NOTES ON BINDING (GB VERSUS MP)

This is a somewhat prefatory paper introducing some of the arguments from the *Government and Binding Theory* on binding and the relevant solutions to binding phenomena from a more *Minimalist Perspective*. Since we have not dealt with this explicitly in the last session (01.12.2008) it may prepare us to be conceptually armed for the last chapter in Chomsky (1993: 32-44) labelled *Extensions of the Minimalist Program*. Here, again, I will make extensive use of **Hornstein et al.**, in particular their chapter on *Binding Theory* – in the hope that it be enlightening.

Remember that there exist some strong arguments against the assumption of a grammatical level of representation such as DS (**(i)** Recursion can be upheld via *Merge* and **(ii)** semantic interpretation can be done via the Theta-Criterion exclusively at LF). Binding phenomena are now a powerful set of arguments *in favour* of DS. The relevant core principles are given in UndMin: 248, and I repeat them here:

BINDING THEORY:

Principle A: An **anaphor** (e.g. a **reflexive** (*himself* etc.) or a **reciprocal** (*each other*) must be bound in its domain.

Principle B: A **pronoun** (*he, her* etc.) must not be bound in its domain.

Principle C: A **referring expression** (**R-expression**) (e.g. a name (*John, Mary* etc.), a variable (*cat, picture* etc.)) must not be bound (anywhere).

DOMAIN:

α is the domain for β iff α is the **smallest IP/TP containing β** and the **governor of β**.

BINDING:

α binds β iff α c-commands and is coindexed with β.

The famous instances of binding phenomena come (amongst others) from so-called *picture-NPs*, which are in essence constructions containing the NP *picture*.[1] Let me pick out an example of an unproblematic case.

(1) [Mary$_i$ said that [$_{TP}$ Joe liked these pictures of her$_i$].

(2) * [Mary said that [$_{TP}$ Joe$_i$ liked these pictures of him$_i$].

Since we are talking about pronouns here, Principle B is the one in question. Now (1) is unproblematic since the pronoun *her* is not bound in its smallest TP containing *her*, but it is bound by the matrix TP, in particular by *Mary*. Principle B predicts this to be a grammatical sentence and indeed it is. The indexing in (2), however derives an ungrammatical sentence, since in this case *him* is bound in its smallest TP by *Joe*, and because this is a violation of Principle B, we predict this sentence to be ungrammatical and indeed it is.

The problem is just that things are not always that easy. Recall what we want: We want to find arguments that would at least make DS questionable, this means that we would like to predict the grammaticalness and semantic well-formedness by doing it alone via movement in LF.[2] Let's have a look at (3):

(3) * [$_{TP}$ John$_i$ wondered [$_{TP}$ [which woman] liked [which pictures of himself$_i$]]]

The coindexation of *John* and *himself* is ungrammatical, as is clear by introspection. We know that if there were some relationship of the reflexive to an antecedent, then it would have to be something like *woman*. Anyway, if we move the whole *wh*-Phrases in LF[3], the reflexive himself would be bound by *John*, this instance would satisfy Principle A and we would predict (3) to be grammatical. This is bad, but there is one solution to this puzzle: What would happen if we move only the wh-element of the phrase that contains the

[1] It's just that the [N] *picture* contains an inherent reflexivity and thereby binding phenomena seem to be well presentable.

[2] Movement in LF is *exclusively covert*, so much for the footnote in the last Notes. Let us just stick to the LF fact that we need it for generating a syntactic output that is legible at the C-I interface.

[3] I leave out this movement here, but it is UndMin: 250 (6).

reflexive? In UndMin: 250, the suggestion is as follows:[4]

(4) * [$_{TP}$ John$_i$ wondered [$_{complex\ operator}$ which$_k$ + [which woman]$_j$] [$_{TP}$ t$_j$ liked [t$_k$ pictures of himself$_i$]]]

The good thing is now that we correctly derive the ungrammaticality of (3), since the binding domain of the reflexive is the embedded TP and thus *John* can not be the binding element. At this very moment of writing, I wonder why we move the whole [which woman]$_j$ phrase. Could *woman* not just stay *in situ*, leading to a structure such as (5)?

(5) * [$_{TP}$ John$_i$ wondered [which$_k$ + which$_j$] [$_{TP}$ t$_j$ woman liked [t$_k$ pictures of himself$_i$]]]

Let me pursue this train of thought one step further. If we replace *woman* with *man*, then coindexation in (5) would be possible but impossible in (4) since the whole wh-element [which man] would have been moved out and no binding of the reflexive himself would be possible. This would be highly undesirable because (6) is clearly grammatical.

(6) John wondered [$_{TP}$ which man$_i$ liked which pictures of himself$_i$].

If one moves out the complete *wh*-Phrase [which man], then himself loses its binding element and (6) should be ungrammatical. I think that – at this stage – it would be a reasonable argument for moving *wh*-elements *exclusively*.

Throughout the whole discussion, one big problem apparently seems to be the question of how to deal with *ambiguous binding phenomena*. The problematic case is given in the following.

(7) John wondered which picture of himself Fred liked.

The reflexive can have either John or Fred as its antecedent (but, of course, not both). Since I subject myself here to space limitations, I will make it short:

> Another possibility is to license binding throughout the derivation rather than apply the binding principles only at levels. So, for concreteness, say that we let binding apply anywhere in the course of the derivation. We could then either let *Fred* bind *himself* prior to the movement of the *wh*-phrase that contains *himself* or let *John* bind it after *wh*-movement. (UndMin: 251)

We can thereby save Principle A and still apply LF movement exclusively. Movement in LF is thus an *interspersed operation* that can apply when needed. Alas, if things were that easy. Chomsky himself poses the following problem:

(8) [The students]$_i$ asked what attitudes about [each other]$_{*i/k}$ [the teachers]$_k$ had.

Since reciprocals should fall under Principle A and thereby exhibit a similar behaviour, (8) should be ambiguous as well, but this is not so. Other problems with binding phenomena lead us to the assumption that *traces are to be disfavoured and instead to be replaces by so-called* ***copies***. Put bluntly, copies save the day in that we simply duplicate the *wh*-phrase and only interpret those parts of the relevant duplicates that yield the correct semantic interpretations at hand (cf. UndMin: 257 (18), (19)).[5]

Latter we will see how *wh*-chain reduction leads to the correct logical structure that feeds the semantic interpretation – it's basically "crossing out the elements you don't need".

[4] I think there are some problems with the bracketing. To my view, [which woman] should have brackets on its own, otherwise it would look like a domination relationship or something of this sort.

[5] One of the rare instances where I wrote "that's great" next to the text. That really is a great idea.