Proper Binding
Kapitel 3 von "Incomplete Category Fronting"

Gereon Müller (Universität Leipzig)

October 22, 2013

1. The Problem

(1) $[_{VP}$ t$_2$ Gelesen $]_1$ hat $[_{IP}$ $[_{NP}$ das Buch $]_2$ $[_{IP}$ keiner t$_1$]]
      read   has   the book$_{acc}$ no-one$_{nom}$

(2) *John asked t$_1$ $[_{CP}$ who$_1$ Mary saw Bill]

2. The PBC at S-Structure

(3) *Fiengo (1977)*

 a. *t$_1$ was destroyed $[_{NP}$ the city $]_2$ by $[_{NP}$ the barbarians $]_1$
 b. *t$_1$ was $[_{NP}$ a fly $]_1$ on the wall

(4) a. $[_{NP}$ The city $]_2$ was destroyed t$_2$ by $[_{NP}$ the barbarians $]_1$
 b. There was $[_{NP}$ a fly $]_1$ on the wall

(5) a. *t$_1$ destruction (of) $[_{NP}$ the city $]_2$ by $[_{NP}$ the barbarians $]_1$
 b. $[_{NP}$ The city's $]_2$ destruction t$_2$ by $[_{NP}$ the barbarians $]_1$

(6) *The Proper Binding Condition* (PBC):
      Traces must be bound at S-structure.

3. The Generalized PBC

(7) *Who$_1$ do you think $[_{CP}$ t$'_1$ that $[_{IP}$ t$_1$ left early]]?

(8) *Who$_1$ do you think $[_{CP}$ t$''_1$ that $[_{IP}$ t$_1$ $[_{VP}$ t$'_1$ $[_{VP}$ left early]]]]?

(9) Who$_1$ do you believe $[_{CP}$ t$''_1$ that Mary said $[_{CP}$ t$'_1$ $[_C$ –] $[_{IP}$ t$_1$ left early]]] ?

(10) *Generalized Proper Binding Condition* (GPBC):
       Traces must be bound throughout a derivation.

(11) *Who$_1$ do you think $[_{CP}$ t$''_1$ that $[_{IP}$ t$_1$ $[_{VP}$ t$'_1$ $[_{VP}$ left early]]]]?

(12) *Last Resort*:
       α is raised to a position β only if β is a typical checking position for the lowest-ranked unchecked morphological feature of α.

(13) *Fewest Steps*:
       If two derivations D$_1$ and D$_2$ are in the same reference set and D$_1$ involves fewer checking operations than D$_2$, then D$_1$ is to be preferred over D$_2$.

4. The PBC at LF

4.1 The Approach

(14) *The Proper Binding Condition* (revised, Truckenbrodt (1992)):
       Traces must be bound at LF.

(15) a. $[_{VP}$ t$_2$ Gelesen $]_1$ hat $[_{IP}$ $[_{NP}$ das Buch $]_2$ $[_{IP}$ keiner t$_1$]]
           read   has   the book$_{acc}$ no-one$_{nom}$
 b. – hat $[_{IP}$ $[_{NP}$ das Buch $]_2$ $[_{IP}$ keiner $[_{VP}$ t$_2$ gelesen $]_1$]]

(16) *John asked t$_1$ $[_{CP}$ who$_1$ Mary saw Bill]

(17) who$_1$ John asked t$_1$ $[_{CP}$ t$'_1$ C$_{[+wh]}$ Mary saw Bill]

(18) Who$_1$ did John ask t$_1$ $[_{CP}$ whether Mary saw Bill] ?

4.2 Problems

4.2.1 Syntactic Lowering, Undone by Raising

4.2.1.1 Partial Wh-Movement in German

(19) a. Was$_1$ meinst du $[_{CP_4}$ was$_1$ C er gesagt hat $[_{CP_5}$ wen$_1$ er t$_1$ getroffen
           [+wh] think you   [+wh] he said has   whom$_{acc}$ he met
           hat]] ?
           has
 b. Was$_1$ meinst du $[_{CP_4}$ – dass er gesagt hat $[_{CP_5}$ wen$_1$ er t$_1$ getroffen
           [+wh] think you   that he said has   whom$_{acc}$ he met
           hat]] ?
           has

(20) a. *Was$_1$ glaubst du $[_{CP_4}$ was$_1$ er gesagt hat $[_{CP_5}$ was$_1$ er wen$_1$ getroffen
           [+wh] believe you   [+wh] he said has   [+wh] he whom$_{acc}$ met
           hat]] ?
           has
 b. *Was$_1$ glaubst du $[_{CP_4}$ was$_1$ er gesagt hat $[_{CP_5}$ dass er wen$_1$ getroffen
           [+wh] believe you   [+wh] he said has   that he whom$_{acc}$ met
           hat]] ?
           has

(21) a. Was$_1$ glaubst du $[_{CP_4}$ wen$_1$ er gesagt hat $[_{CP_5}$ t$''_1$ dass sie meint $[_{CP_6}$ t$'_1$
           [+wh] believe you   whom$_{acc}$ he said has   that she thinks
           dass sie t$_1$ liebt]]] ?
           that she loves
 b. Was$_1$ glaubst du $[_{CP_4}$ was$_1$ er gesagt hat $[_{CP_5}$ wen$_1$ (dass) sie meint
           [+wh] believe you   [+wh] he said has   whom$_{acc}$ that she thinks
           $[_{CP_6}$ t$'_1$ dass sie t$_1$ liebt]]] ?
                  that she loves

c. Was$_1$ glaubst du [$_{CP_4}$ was$_1$ er gesagt hat [$_{CP_5}$ was$_1$ sie meint [$_{CP_6}$
[+wh] believe you   [+wh] he said has   [+wh] she thinks
wen$_1$ (dass) sie t$_1$ liebt]]] ?
whom$_{acc}$ that she loves

(22) a. *Was$_1$ meinst du [$_{CP_4}$ was$_1$ C er t$_1$ gesagt hat [$_{CP_5}$ wem$_1$ er geschlafen
[+wh] think you   [+wh] he said has   whom$_{dat}$ he slept
hat]] ?
has

b. *Was$_1$ meinst du [$_{CP_4}$ dass er t$_1$ gesagt hat [$_{CP_5}$ wem$_1$ er geschlafen
[+wh] think you   that he said has   whom$_{dat}$ he slept
hat]] ?
has

(23) wem$_1$ meinst du [$_{CP_4}$ t$_1''$ C er t$_1$ gesagt hat [$_{CP_5}$ t$_1'$ er geschlafen hat]] ?

(24) Wem$_1$ meinst du [$_{CP_4}$ t$_1'$ dass er t$_1$ gesagt hat [$_{CP_5}$ dass er geschlafen hat]] ?
whom$_{dat}$ think you   that he said has   that he slept   has

4.2.1.2   Yo-Yo Movement in Ewe

(25) Kofi$_1$ e   me gble na t$_1$ [$_{CP}$ be *wo/é fo Kosi]
Kofi FOC I   said to   that he   hit Kosi
'It was Kofi that I told that he hit Kosi.'

(26) *Kofi$_1$ e me gble na t$_1$ [$_{CP}$ t$_1'$ be wo fo Kosi]

4.2.2   Remnant Movement That Is Not Reconstructed

(27) [$_{NP}$ Ein Buch   t$_1$]$_2$ hat Antje   [$_{PP}$ über die Liebe]$_1$ t$_2$ gelesen
a   book$_{acc}$ has Antje$_{nom}$ about the love   read

(28) [$_{NP}$ Was für ein Buch   t$_1$]$_2$ hast du [$_{PP}$ über die Liebe]$_1$ t$_2$ gelesen ?
what for a   book$_{acc}$ have you   about the love   read

(29) a. Worüber$_1$ hast du [$_{NP}$ ein Buch t$_1$] gelesen ?
about what have you   a   book   read

b. ??Worüber$_1$ hast du [$_{NP}$ das Buch t$_1$] gelesen ?
about what have you   the book   read

(30) ?[$_{NP}$ Welches Buch   t$_1$]$_2$ hast du [$_{PP}$ über die Liebe]$_1$ t$_2$ gelesen ?
which   book$_{acc}$ have you   about the love   read

(31) which [$_\alpha$ λx [x book about love]] C [$_{IP}$ [$_\beta$ λx [you read x]]]

4.3   The Gist of the PBC

(32) Variables must be bound at LF.

(33) a. Someone$_1$ believed [$_{CP}$ [$_{IP}$ Angleton suspected Philby]]

b. *t$_1$ believed [$_{CP}$ [$_{IP}$ someone$_1$ [$_{IP}$ Angleton suspected Philby]]]

(34) ?[$_{NP}$ Welches Buch   t$_1$]$_2$ hast du [$_{PP}$ über die Liebe]$_1$ t$_2$ gelesen ?
which   book$_{acc}$ have you   about the love   read

(35) which [$_\alpha$ λx [x book about love]] C [$_{IP}$ [$_\beta$ λx [you read x]]]

(36) ?[$_{NP_2}$ Welches Buch *[PP$_1$ über die Liebe]*] hast du [$_{PP_1}$ über die Liebe] *[NP$_2$ welches Buch [PP$_1$ über die Liebe]]* gelesen ?

5.   Chain Binding

(37) *Chain-Binding*:
X chain-binds Y iff X and Y are co-indexed, and
a.   X c-commands Y, or
b.   X c-commands a trace of Z, where Z = Y or Z contains Y.

(38) *The Proper Chain-Binding Condition* (PCBC, cf. Frank, Lee & Rambow (1992):
Traces must be chain-bound at S-structure.

(39) *[$_{NP}$ Which book about t$_1$]$_2$ don't you know [$_{CP}$ who$_1$ to read t$_2$]] ?

(40) *Derivational Proper Binding Condition* (DPBC):
A trace must be bound at one stage in the derivation.

6.   Strict Cyclicity

6.1   A Reformulation of the Strict Cycle Condition and the Cycle

(41) Movement is raising, in the specific sense defined by c-command.

(42) *Strict Cycle Condition*:
No rule can target a position that is dominated by a cyclic node and does not belong to the minimal residue of the head of this cyclic node.

(43) *Cycle*:
An XP becomes a cyclic node in the derivation iff movement to the minimal residue of its head takes place.

(44) ... [$_{UP}$ ... t$_1$ ... [$_{WP}$ ... [$_{YP}$ ... [$_{ZP}$ α$_1$ [$_{Z'}$ Z ...]] ...] ...] ...]

(45) *Cycle* (revised):
An XP becomes a cyclic node in the derivation as soon as it is part of a movement path.

(46) *Path*:
The Path from α to β is the set of nodes γ such that (a) and (b) hold:
a.   γ is reflexively dominated by the minimal XP that dominates both α and β.
b.   γ dominates α or β.

(47) *Path* (Collins (1994, 56)):
Let P$_1$ and P$_2$ be two categories in a tree. Let S$_1$ be the set of categories dominating P$_1$ and let S$_2$ be the set of categories dominating P$_2$. The path between P$_1$ and P$_2$ is

defined as follows:

$$\text{Path}(P_1, P_2) = (S_1 \cup S_2) - (S_1 \cap S_2)$$

(48) *Strict Cycle Condition* (revised):
If a landing site of movement is dominated by a cyclic node, it must belong to the minimal residue of the head of this cyclic node.

(49) [$_{CP_1}$ Who knows [$_{CP_2}$ what John did]] ?

(50) *Move α*:
    a. Movement of a category α to a position β, leaving a copy of α behind.
    b. Determination of cyclic nodes.
    c. Checking of the Strict Cycle Condition in β.

6.1.1 Standard Effects of Strict Cyclicity

(51) *How$_1$ do [$_{IP}$ you wonder [$_{CP}$ which car$_2$ [$_{IP}$ to fix t$_2$ t$_1$]]] ?

(52)
    a. *D-structure*:
        [$_{CP_6}$ – do [$_{IP}$ you wonder [$_{CP_5}$ – [$_{IP}$ to fix which car$_2$ how$_1$]]]] ?
    b. *Movement of 'how' to the embedded SpecC*:
        [$_{CP_6}$ – do [$_{IP}$ you wonder [$_{CP_5}$ how$_1$ [$_{IP}$ to fix which car$_2$ t$_1$]]]] ?
    c. *Movement of 'how' to the matrix SpecC*:
        [$_{CP_6}$ how$_1$ do [$_{IP}$ you wonder [$_{CP_5}$ t$_1'$ [$_{IP}$ to fix which car$_2$ t$_1$]]]] ?
    d. *Movement of 'which car' to the embedded SpecC*:
        [$_{CP_6}$ how$_1$ do [$_{IP}$ you wonder [$_{CP_5}$ which car$_2$ [$_{IP}$ to fix t$_2$ t$_1$]]]] ?

(53) Who$_1$ t$_1$ wonders [$_{CP}$ where$_2$ we bought what$_3$ t$_2$] ?

6.1.2 Lowering and Strict Cyclicity

(54)
    a. *John asked t$_1$ [$_{CP}$ who$_1$ Mary saw Bill]
    b. who$_1$ John asked t$_1$ [$_{CP}$ t$_1'$ C$_{[+wh]}$ Mary saw Bill]

(55)
    a. *Was$_1$ meinst du [$_{CP_4}$ was$_1$ C er t$_1$ gesagt hat [$_{CP_5}$ wem$_1$ er geschlafen
        [+wh] think you [+wh] he said has whom$_{dat}$ he slept
        hat]] ?
        has
    b. wem$_1$ meinst du [$_{CP_4}$ t$_1''$ C er t$_1$ gesagt hat [$_{CP_5}$ t$_1'$ er geschlafen hat]] ?

(56) *Who$_1$ do you think [$_{CP}$ t$_1''$ that [$_{IP}$ t$_1$ [$_{VP}$ t$_1'$ [$_{VP}$ left early]]]]?

(57) *Kofi$_1$ e me gble na t$_1$ [$_{CP}$ t$_1'$ be wo fo Kosi]

(58) *dass Fritz t$_1$ sagte [$_{CP}$ dem Peter$_1$ habe [$_{IP}$ keiner die Claudia
    that Fritz said ART Peter$_{dat}$ has$_{subj}$ no-one$_{nom}$ ART Claudia$_{acc}$
    gesehen]]
    seen

(59)
    a. Someone$_1$ believed [$_{CP}$ [$_{IP}$ Angleton suspected Philby]]
    b. *t$_1$ believed [$_{CP}$ [$_{IP}$ someone$_1$ [$_{IP}$ Angleton suspected Philby]]]

6.1.3 Remnant Movement and Strict Cyclicity

(60) [$_{VP}$ t$_2$ Gelesen]$_1$ hat [$_{IP}$ [$_{NP}$ das Buch]$_2$ [$_{IP}$ keiner t$_1$]]
    read has the book$_{acc}$ no-one$_{nom}$

(61)
    a. *D-structure*:
        – hat [$_{IP}$ keiner [$_{VP}$ [$_{NP}$ das Buch]$_2$ gelesen]$_1$]
    b. *Scrambling of NP$_2$ to IP*:
        – hat [$_{IP}$ [$_{NP}$ das Buch]$_2$ [$_{IP}$ keiner [$_{VP}$ t$_2$ gelesen]$_1$]]
    c. *Topicalization of VP$_1$ to SpecTop*:
        [$_{VP}$ t$_2$ gelesen]$_1$ hat [$_{IP}$ [$_{NP}$ das Buch]$_2$ [$_{IP}$ keiner t$_1$]]

(62)
    a. *D-structure*:
        – hat [$_{IP}$ keiner [$_{VP}$ [$_{NP}$ das Buch]$_2$ gelesen]$_1$]
    b. *Topicalization of VP$_1$ to SpecTop*:
        [$_{VP}$ [$_{NP}$ das Buch]$_2$ gelesen]$_1$ hat [$_{IP}$ keiner t$_1$]
    c. *Scrambling of NP$_2$ to IP*:
        [$_{VP}$ t$_2$ gelesen]$_1$ hat [$_{IP}$ [$_{NP}$ das Buch]$_2$ [$_{IP}$ keiner t$_1$]]