

Government, Agreement and Minimality
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1. As is well-known, the relation of government played a central role in the quasi-eponymous theory of government and binding (Chomsky 1981, 1986a,b). It is usually said that this relation plays no role in minimalist syntax, although this has never actually been demonstrated. Here I will show that such a relation is readily reconstructible, and consider whether it or the related notion of Agree is appropriate.

2. Some definitions.

(1) Syntactic object (SO):

- i. A **lexical item** (LI) is an SO.
- ii. A **feature bundle** $FB = \{F_1 \dots F_n\}$ is an SO.
- iii. If α is an SO and β is an SO, then **Merge**(α, β) = $\{K, \{\alpha, \beta\}\}$ is an SO (where $K = \alpha$ or β is the label of SO).

SOs are the atomic elements. Merge is the fundamental binary, iterative, combinatorial relation which creates all structures, permitting the following definitions:

- (2) i. In $\{K, \{\alpha, \beta\}\}$ α is the **sister** of the β and β is the **sister** of α .
- ii. In $\{K, \{\alpha, \beta\}\}$ K **contains** α and β .
- iii. In $\{K, \{\alpha, \beta\}\}$, where $K = \alpha$, α is the **head** of K .

Asymmetric c-command is the transitive closure of sisterhood and containment:

(3) α **asymmetrically c-commands** β iff β is contained in the sister of α .

Now we need only add a notion of intervener and a definition of minimal head in order to define (head-)government:

- (4) i. α is an **intervener** for an asymmetric, non-reflexive, transitive relation $R(\beta, \gamma)$ iff $[(R(\beta, \alpha) \ \& \ R(\alpha, \gamma) \ \& \ \neg R(\alpha, \beta))]$
- ii. α is a **minimal head of K** iff α is the head of K and α contains nothing.
- (5) Government: α **governs** β iff α c-commands β , there is no γ , an intervener for c-command(α, β) and α is a minimal head.

3. In the GB literature, slightly differing notions of government were applied to a range of syntactic relations including the following:

(6) (Internal) θ -role assignment, categorial and semantic selection, Case assignment, binding domains (whence the PRO theorem), licensing *pro*, licensing traces (the Empty Category Principle) and L-marking.

The question now is: do we need (5) in order to account for these relations? If not, then GB was substantially on the wrong track and minimalist approaches are (at least partly) an improvement. If so, then, at no real cost, we can reimport government into the current theory.

4. Looking again at (6), the first three relations really fall under sisterhood (2i), and as such are directly determined by Merge. Case assignment falls under Agree, defined as follows:

- (7) A Probe α Agrees with a Goal β iff:
 - (i) α asymmetrically c-commands β
 - (ii) α and β are non-distinct in formal features
 - (iii) there is no intervener.

In other words, Agree is the conjunction of (3) and (4i), with the further specification (7ii). As such it is very similar to (5) (it depends on both α and β being heads, as only heads bear formal features), but different in that not just any head is an intervener,

rather only a head with the relevant formal features. This permits T to Agree with the direct verbal object in unaccusatives where v is defective (lacking formal features), despite the fact that v is an intervening head:

(8) [TP .. T ... [vP v_{def} [VP V DP]]]

This correctly allows the deep object to act as a surface subject in Case/agreement terms, something which required extra stipulations regarding Case-assignment contexts in GB. So here at least Agree looks empirically superior to government.

The PRO theorem raises the general question of control. Hornstein (1999) has influentially argued that control should be assimilated to movement, i.e. raising. This has the advantage that the control relation, too, reduces to Agree. Here I present several arguments against Hornstein's specific approach, but retain the essential idea that (argument) control depends on Agree (see also Landau 2004). The crucial relation is a special case of Agree, where the formal features of the Goal are properly included in those of the Probe. Following Roberts (2010), this relation can lead to recoverable deletion of the Goal. So control is once again seen as "Equi-NP deletion", determined by Agree. Again, Agree replaces government.

Similarly, null arguments can be handled in terms of recoverable pronoun-deletion in the presence of sufficiently "rich" agreement (radical pro-drop of the East Asian type is different; see Saito 2007).

Minimalism has replaced traces with copies, giving rise to a simple and empirically adequate approach to reconstruction. However, the phenomena formerly captured by the ECP have been little discussed. The island phenomena associated with adjunct wh-movement are clear cases of intervention effects blocking a required Agree relation (see (4i) and Rizzi 1990):

(9) a. How did you say [John fixed the car (how)] ?
 b. *How did you wonder [whether John fixed the car (how)] ?

Argument copies seem to be immune to the intervention effect as they are able to be construed with their quantificational antecedent in a distinct way (by referential binding; Rizzi 2001). Subjects can never be extracted (Rizzi & Shlonsky 2005), perhaps because long-distance extraction is only possible from θ -positions. The infamous *that*-trace phenomenon arguably involves clause-union, as the same contexts allow auxiliary contraction to the higher verb (which can be seen as a kind of head-movement):

(10) a. *Who did you think that (who) left?
 b. Who do you think's best?

Clause-union eliminates the lower TP layer and so facilitates movement directly from the lower first-merged position.

L-marking defined "bounding domains", from which extraction was difficult or prohibited. This relation can be reconstructed as follows:

(11) If α is the functional sister to a lexical head then α is a barrier.

Taking T as lexical (=Aux), this isolates CP, DP and vP. These are the "phasal" domains of Chomsky (2000, 2001). Island effects arise from the Phase Impenetrability Condition, making the complements to these elements opaque to extraction. Rackowski & Richards (2005) argue that CP doesn't allow an escape hatch, and there is evidence that DP doesn't, so only vP does:

(12) a. *[DP How good a story about [DP a (how good) boy]] did you hear?
 b. [CP How good did John say [CP [your lasagne tasted (how good)]]]?

In general, minimalist theory does not need government: Agree and the PIC, both independently needed for locality, can replace all cases. A slight overall simplification has in fact been achieved.