grew up [PRO$_i$ to be a famous actress]. (Landau 2013: 221)

(41) **This book**$_i$ was out of print [before PRO$_i$ becoming a bestseller last summer].
(Landau 2013: 235)

(42) **The crops**$_i$ are harvested [only PRO$_i$ to rot in the barns]. (Landau 2013: 235)

(43) [PRO$_i$ As a blonde], **Mary**$_i$ might look like Jane. (cf. Fabricius-Hansen & Haug 2012: 36)

(44) [PRO$_i$ Having undergone the German academic education], the English university system impressed **him**$_i$ a great deal. (cf. Kortmann 1991: 8)

OC test: only sloppy reading under ellipsis

(45) [PRO$_i$ As a blonde], **Mary**$_i$ might look like Jane, and so could **Laura**$_j$ ~~look like Jane~~
~~[PRO$_{j/*i}$ as a blonde]~~.

(46) **This book**$_i$ was out of print [PRO$_i$ before becoming a bestseller last summer], and so was **that one**$_j$ ~~out of print [before PRO$_{j/*i}$ becoming a bestseller last summer]~~.

<u>*Norwegian:*</u>

(47) **Han**$_i$ […] takket for maten [ved PRO$_i$ å bøye seg lett og kysse henne
he thanked for the.food by to bow REFL slightly and kiss her
på hånden].
on the.hand
'He […] thanked for the meal by bowing slightly and kissing her hand.'
(Haug, Fabricius-Hansen, Behrens & Helland 2012: 163)

(48) [PRO$_i$ Hjemvendt fra den glade by med lettere pung, men med hodet
returned from the joyous city with lighter purse but with the.head
fullt av nye inntrykk], lot **han**$_i$ bygge ei ny stue på Bjørnstad.
full of new impressions let he build a new house at Bjørnstad
'Having returned from the joyous city with a lighter purse, but with his head full of new impressions, he had a new house build at Bjørnstad.' (cf. Helland & Pitz 2012:94)

(49) [PRO$_i$ Fylt av en anelse] løftet **jeg**$_i$ kruset og drakk.
filled by a hunch lifted I the.mug and drank
'With a hunch, I lifted the mug and drank.' (cf. Helland & Pitz 2012: 94)

(50) Da **han**$_i$ også døde, [PRO$_i$ knust av et tre som falt], […]
when he too died crushed by a tree that fell
'When he died as well, crushed by a falling tree […] (cf. Helland & Pitz 2012: 95)

(51) **Vi**$_i$ trenger mer informasjon [PRO$_i$ for å kunne gi råd].
we need more information in.order to can give advice
'We need more information in order to give advice.' (cf. Faarlund et al. 1997: 457)

(52) **Fritjof**$_i$ vaska golvet [PRO$_i$ uten å bli våt].
Fritjof scrubbed the.floor without to become wet
Fritjof scrubbed the floor without getting wet.' (cf. Faarlund et al. 1997: 998)

(53) **Skipet**$_i$ sank [PRO$_i$ etter å ha tatt inn store mengder vann].
the.ship sank after to have let in large amounts water
'The ship sank after letting in large amounts of water.' (cf. Faarlund et al. 1997: 457)

(54) Hun brukte **sine foreldre**$_i$ [PRO$_i$ som sannhetsvitner].
she used her parents as truth.witnesses
'She used her parents as witnesses.' (cf. Eide 1996: 84)

(55) Hun sendte **sønnen**$_i$ i barnehagen [PRO$_i$ for å leke med andre barn].
she sent the.son to the.kinder.garden for to play with other children
'She sent her son to the kinder garden to play with other children.'

OC test: only sloppy reading under ellipsis

(56) **Skipet**$_i$ sank [PRO$_i$ etter å ha tatt inn store mengder vann], og det gjorde **ubåten**$_j$ også ~~sank [PRO$_{j/*i}$ etter å ha tatt inn store mengder vann]~~.
'The ship sank after letting in large amounts of water, and so did the submarine.'

(57) **Vi**$_i$ trenger mer informasjon [PRO$_i$ for å kunne gi råd], og det gjør **du**$_j$ også ~~trenger mer informasjon [PRO$_{j/*i}$ for å kunne gi råd]~~.
'We need more information in order to give advice, and so do you.'

- **NOC in speech act and sentence adverbials (→ CP/TP adjuncts):**

English:

(58) [PRO$_{speaker}$ Putting it mildly], the holiday resort didn't quite meet our expectations.
(cf. Kortmann 1991: 51)

(59) [PRO$_{speaker}$ After pitching the tents], darkness fell quickly. (cf. Landau 2013: 232)

(60) Potatoes are tastier [PRO$_{arb}$ after PRO boiling them]. (cf. Landau 2013: 232)

(61) [PRO$_{arb}$ Motoring down the road to New York] numerous signs read "Visit Our Snake Farm". (cf. Kortmann 1991: 68)

Norwegian:

(62) Han var [PRO$_{speaker}$ kort sagt] for dårleg.
he was briefly said too bad/poorly
'He was, to put it briefly, too bad/poorly.' (cf. Faarlund et al. 1997: 811)

(63) Du har [PRO$_{speaker}$ ærleg tala] ikkje mykje å tilby.
you have honestly spoken not much to offer
'To be honest, you do not have much to offer.' (cf. Faarlund, et al. 1997: 811)

(64) Det var [PRO$_{speaker}$ mellom oss sagt] et kjedeleg foredrag.
it was between us said a boring talk
'Between us, it was a boring talk.' (cf. Faarlund et al. 1997: 811)

(65) [PRO$_{speaker}$ For å si det som det er], så hadde du ikke en sjanse.
in.order to say it like it is so had you not a chance
'To be honest, you never had chance.' (cf. Faarlund et al. 1997: 812)

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3. Theoretical Approach

- We follow the hybrid theory of control (cf. Fischer 2017), which is a phase-based theory of control and assumes that OC is licensed under Agree.

- Phase-based theory of control = derivational theory that takes the *Phase Impenetrability Condition* (PIC)[4] seriously:

➢ syntactic licensing must occur within the accessible domain in the course of the syntactic derivation (cf., for instance, Müller 2003 a.o., as regards arguments for a local perspective on syntax)

3.1 Licensing of OC under Agree

Basic assumptions:

(i) PRO is an empty argument with the feature specification {D, φ:_}
(cf. also Landau's 2015 view of PRO as a minimal pronoun).

(ii) Its unvalued φ-features express its referential defectiveness (pace Landau 2015).

(iii) PRO probes upwards to find a goal that values its φ-features (pace Preminger & Polinsky 2015; cf. also Schäfer 2008, Wurmbrand 2011 et seq., Zeijlstra 2012, Bjorkman & Zeijlstra 2014 as regards upward probing in general).

(iv) If PRO cannot be licensed in the current phase, it moves to the phase's edge to remain accessible and thereby retain the possibility to get licensed later in the derivation (in accordance with the PIC).

Agree and valuation:

Formally, we can start with the following definitions, which combine assumptions by Wurmbrand (2011; → upward probing (cf. (66)) and Pesetsky & Torrego (2007; → feature sharing (cf. (67-b)):

(66) *Agree:*[5]
α agrees with β iff
(i) β c-commands α,
(ii) β is the closest goal, and
(iii) α is accessible to β.

---

[4] We assume the following standard definitions:
(i) *Phase Impenetrability Condition* (PIC):
The domain of a head X of a phase XP is not accessible to operations outside XP; only X and its edge are accessible to such operations. (Chomsky 2000: 108; Chomsky 2001: 13)
(ii) CPs and vPs are phases.
[5] Following Pesetsky & Torrego (2007), Bošković (2009 et seq.), Wurmbrand (2011) a.o., Agree is assumed to be valuation driven.

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(67) *Valuation:*

    a. If α agrees with β, feature [F:_] on α is valued by feature [F: *val*] on β.

    b. Assume that α agrees with β and both have an unvalued feature [F:_]. If feature [F:_] on β is then valued by feature [F: *val*] on γ, [F:_] is also valued on α (*feature sharing*).

Derivation of OC:

- When an element with valued φ-features is merged while PRO is still accessible, this element can function as goal and Agree is established.

- φ-feature valuation takes place and PRO inherits the index of the goal DP as a side product (since PRO is referentially defective, it needs to be referentially identified; cf. also Sheehan 2017 as regards index sharing between controller and controllee)

  → PRO gets bound by the controller: OC is established

3.2   Adjunction in the vP domain

3.2.1 Basic observations

Recall: adjunction in the vP domain results in obligatory subject control

Illustration:

(68) **Die Seeschwalben**ᵢ fliegen im   Herbst nach Südafrika,   [CP **PROᵢ** um
    the sea.swallows fly   in.the fall   to   South.Africa.   in.order.to
    im   Winter überleben zu können].
    in.the winter survive   to can
    'In fall, the sea swallows fly to South Africa to be able to survive in winter.' (cf. (19))

Note:

Tree 1a illustrates the point in the derivation when the vP phase of the matrix clause is built up: it contains the vP adjunct as well as the subject in its base position, Specv.

General remarks concerning the subsequent trees:

- Note that the mother node of the subject is again represented as v', following the basics of Bare Phrase Structure.
- Having in mind the German data, the trees display OV-structures.
- As default, the adjunct is represented as CP, but nothing hinges on this. Generally, the inaccessible domain in trees like 1a comprises the domain of the highest phase within the adjunct.
- The trees all display right-adjunction structures as default; again, nothing would change if an adjunct were left-adjoined.
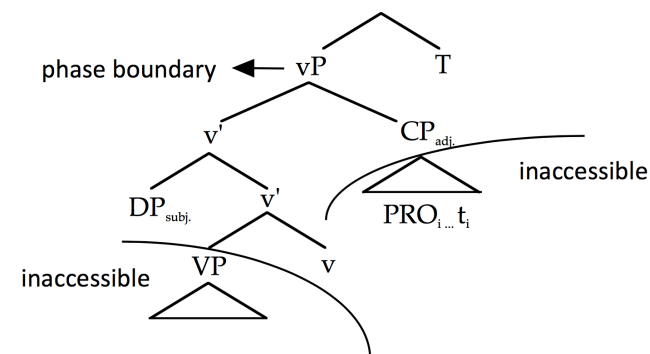
TREE 1a:
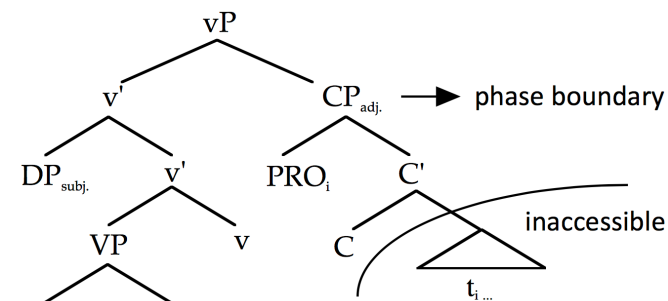
Movement inside adjuncts:

Since adjuncts are islands for extraction (cf. Huang 1982), the highest position to which PRO inside an adjunct can move is the edge of the highest phase in the adjunct; in our trees, this is SpecC inside the adjunct.

Accessibility:

At this point in the derivation, PRO, being at the edge of the CP phase, is still accessible (note that material below C inside the adjunct is not); however, as soon as the derivation proceeds and vP merges with T, material inside the adjunct becomes inaccessible; cf. tree 1b.

TREE 1b:

3.2.2 Obligatory subject control into adjuncts

Starting situation: tree 1a

Remark:

Following Kayne's (1994) category-based definition of c-command, the subject DP in Specv c-commands the vP adjunct (and thus PRO inside it).

(69)   *Category-based definition of c-command:*
   X c-commands Y iff X and Y are categories and X excludes Y and every category dominating X dominates Y. (cf. Kayne 1994: 16, 18)

(70)   a.   X excludes Y if no segment of X dominates Y.
   b.   X is dominated by Y only if it is dominated by every segment of Y.

<div align="right">(cf. Chomsky 1986: 7, 9)</div>

Analysis:

- PRO has unvalued φ-features and is looking for a suitable goal.

- $DP_{subj.}$ c-commands PRO (see above), is the closest potential goal, and PRO is in the accessible domain (cf. tree 1a).

➤ **Agree can be established, which yields the desired result:**
   obligatory subject control into the vP adjunct

TREE 1c:

AGREE ⟶ **OC**
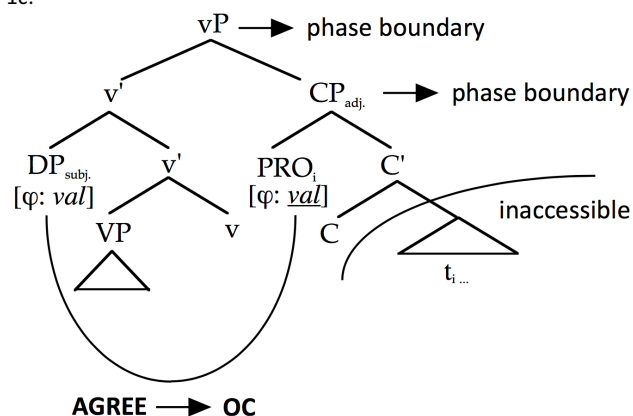
Note:

Although accessibility is a precondition for both Agree and movement, this is not yet a sufficient condition for movement;[6] hence, Agree into the adjunct can be possible while extraction out of it is illicit.

3.3   Adjunction in the VP domain

Recall: adjunction in the VP domain results in obligatory object control

Illustration:

(71) a. Eine Kerze   genügt   **ihm$_i$,**   [**PRO$_i$** um   sich   zurechtzufinden].
   a   candle   suffices   him$_{DAT}$ in.order.to   REFL   to.orientate
   'A candle is sufficient for him to orientate himself.' (cf. (9))

   b. Man bezahlte   **die Studenten$_i$,**   [**PRO$_i$** um   Flyer   zu   verteilen].
   one   paid   the students$_{ACC}$ in.order.to   flyer   to   hand.out
   'The students were paid to hand out flyers.' (cf. (8))

3.3.1 Obligatory object control into adjuncts involving DP$_{DAT}$

Underlying structure:

Following Anagnostopoulou (1999), Pylkännen (2002), McFadden (2004, 2005), Høyem (to appear) a.o., we assume that Appl° introduces the Dative argument; the underlying structure thus looks as indicated in tree 2a.

TREE 2a:

---
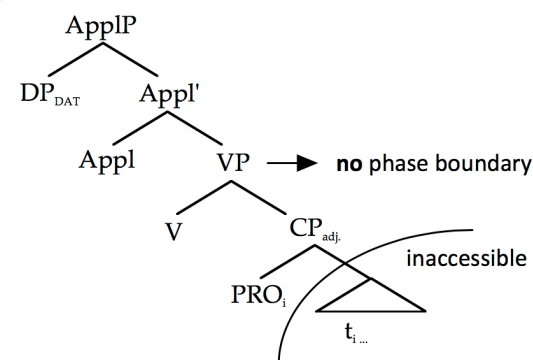
[6] For instance, movement might furthermore hinge on the insertion of edge features in the target phase, which might be impossible in certain syntactic configurations, as in the case of adjuncts (cf. Müller 2010).

Analysis:

- Since VP is not a phase, PRO is still accessible when DP$_{DAT}$ enters the derivation.

- DP$_{DAT}$ c-commands PRO, has valued φ-features, and is thus the closest goal for PRO.

➤ **Agree can be established, which yields the desired result:**
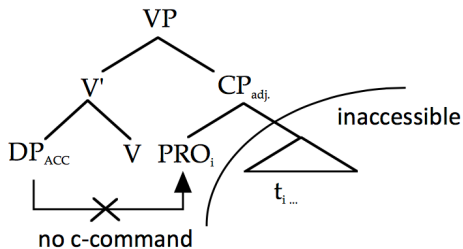**obligatory object control into the VP adjunct**

TREE 2b:
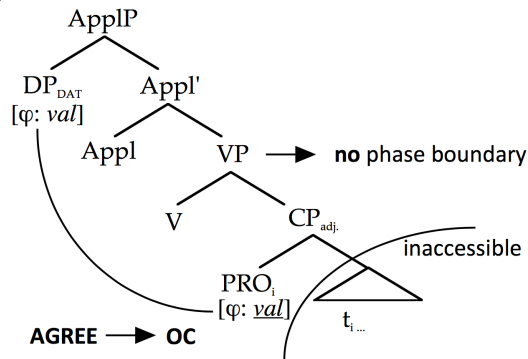
3.3.2 Obligatory object control into adjuncts involving DP$_{ACC}$

Starting situation: tree 3a

TREE 3a:

Structural differences between adjunct control by DP$_{subj.}$ vs. adjunct control by DP$_{ACC}$ (cf. tree 1a vs. tree 3a):

- DP$_{ACC}$ is in a complement position and not in SpecV; as a consequence, it does not c-command the adjunct, hence, it does not c-command PRO:
  → it is no potential goal for PRO

- VP (unlike vP) is no phase:
  → PRO is still accessible when VP merges with the next head (cf. tree 3b).

Analysis:

- The next head is v with the feature specification [φ:_, Case: *val*].

- v c-commands PRO (which is still accessible since VP is not a phase) and thus becomes the closest goal for PRO.

- On the other hand, v is connected to DP$_{ACC}$ in the following way: it is a goal for DP$_{ACC}$, which aims to value its Case feature; via Reverse Agree, the φ-features on v are valued.

- As a result, PRO's φ-features get also valued (by means of feature sharing; cf. (67-b))

➤ **Agree between v and PRO yields the desired result:**
obligatory object control into the VP adjunct (via the mediating v head)
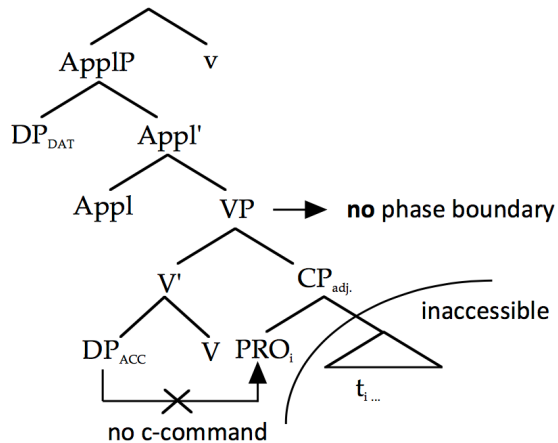
TREE 3b:
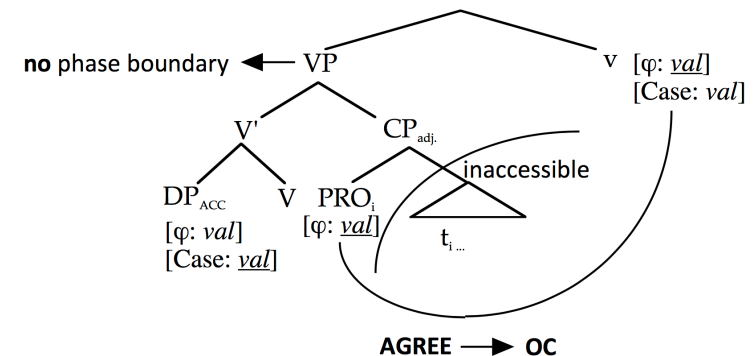
3.3.3 Prediction for DOC scenarios

Double object construction:

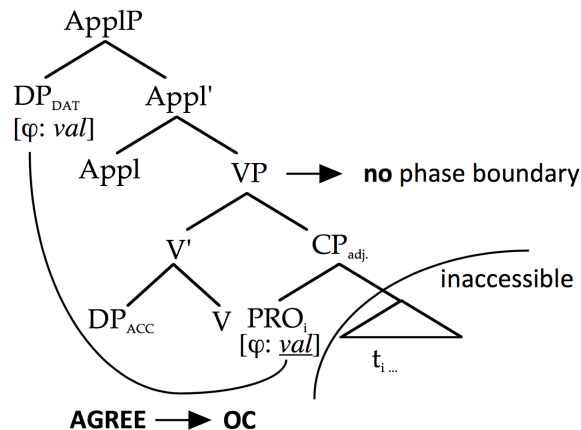What if both DP$_{ACC}$ and DP$_{DAT}$ are involved?

Prediction:

DP$_{DAT}$ would be the closer goal (compared to v), therefore we would expect OC with DP$_{DAT}$ as controller.

TREE 4a: *Underlying structure*

TREE 4b: *Agree between DP$_{DAT}$ and PRO*

Empirical evidence:

(72) a. *Man gab   der Raumsonde   **Roboter$_i$** mit, [**PRO$_i$** um   den Merkur
one   gave   the space.probe$_{DAT}$ robots$_{ACC}$ with   in.order.to the Mercury
erreichen zu   können].
reach   to   can
intended reading: 'Robots were placed aboard the space probe so that the robots
could reach Mercury.'

b. Man gab   **der Raumsonde$_i$**   Roboter mit, [**PRO$_i$** um   den Merkur
one   gave   the space.probe$_{DAT}$ robots$_{ACC}$ with   in.order.to the   Mercury
erreichen zu können].
reach   to   can
'Robots were placed aboard the space probe so that the space probe could reach
Mercury.'

➢ **The prediction seems to be borne out: only DP$_{DAT}$ can control PRO**

3.4   Adjunction in the TP and CP domain

Recall: a higher adjunction site yields NOC

3.4.1 NOC involving PRO$_{speaker}$

Illustration:

(73) a. ***TP adjunct:***
[PRO$_{speaker}$ Politisch betrachtet]   ist er eine Katastrophe.
politically considered$_{PAST.PTCP}$ is he a   disaster
'Politically, he is a disaster.' (cf. (35))

b. ***CP adjunct:***
Er ist, [PRO$_{speaker}$ ohne   zu übertreiben], weit   und breit   der
he is   without to exaggerate   widely and broadly the
beste Billiard-Spieler.
best   billiard-player
'He is, without exaggeration, the best billiard-player ever.' (cf. (32))

Similarities and differences between TP adjunction and vP/VP adjunction:

• TP is no phase (like VP and unlike vP) → PRO inside a TP adjunct (at its edge) is still
accessible when TP merges with the next head.

• Material in SpecT c-commands into the adjunct (cf. subject control from Specv into vP
adjuncts).

➢ In which respect does the relation between PRO inside a TP adjunct and a DP in SpecT
differ from the relation between PRO inside a vP/VP adjunct and its licensors?

Observation:

• PRO inside a vP adjunct:
when licensing PRO, DP$_{subj.}$ has the feature specification [φ: *val*, Case:_];

- PRO inside a VP adjunct:

  with DP$_{ACC}$ as controller:
  when licensing PRO, v starts with the feature specification [φ:_, Case: *val*];

  with DP$_{DAT}$ as controller:
  when licensing PRO, DP$_{DAT}$ starts with the feature specification [φ: *val*, Case:_]

- When a TP adjunct is merged into the derivation, accessible DPs have the feature specification: [φ: *val*, Case: *val*]

➢ Since DPs in SpecT or higher up seem to be unable to function as goal for PRO inside TP adjuncts, we assume that the valuation of their Case and φ-features (= "A-related" features) at an earlier stage has rendered them inactive for φ-Agree.

➢ We call this "φ-inactive".

TREE 5a:
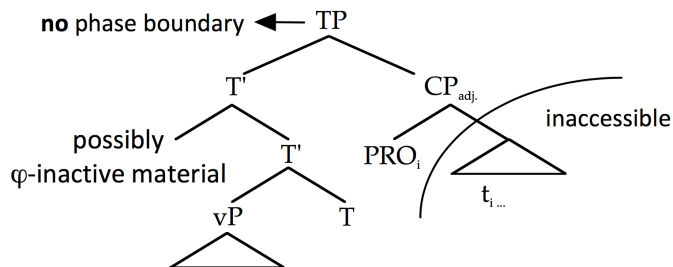
Observation:

Contexts in which PRO$_{speaker}$ surfaces typically involve the attitude of some attitude holder → attitudinal context

Assumption:

- Adopting assumptions from Speas (2004), Sigurðsson (2004, 2014), Sundaresan & Pearson (2014), Landau (2015), Fischer & Pitteroff (2016) a.o., we assume that logophoric anchoring is encoded in syntax in the following way:

➢ In attitudinal contexts, a logophoric center is projected in the left periphery, which introduces the attitude holder in a specifier position.

Analysis:

- This formally introduces the antecedent PRO needs for licensing (cf. tree 5b): when the attitude holder is merged into the derivation, PRO is still accessible and can agree with the former. As a result, PRO's φ-features can get valued.

➢ *Licensing of PRO$_{speaker}$:*
  (i)   also involves feature valuation under Agree (as in the case of OC)[7]
  (ii) boils down to standard logophoric licensing:
        the attitude holder is the antecedent a logophor needs for licensing (cf. Zribi-Hertz 1989); and recall that NOC PRO has long been shown to behave like a logophor (cf. Kuno 1975, Landau 2013, 2015 a.o.).

TREE 5b:
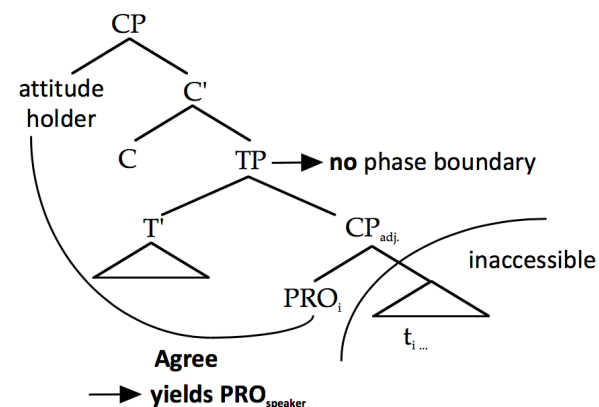
Notes:

(i) *attitude holder*: salient entity in the discourse which could be the speaker or a non-local antecedent (as in long distance control); via the logophoric center it becomes syntactically accessible to PRO.[8]

(ii) If a logophoric center were projected in the OC scenarios discussed in the previous sections, it would not affect the derived OC interpretations of PRO, since PRO (which would then be located in the vP/VP domain) would find its controller lower down in the structure and would moreover no longer be accessible at the point in the derivation when the left periphery would be derived.

On CP adjunction:

The analysis does not really differ from the one outlined above for TP adjuncts:

- potentially accessible φ-valued DPs cannot function as goal since they are already φ-inactive at this point in the derivation;

---

[7] In fact, formally this is OC involving the attitude holder as controller; but since the attitude holder need not be realized overtly at all, it gives the impression that there is no local, obligatory controller around.
[8] So it would actually be more precise to replace the term PRO$_{speaker}$ with PRO$_{attitude\ holder}$.
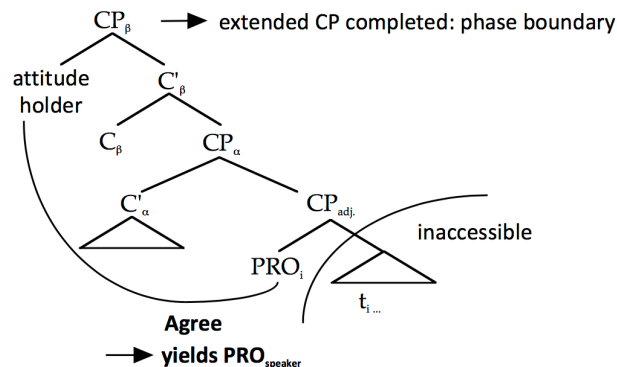
- however, in attitudinal contexts, a logophoric center is projected on top in the extended CP, which formally introduces a potential goal for PRO in terms of the attitude holder, cf. tree 6.

➢ As a result, PRO can agree with it and surfaces as $PRO_{speaker}$.

Notation:

We remain agnostic as to the precise labelling of the heads in the extended CP; in tree 6, we therefore simply use the labels C_α and C_β (for instance, following Sato et al. 2008, C_α could be called *Point-of-View Projection* (POVP)). Note, moreover, that the complete extended CP (CP_α plus CP_β) forms the next phase.

TREE 6:

CP_β → extended CP completed: phase boundary

attitude holder

Agree → yields $PRO_{speaker}$

3.4.2 NOC involving PRO_{arb}

Illustration:

(74) [PRO_{arb} Von Mainz kommend] empfiehlt sich die Fahrt mit der
from Mainz coming$_{PRES.PTCP}$ recommends REFL the journey with the
S-Bahnlinie 8 bis Wiesbaden Hauptbahnhof.
city-train.line 8 to Wiesbaden central.train.station
'When coming from Mainz, it is advisable to take the city metro line 8 to Wiesbaden central station.' (cf. (33))

Similarities between PRO_{arb} and $PRO_{speaker}$:

- Again, it does not make a difference as to whether we deal with TP or CP adjuncts.

- At the point in the derivation when the adjunct is adjoined, PRO cannot find a suitable goal to agree with: potential c-commanding DPs are already φ-inactive at this point of the derivation.

*Difference between PRO_{arb} and $PRO_{speaker}$:*

Since these contexts are not attitudinal, no logophoric center is projected in the left periphery.

Consequence:

- At this point in the derivation, it is therefore clear that PRO cannot find a goal to value its φ-features anymore (recall that PRO is no longer accessible once the matrix CP is completed).

- Hence, a last resort strategy comes into play to prevent the derivation from crashing (cf. also McFadden & Sundaresan 2016, Fischer 2017).

➢ last resort = default valuation of PRO's unvalued φ-features; as a result, PRO is interpreted as arbitrary PRO (cf. tree 7)

TREE 7:

no logophoric center is projected

default valuation yields PRO_{arb}

possibly φ-inactive material

inaccessible
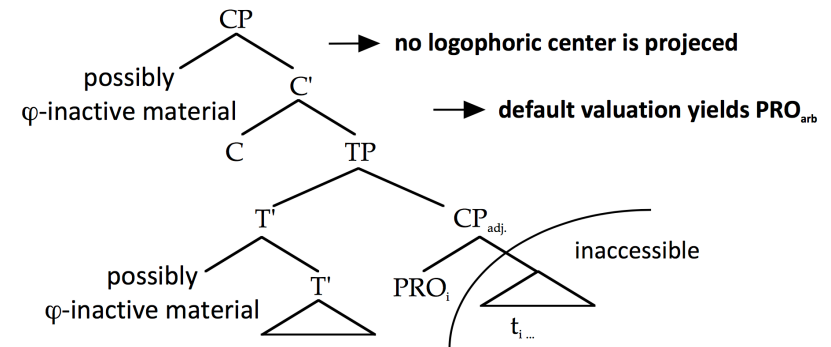
4. Conclusion

4.1 Empirical situation

Conclusion 1:

Although adjunct control comprises
- many different constructions and adverbials and
- the distinction between OC and NOC cuts through the set of examples,

it all seems to boil down to this one clear-cut distinction:

➢ **adjunction in the vP domain results in obligatory subject control**

➢ **adjunction in the VP domain results in obligatory object control**

➢ **a higher adjunction site yields NOC**

Conclusion 2:

We have considered data from German, Norwegian, and English, and conclusion 1 seems to hold for all three languages alike.

4.2 Theoretical implementation

➢ *Local modelling of control:*

The theory we have proposed is a phase-based approach, i.e. it is fully compatible with the PIC.

I. OC:

➢ *Licensing of OC under Agree:*

PRO = probe, controller = goal; by means of upward Agree, PRO is looking for an accessible goal to value its φ-features and thereby establish a binding relation.

➢ *Control into vP adjuncts:*

PRO agrees with the subject in Specv
→ obligatory subject control is predicted (cf. tree 1c)

➢ *Control into VP adjuncts:*

- object = DP_{DAT}: PRO agrees with DP_{DAT} in SpecAppl
  → obligatory object control is predicted (cf. tree 2b)

- object = DP_{ACC}: PRO agrees with v, which agrees with DP_{ACC} in CompV
  → obligatory object control is predicted (cf. tree 3b)

- DOC scenario: → obligatory object control by DP_{DAT} is predicted (cf. tree 4b)

II. NOC:

➢ *Licensing of NOC:*

- possibility 1: attitudinal contexts
  → projection of a logophoric center: syntactic encoding of the attitude holder in the left periphery
  → PRO = probe, attitude holder = goal (cf. trees 5b, 6); derives $PRO_{speaker}$
  → cf. also licensing of logophors

- possibility 2: non-attitudinal contexts
  → no projection of a logophoric center
  → PRO cannot find a suitable goal to value its φ-features
  → default valuation as last resort strategy (cf. tree 7); yields PRO_{arb}

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➢ *Control into TP/CP adjuncts:*

Due to the high positioning of PRO, only the NOC licensing strategies remain as an option; if there is an accessible overt DP around, it has already become φ-inactive at this point.

Remark on crosslinguistic variation:

Since we consider the different underlying adjunction sites to be the pivotal point, our analysis as such is language-independent:

➢ i.e., the lack of variation that we observe when we compare German, Norwegian, and English adjunct control is expected.

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