

Bars's Generalization and the Strict Cycle at LF

1. Introduction

Lebeaux (1994; 2009):

At least in cases such as (1-a), inverse relative quantifier scope is to be accounted for in terms of reconstruction.

- (1) a. | Some young lady t_1 seems t_1' to be likely t_1 to dance with every senator.
 $\exists > \forall; \forall > \exists$
- b. | Some young lady t_1 seems to herself t_1' to be likely t_1 to dance with every senator.
 $\exists > \forall; * \forall > \exists$
- c. Mary₂ seems to | some young lady t_2' to be likely t_2 to dance with every senator.
 $\exists > \forall; * \forall > \exists$

Generalization (Bars (1986, 517-542)):

Reconstruction of α to its trace β is blocked if α does not c-command β at S-structure.

- (2) | How likely t_1 to dance with every senator t_2 does | some young lady t_1 seem to be t_2' ?
 $\exists > \forall; * \forall > \exists$

Bars (1986, 541-542):

- The reading $\forall > \exists$ is lacking from (2) because the LF associated with this reading violates a constraint against unbound traces (cf. Fiengo's (1977) Proper Binding Condition): *some young lady* does not c-command its trace after LF-movement.
- (For another account of Bars's generalization see Sauterland and Elbourne (2002); see Neelaman and van de Koot (2010) for criticism).

Aim of the talk:

Present a derivational approach to Bars's Generalization and compare it with the representational account proposed by Neelaman and van de Koot (2010).

2. A Representational Approach

Neelaman and van de Koot (2010):

Bars's generalization (henceforth BG) holds because reconstruction of the A'-bar-moved predicate α to its trace β in (2) does not re-establish the internal structure of α at β . As a consequence, the A-moved quantifier cannot lower its scope *into* α .

Assumptions:

- Antecedent α and its trace β are base-generated and connected by local recursive percolation of "selectional requirements" (similar to slash-percolation in G/HPSG, see Gazdar et al. (1985), Pollard and Sag (1994)).
- A'-dependencies are connected by percolating the selectional requirement [*Op*]. A-dependencies are connected by percolation of [θ].

- If a percolated feature dominates the element it is supposed to be satisfied by, it is marked by "#" and stops percolating.

- (3) a. [_{TP} He [_{TP} T [_{VP} fired Bill]]] .
 $[\theta_{\#}]$ [θ_1] [$\theta_1, \theta_{\#}$] [θ_1, θ_2]
- b. [_{CP} Who [_{CP} did [_{TP} he [_{TP} T [_{VP} fire t]]]]] ?
 $[\theta_{\#}]$ [θ_1] [$\theta_{p, \theta_1, \#}$] [θ_{p, θ_1}] [$\theta_{p, \theta_1, \theta_2, \#}$] [θ_1, θ_2] [θ_p]

Syntactic reconstruction:

- A satisfied [*Op*] transfers the features of α onto the trace β : syntactic reconstruction (SynR). (θ does not have the capacity for SynR.)
- The features that [*Op*] transfers from α onto β may include selectional requirements percolated to α (such as a binding-feature [*B*], (4)). The requirements that β receives from α percolate up the tree until they are satisfied by an antecedent.

- (4) [_{TP} [_{PP} About himself] [_{TP} Bill [_{TP} T [_{VP} causes t]]]] .
 $[\theta_{p, \#}]$ [*B*] [*B*] [$\theta_{p, \theta_1, \#}, B, \#$] [θ_{p, θ_1}, B] [$\theta_{p, \theta_1, \theta_2, \#}, B$] [θ_1, θ_2] [θ_p, B, P]

Semantic reconstruction:

Semantic reconstruction (SemR: "interface reconstruction" in Neelaman and van de Koot (2010)) is due to the principle in (5).

- (5) *Semantic reconstruction*
 Let M be a member of the set of selectional requirements that encode movement and let α be the category that satisfies it.
- a. The initial scopal domain of α is the node in which M is satisfied.
- b. The scopal domain of α can be narrowed from n_1 to n_2 if n_1 and n_2 contain M and n_1 immediately dominates n_2 .

Important point:

- SynR of α does not place α 's internal structure at the position of the trace β ; it merely places the features of α at β .
- Since after SynR β does not exhibit the internal structure of the A'-moved α , it follows that (5) cannot lower the A-moved quantifier into the scope of the quantifier within the remnant α . This derives BG.

3. A Derivational Approach

Proposal:

BG follows if the LF-derivation is subject to the SCC (Chomsky (1973)).

- (6) *Strict Cycle Condition (SCC):*
 Within the current cyclic domain α , no operation may exclusively affect positions within another cyclic domain β that is dominated by α .

Background assumptions:

- There is one mechanism for SynR and SemR: lowering at LF, targeting traces.
- The copy theory of movement (Chomsky (1995)) is wrong.
- There is a separate LF-cycle, i.e., the single-cycle architecture (Groat and O'Neil (1996), Bobaljik (1995)) is wrong.

- (7) [How likely t_1 to dance with every senator]₂ does [some young lady]₁ seem to be t_2 ?
- $\exists > \forall; * \forall > \exists$

Comment:

- The LF-derivation of (7) proceeds cyclically (and bottom-up). At the matrix-TP cycle, *some young lady* (\exists) cannot undergo reconstruction because its base position t_1 is not contained in the TP-cycle yet (only t_2 is) (8-a).
- At the CP-cycle, the A-moved CP containing *every senator* (\forall) undergoes reconstruction to its base position t_2 (8-b).
- Since t_1 (the base position of \exists) is part of the moved CP, it is now also part of the current cyclic domain (CP). But reconstruction of \exists to t_1 is again blocked, this time by the SCC (TP is a proper subpart of CP), see (8-c).

- (8)
- a. [TP \exists_1 seem to be t_2]
- ↗ X ↘
- b. [CP [CP ... t_1 ... V ...]₂ does [TP \exists_1 seem to be t_2]]
- ↗ X ↘
- c. [CP – does [TP \exists_1 seem to be [... t_1 ... V ...]₂]]

Consequence:

Reconstruction of \exists below V is blocked; BG is derived.

4. Derivation vs. Representation

Question:

Can the two approaches be distinguished?

A conceptual issue:

- (5) computes relative scope without reference to *actual* c-command relations. Reconstruction never literally takes place in the syntax (if it would, it could apply recursively, thereby undermining BG). As a consequence, LF is not fully transparent (in the sense of von Stechow (1993)).
- In the derivational theory, relative scope is indicated transparently at LF.

4.1. Infinitives

Observations (cf. Haider (2003, 101), Sternefeld (2006, 583)):

- The German examples (9-a,b), which involve raising/restructuring infinitives, are ambiguous.
- If the remnant infinitive in (8) undergoes scrambling/topicalization, the result is no longer ambiguous (10-a,b); rather, the negative indefinite must have wide scope.
- This matches the pattern of BG. Hence, it should be accounted for by the same mechanism as (2).

- (9) a. weil niemand₂ [t_2 zu schlafen] schien
because no-one to sleep seemed
“because no-one seemed to sleep”
- $\neg \exists > \text{seem}; \text{seem} > \neg \exists$

- b. dass ihr niemanden zu beleidigen gelang
that her no-one to insult succeeded
“that she succeeded insulting no-one”
- $\neg \exists > \text{succeed}; \text{succeed} > \neg \exists$

- (10) a. weil [t_2 zu schlafen]₃ niemand₂ t_3 schien
because to sleep no-one seemed $\neg \exists > \text{seem}; * \text{seem} > \neg \exists$
- b. [t_2 Zu beleidigen]₃ ist ihr niemand₂ t_3 gelungen.
to insult is her no-one succeeded
 $\neg \exists > \text{succeed}; * \text{succeed} > \neg \exists$

Upskot:

- Under the derivational approach, the lack of the reading with narrow scope of $\neg \exists$ is an instance of BG: $\neg \exists$ cannot undergo reconstruction before the infinitive; after the infinitive has been put back, reconstruction of $\neg \exists$ is blocked by the SCC.
- The representational approach of Neeleman and van de Koot (2010) predicts the reading *seem/succeed* $>$ $\neg \exists$ to be possible (11).

- (11) weil [TP [TP t_2 zu schlafen]₃ [TP niemand₂]_r t_3 schien]]]
[Op_#] [θ] [θ] [Op_#] [Op_#] [Op_#] [Op_#]

Reasoning:

- The scope bearing element that is lower at S-Structure (the verb *scheinen*) is not part of the displaced remnant category but c-commands the trace of the remnant.
- The negative indefinite ($\neg \exists$) satisfies the selectional requirement [θ], which is percolated from the trace t_3 of the remnant. (Recall that [Op] transfers [θ] to t_3).
- Thus, according to (5), the scopal domain of $\neg \exists$ can be narrowed to t_3 , and $\neg \exists$ should be in the scope of *scheinen*, contrary to fact.

4.2. Multiple Scrambling

Differing predictions:

- Suppose two scope bearing arguments α and β are scrambled out of a predicate γ in a way that preserves their underlying order. Later, γ undergoes remnant movement (12).
- If non-surface scope exclusively comes about via reconstruction (and if there are no further argument-traces outside the fronted predicate), then the derivational approach predicts surface scope to be the only option (because of the SCC).
- The representational approach allows SemR of α to a non-trace position P if P is connected to α by a path of nodes bearing a selectional requirement satisfied by α . It therefore predicts ambiguity in (12).

- (12) a. [r ... t_1 ... t_2 ...]₃ ... [... α_1 ... β_2 ... t_3 ...]
b. derivational: $\alpha > \beta; * \beta > \alpha$
c. representational: $\alpha > \beta; \beta > \alpha$

- (13) a. weil ein Gedicht jeder auf sagen kann
because a poem every-one recite can
“because every-one can recite one poem”
- b. Auf sagen kann ein Gedicht jeder.
recite can a poem every-one
- $\exists > \forall; ? \forall > \exists$
 $\exists > \forall; * \forall > \exists$

Preliminary conclusion:

Our hunch is that scope inversion in (13-b) is harder to achieve than in (13-a), if it is possible at all (judgments are far from clear).

4.3. Idioms

Fanselow (2009):

Idiomatic readings are (sometimes) preserved under scrambling in German.

- (14) a. weil sie ihm einen Korb gegeben hat
because she him a basket given has
‘because she turned him down’
b. ?weil einen Korb ihm noch niemand gegeben hat
because a basket him yet no-one given has
- (15) a. weil man ihr goldene Brücken baute
because one her golden bridges built
‘because one smoothed the way for her’
b. ?weil goldene Brücken ihr nicht gebaut wurden
because golden bridges her not built became

Ackema and Neeleman (1998):

The idiomatic reading is lost if the remnant that has been created by scrambling subsequently undergoes topicalization (see also Numberg et al. (1994, 511-512)):

- (16) a. *Gegeben hat ihm einen Korb bisher niemand.
given has her a basket yet no-one
b. *Gebaut hat ihr goldene Brücken niemand.
built has her golden bridges no-one

Claim:

This recalls the pattern of BG. As such, it should be derived in the same way as (2).

Derivational account:

- If the interpretation of idioms requires reconstruction at LF, then the loss of the idiomatic readings in (16-a,b) follows.
- The argument that is part of the idiom (*einen Korb, goldene Brücken*) cannot be reconstructed before the predicate of the idiom (*geben, bauen*) is reconstructed (17-a). Later, the SCC blocks reconstruction of the argument (17-c).

- (17) a. [TP | goldene Brücken]₃ niemand t₂ |
b. [CP [VP t₃ gebaut]₂ hat ihr [TP | goldene Brücken]₃ niemand t₂ |]
c. [CP – hat ihr [TP | goldene Brücken]₃ niemand [VP t₃ gebaut]₂ |]

Representational account:

- If SynR were sufficient to achieve idiomatic interpretation, then this meaning should be preserved in (16-a,b) (SynR of scrambling and topicalization interact, (18)). Thus, idiomatic interpretation must require SemR.

- But principle (5), as it stands, has nothing to say about idioms as they do not involve computation of relative scope.

- In order to account for (16), the representationalist has to duplicate (5) for the purpose of interpreting idioms. (Whether it is possible to rephrase (5) in a way so as to cover both relative scope and idioms remains to be seen.)

- (18) [CP [VP t₃ Gebaut]₂ [c' ... [TP goldene Brücken]₃ [TP ... t₂ ...]]]
[Op₁#] [Op₂] [Op₂] [Op₁] [Op₁, Op₂#] [Op₁, Op₂] [Op₁, Op₂]

Caution:

- In the semantic form, reconstruction of the topicalized predicate via β -reduction (functional application) applies in any event (cf. Heycock (1995), Rullmann (1995), Lechner (1998)).
- In order to subsume cases such as (16) under BG, the derivational account must stipulate that idiomatic interpretation requires lowering at LF (not only β -reduction in the semantic form).

4.4. Behheaded Phrases

Generalization (Takano (2000)):

Phrases that have been behheaded by head movement are frozen in place (see also Sternefeld (2006, 337/531/534)).

- (19) a. * [VP Vom Rauchen einen Kattarh t₃]₄ bekann₃ er nicht t₁.
by smoking a sinistis caught he not
‘He did not catch a sinistis due to smoking.’
b. * [VP t₂ t₃]₄ bekann₃ er einen Kattarh₂ t₄ vom Rauchen.
caught he a sinistis by smoking
‘He caught a sinistis due to smoking.’

Hunch:

The Takano-Sternefeld generalization is an instantiation of BG.

Derivational account:

- The derivational theory subsumes (19-a,b) under BG if moved heads reconstruct.
- Namely, in the cyclic domain where the head can undergo LF-reconstruction for the first time, its trace is not accessible yet; head-reconstruction at a higher cycle (after reconstruction of the predicate) is blocked by the SCC.

Representational account:

- SemR (5) has nothing to say about (19-a,b) because no scope is involved.
- If SynR of the head also lowers its semantic features (actually assumed in Neeleman and van de Koot (2010)), then (19-b) is even predicted to be grammatical.

5. SynR ≠ SemR?

Potential Problem:

- The derivational proposal so far incorporates one and only one mechanism for SynR and SemR: syntactic lowering at LF.

- If it turns out that the mechanisms that derive SynR and SemR are not identical, then our theory must be enriched.
- The representational theory can handle a situation where SynR \neq SemR as it stipulates two separate mechanisms for SynR and SemR.

Two ways out:

- Argue that the evidence for decoupling SynR and SemR is not convincing (cf. Romero (1998) for reconstruction in *how-many* questions).
- Provide an explanation for the apparent independence of SynR and SemR.

5.1. Reviewing the Arguments

5.1.1. A-movement

Neelaman and van de Koot (2010):

- A-movement reconstructs for scope (SemR), recall (1).
- A-movement does not reconstruct for Principle A (SynR), see (20) and (21).

- (20) a. Jan₁ ziet | Marie₂ zichzelf_{1/2} getoond worden |.
 Jan sees Marie self shown been
 “Jan sees Marie being shown to herself.”
 b. Jan₁ ziet | zichzelf_{1/2} Marie₂ getoond worden |.
 Jan sees self Marie shown been

- (21) Jan₁ ziet | een foto van zichzelf_{1/2} Marie₂ getoond worden |.
 Jan sees a picture of self Marie shown been
 “Jan sees Marie being shown a picture of herself.”

Comment:

- The anaphor *zichzelf* in (20-b) and (21) is argued to undergo subject raising across the indirect object *Marie*.
- In this position, it can only be bound by the matrix subject *Jan*, i.e., there is no SynR for Principle A.

Potential flaw:

- It is unclear whether (20) and (21) are instances of ECM-constructions with *zichzelf* in subject position of the embedded clause.
- Possible hint: in German, passivization of an ECM-clause is ungrammatical (22-a,b) (in contrast to passivization of an object control clause; see (22-c) adapted from Fanselow (1991, 273)).
- If (20) and (21) were to be analyzed obligatorily as cases of object control, as in (23), then the binding asymmetries would follow without further ado.

- (22) a. *Max sieht die Zigarette (von Maria) geraucht werden.
 Max sees the cigarette (by Maria) smoked become
 “Max sees the cigarette being smoked (by Maria).”
 b. Max versprach mir (von ihm) eingeladen zu werden.
 Max promised me (by him) invited to become
 “Max promised me to be invited (by him).”

- (23) Jan₁ ziet zichzelf_{1/2} | PRO₁ Marie₂ getoond worden |.
 Jan sees self Marie shown been

“Jan sees himself being shown to Marie.”

5.1.2. A'-Movement

Neelaman and van de Koot (2010):

- If A'-movement reconstructs for Principle A (SynR), it always targets the foot of the chain, see (24-a) for Dutch.
- In contrast, if A'-movement reconstructs for scope (SemR), then it can target intermediate positions (including the foot), see (24-b).

- (24) a. [pP Aan zichzelf_{1/2}] ₃ zei Piet₁ [cp t₃' dat Jan₂ nooit t₃ gedacht heeft |.
 at self said Piet that Jan never thought has
 “About himself Piet said that Jan never thought.”
 b. Which paper₂ did every student claim [cp t₂' that no-one can read t₂]?
which paper > V; V > *which paper*

Potential flaw:

As Neelaman and van de Koot (2010, 341) note themselves, binding of the anaphor in the intermediate position is apparently excluded for independent reasons (25).

- (25) Piet₁ zei [cp dat [pP aan zichzelf_{1/2}] ₃ Jan₂ nooit t₃ gedacht heeft |.
 Piet said that on self Jan never thought has
 “Piet said that about himself Jan never thought.”

Lechner (1998):

- Scrambling of a direct object in German does not reconstruct below the indirect object for purposes of variable binding (26) and Principle A (27) (both to be accounted for by SynR, according to Lechner).
- In contrast, SemR for scope is no problem in these contexts (28). Therefore, SynR and SemR must be distinguished.

- (26) a. *weil die Maria | sein₂ Geschenk | ₃ jedem₂ t₃ überreicht habe
 because the Maria his present every-one given has
 “because Maria gave every-one his present”
 b. *weil | sein₂ Geschenk | ₃ die Maria jedem₂ t₃ überreicht habe
 because his present the Maria every-one given has
- (27) a. *weil der Peter | einige Freunde von einander₂ | ₃ den Gästen₂ t₃
 vorgestellt habe
 because the Peter some friends of each other the guests
 vorgestellt habe
 introduced has
 “because Peter introduced the guests to some friends of each other”
 b. *weil | einige Freunde von einander₂ | ₃ der Peter den Gästen₂ t₃
 vorgestellt habe
 because some friends of each other the Peter the guests
 vorgestellt habe
 introduced has

- (28) dass sie | mindestens einen Gast | ₂ fast jedem Freund t₂ vorgestellt hat
 that she at least one guest almost every friend introduced has
 “that she introduced at least one guest to almost every friend”

V > E; E > V

Potential flaw:

- The examples in (26) involve a finite auxiliary (*haben*) in the subjunctive (Konjunktiv II), which makes them sound clumsy to begin with. If the indicative form *hat* is used, variable binding is possible to the extent that scope inversion is possible in (28).
- As for (27-a,b), Grewendorf (1984) has argued that in German the direct object can A-bind an indirect object, but not the other way round. It follows that (27-a,b) would even be ungrammatical if SynR were possible.
- Examples with an indirect object containing the anaphor and preceding the direct object do not help: although in this case SynR for Principle A fails (Mollmann (1990), Santorini (1990)), an indirect object does not undergo SemR below a direct object either; thus, SynR and SemR pattern alike.

5.1.3. CP-Scrambling

Lechner (1998):

- CP-scrambling in German exhibits weak crossover effects (29-a) (lack of SynR according to Lechner) but obligatorily reconstructs for scope (29-b) (SemR).
- Therefore, SynR and SemR do not go hand in hand.

- (29) a. *dass₁ | seinen₂ Bruder zu behelbergen |₃ die Professorin keinem₂ t₃
that his brother to house the professor no-one
versprechen wollte
promise wanted
‘that the professor didn’t want to promise no-one to house his brother’
- b. weil | einen Hund zu füttern |₂ jeder t₂ versprochen hatte
because one dog to feed every-one promised had
‘because no-one had promised to feed at least one dog’
- V > E

Potential way out:

- Judgments are (as is often the case) not uniform: Grewendorf and Sabel (1994) judge (29-a) as grammatical.
- There may be an independent reason why scrambled CPs never reconstruct. If so, (29-b) may be the result of reconstruction in the semantic form via β -reduction (which, by stipulation, is not sufficient for variable binding in (29-a)).
- Note that this does not open up the possibility of deriving *any* case of reconstruction via β -reduction: β -reduction of scope bearing NPs (generalized quantifiers) requires raising of the type of their trace, which could be assumed not to exist.

- (30) a. [VP [CP ... \exists ...] [VP λ_2 [VP V [V’ t₂ versprochen]]]] \equiv
(t₂) (t) (t) (t) (t) ((e₁, t) (e₁, t) (t) (t, (e₁, t))
- b. [VP λ_2 [VP V [V’ t₂ versprochen]]] [CP ... \exists ...] \equiv
(t, t) (t) (t) ((e₁, t), t) (e₁, t) (t) (t, (e₁, t))
- c. [VP V [V’ [CP ... \exists ...] versprochen]] \equiv
(t) ((e₁, t), t) (e₁, t) (t) (t, (e₁, t))
- d. ...

5.1.4. Improper Movement

Neeleman and van de Koot (2010):

- SemR targets positions that are not landing sites for successive cyclic movement according to standard locality theory (viz. phase theory), for instance VP in (31).
- If SemR (to make it alike to SynR) is to be contingent on intermediate traces, additional landing sites must be stipulated (“every phrase is a phase”).
- This is incompatible with standard accounts of improper movement: cyclic landing sites such as t₃’ in SpecV in (31) are A’-positions; but then raising via SpecV is movement from A’-position to A-position (32): improper movement.

- (31) [pp In which class that he₁ is taking with Ms. Brown₂ |₃ will Bill introduce
every student₁ [VP t₃’ [V’ to her₂ t₃ |]] ?
- (32) John₂ [VP t₂’ [V’ is said t₂ to be smart |]].

Comment:

- This is correct, however, it also poses a problem for more standard versions of phase theory: in (32), raising must also pass via the matrix SpecV position, assuming that passives involve V, see Legate (2003).
- What seems to be called for is a theory of improper movement that is compatible with more recent versions of locality theory (see, e.g., Müller (2012)).

5.1.5. Weak Crossover

Lechner (1998):

- Scrambling in German can remedy weak crossover effects (33). This suggests that *seine Mutter* can undergo reconstruction at LF.
- Lechner (1998) argues that in German only NPs with weak determiners (in the sense of Milsark (1974)) can undergo SemR for scope.
- Since *seine Mutter* does not contain a weak determiner, it cannot have undergone SemR; therefore, it must have undergone SynR.

- (33) weil | seine₁ Mutter |₂ jeder₁ t₂ liebt
because his mother every-one loves
‘because every-one loves his mother’

Potential flaw:

- To illustrate that *seine Mutter* does not behave like a weak quantifier (with respect to SemR), one would have to show that it does not reconstruct for scope. But this is impossible because *seine Mutter* is a definite description, and definite descriptions do not take scope to begin with.

Lechner (1998):

- Even under the reconstructed reading V > E, the indefinite in (34) does not exhibit a non-presuppositional (existential) reading: the guests must be understood to be picked from a contextually given set.
- If SemR applies at LF (and not in the semantics) and if presuppositional indefinites must be outside VP at LF (Diesing (1992)), then the presuppositional interpretation is unexpected.

- (34) class sie | mindestens einen Gast |₂ fast jedem Freund t₂ vorgestellt hat
 that she at least one guest almost every friend introduced has
 “that she introduced at least one guest to almost every friend”

Potential way out:

- If the indirect object in (34) is high enough for the direct object to reconstruct to a position below the indirect object but still outside of VP, then the facts can be made compatible with Diesing (1992) without positing two mechanisms of reconstruction.
- In fact, Diesing (1992: 65-66) discusses a similar case where an indefinite which has low scope receives a presuppositional interpretation.

5.2. A Derivational Account of SynR

Scenario:

- Suppose the arguments for SynR \neq SemR turn out to be convincing. How can the derivational account of BG be held up?
- Since our account of BG places SemR at LF, and since SynR must be different from LF-lowering, one probably would have to place SynR *before* LF (placing SynR after LF does not seem to be reasonable).

Proposal:

Effects of SynR are to be derived by the derivational evaluation of the binding theory within the syntax (Lebeaux (1994; 2009)).

- (35) a. *Principle A:* An anaphor must be bound (within a certain domain) at some point in the derivation.
 b. *Principle B:* A pronoun must not be bound (within a certain domain) at any point of the derivation.
 c. *Principle C:* An R-expression must not be bound at any point of the derivation.
- (36) |pp About himself₂ |₃ John₁ said that Bill₂ never thinks t₃:
 a. |vp v |vp thinks | about himself | | →
 b. |vp | about himself |₃ v |vp thinks t₃ | | →
 c. |vp Bill₂ | about himself₂ |₃ v |vp thinks t₃ | | →
 d. ...

Comments:

- If binding applies as early as possible and once for all, then the derivational account predicts that *John* in (36) cannot bind the reflexive (see section 5.1.2.).
- Cases of variable binding are not covered (see section 5.1.2.).

- (37) | Some young lady |₁ seems to herself₁ t₁' to be likely t₁ to dance with every senator.
 ∃ > V; *V > ∃

Comment:

LF-lowering in (37) is not blocked by Principle A but because interpretation of *herself* as a bound variable requires it to be c-commanded at LF (cf. Lebeaux (1994, 32)).

- (38) a. John₂ seems to himself₂ t₂ to be a nice guy.

- b. John₂'s mother seems to him₂ t₂ to be the most wonderful woman on earth.

Question and Answer:

- Why is Principle C not violated in (38-a,b) (Lebeaux (1994))?
- The binding theory is not evaluated at *every derivational step* (as originally envisaged in Lebeaux (1994; 2009)) but only once a phrase has been completed.

- (39) John₂ seems to himself₂ t₂ to be a nice guy.
 a. [rp John₂ to be a nice guy | →
 b. |vp |pp to himself | seems [rp John₂ to be a nice guy || →
 c. |vp John₂ |pp to himself₂ | seems [rp t₂ to be a nice guy || →
 d. ...

Assumption:

The VP in (39-b) is not yet complete before *John* has moved to its edge (for locality reasons). In (39-c), the cycle is complete and the binding principles can be checked.

Question and Answer:

- In (39-c) *John* moves after the PP is merged while in (36-b) the PP moves before *Bill* is merged.
- At least in (39) the order is crucial for the anaphor to be bound (not so in (36-b) if there is subject raising). How is the difference justified?
- Movement to the pl(t)ase edge must apply as long as the phase head is still active (in the sense of Müller (2011)). *John* can move after Merge in (39) because *seem* is still active: it has to undergo subsequent head-raising (see word order).

- (40) a. | His₂ mother |₃ seems to John₂ t₃ to be the most wonderful woman on earth.
 b. *He₂ seems to John₂ t₂' to be expected t₂ to be a nice guy.

Comments:

- (40-a) satisfies Principle B the same way (39) does satisfies Principle C.
- Note that (40-b) cannot escape via the same loop hole as it violates Principle C.

6. Conclusion

- BG is derivable by a cyclic bottom-up LF-derivation plus the SCC.
- Reconstruction is ideally a uniform phenomenon. There is only one mechanism to derive both SemR and SynR: syntactic lowering at transparent LF.
- Arguments for SynR \neq SemR do not seem to be too convincing so far. If SynR and SemR turn out to be different, then the present account suggests to derive SynR derivationally in the syntax, i.e. before LF.

A final problem:

- (41) suggests that variable binding is not subject to BG (Neeleman and van de Koot (2010, 353)).
- If variable binding is enabled by lowering in (41), and if variable binding is computed is at LF, then our account of BG cannot be correct.

- The theory of Neelaman and van de Koot (2010) avoids this problem for the same reason for which it encounters the problem described in section 4.1.

(41) | How likely t_3 to pass the exam | t_4 does | his₂ weakest student | t_3 appear to be t_4 to every professor₂

Possible way out:

Variable binding might be possible in the semantic form due to β -reduction. The fronted infinitive is a predicate and undergoes SemR via λ -reduction in any event. If *his weakest student* is a definite description of type $\langle e \rangle$, it does, too.

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