

Chomsky's 1993 *Minimalist Program for Linguistic Theory* (MPLT) [pp. 6-19]

The computational system needs to be presented with lexical items in a format that makes them accessible to it. According to NC, that format is the X-bar schema.

The core of the X-bar schema is of course the head, and a large part of the first half of MMLT deals with relations to the head.

The most basic relation is the head-complement relation, that is, X-YP. This is also where *direct* theta marking takes place, whereas the theta-marking of the specifier is mediated by X'. In

- (1) I hit the ball
- (2) I hit the nail on the head
- (3) I hit upon Neven

the verb *hit* and its complement DP or PP object are in different relations to each other depending on the character of that object, and it is their compositional (X') meaning that then assigns different roles to the subject, even though the subject (Spec X) is always the same. There is evidently much more to this than that, but let's skip that for the moment.

There are three "local" relations in the X-bar schema: head-complement, head spec (via X'), and head-head, in that the selecting head of a phrase has a special relation to the head of the selected phrase. Since the head of each phrase projects its features onto the phrase as a whole, the phrase is, so to speak, "transparent," in that the selecting head can see through it right to the selected head. Hornstein, Nunes and Grohmann (HNG) call this the "periscope property" (178), following from the fact that the head determines the properties of the whole phrase.

On Case (General)

In GB, case was assigned under so-called m-command, that is, either to the complement or the specifier of the case assigning head: accusative and nominative, respectively. To understand what m-command is, let's go back to the notion of c-command:

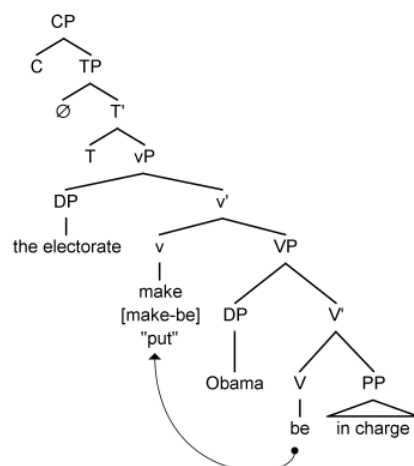
- (4) An element x c-commands another element y if neither dominates the other and the first branching node ("projection") dominating x also dominates y.
- (5) In other words: Each node in a structure dominates its sister and everything inside it, and nothing else.

The structure showing this relation is given here:

Looking at the heads only, C c-commands TP + everything inside it, but nothing else, T c-commands vP and everything inside it, but nothing else, v c-commands VP and everything inside it but nothing else, and finally, V dominates PP and everything inside it, but nothing else.

That is, heads c-command their complements and what is inside them.

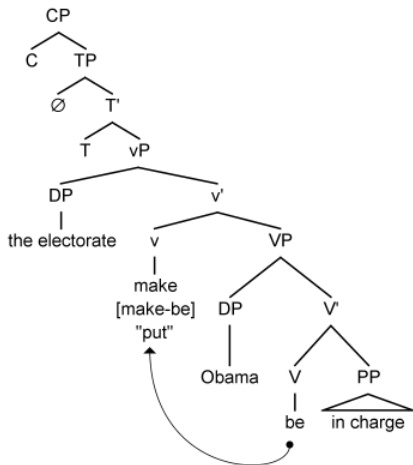
With m-command, the relations are quite different. To see this, we need to go to the definition of m-command.



The following definition is taken from James Ouhalla, *Transformational Grammar*, 2nd edition (JOTG2), 194:

- (6) x m-commands y if a) neither dominates the other and b) the first full phrase or, which is just another term, maximal projection, that dominates x also dominates y .

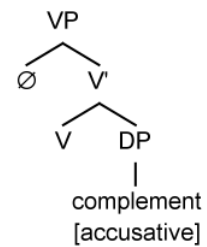
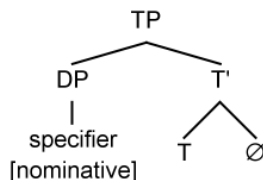
With regard to heads, this definition is both more liberal and more restrictive. Looking again at the previous example and testing our definition, restricting ourselves now to the lexical core of the tree, we see two things, namely



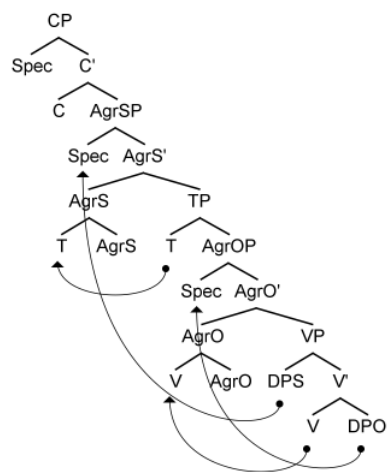
- (7) Different from c-command, m-command also extends to the specifier of a head, since these are contained in the first maximal projection that dominates the head, and
 (8) M-command by the head of a projection can't look inside the specifier or complement of the head, since everything inside the specifier or complement is in a maximal projection different from the one dominating the head.

Just to illustrate, V also m-commands its specifier-DP *Obama*, whereas c-command is restricted to the PP *in charge*. On the other hand, V now doesn't anymore m-command anything *inside* its complement or specifier, because all these elements are in a different maximal projection: PP in the case of the complement, and DP in the case of the specifier.

Significantly, MP moves away from case assignment under m-command, as given below:



In this first version of MP, case assignment/checking is unified: It always takes place in Spec Agr, either AgrO or AgrS.



On p. 7 of MPLT, we find the clause structure according to Pollock 1989 in a slightly simplified form. Since the "real" case assigners are assumed to be T and V, these two will have to move and adjoin to AgrS and AgrO respectively in order to fulfill their case-assigning/checking function, as illustrated in

- (9) $[_{AgrS} T AgrS]$, $[_{AgrO} V AgrO]$ (MPLT, p. 8)

Subject and object agreement and subject and case assignment are assumed to be parallel, and the core configurations responsible for inflectional morphology are taken to be head-head (as seen in the adjunctions in (9), where the verb is assigned(checked for agreement) and head-spec (where Subject & object are assigned/checked for case).

This is a striking case of case alternation emerging from similar structures, reminding us of the ECM case addressed above, and this brings us to the question of the ergative-absolutive vs. nominative-accusative languages discussed on pp. 9-10 in MMLT.

On Case (Ergative/Absolutive vs. Nominative/Accusative)

With regard to intransitive/transitive sentences, we find a striking distinction in the case systems of the languages of the world: Some are nom/acc, others are erg/abs. In the former, the case alternation between intransitive sentences and transitive ones consists in that in addition to the case of the subject, nominative, we get an additional case for the object, accusative. In a sense, there is no alternation at all since the subject still keeps the same case.

In the case of erg/abs., we have a different same/different distinction: There is a case, absolutive, that is always there, but which is realized on different syntactic items: the subject in intransitive sentences, and the object in transitive ones.

According to Chomsky, his sentential analysis as given on p. 7 of MPLT renders the difference trivial. He says that in intransitive sentences, one of the Agr-projections is either not there or inactive (“inert”), and that the whole difference thus reduces to the question where the subject of VP moves to: to Spec-AgrO or Spec-AgrS. Since we have lots of drawings of the relevant structures on this handout, I will not exemplify this here.

More interesting in this regard are Chomsky’s remarks on the first paragraph of p. 10 according to which the case assigned by the active Agr element is less marked, accompanied by more marked, i.e., richer agreement. The first remark is well documented – nom and abs generally are the default cases in the languages in question – but I’m wondering whether the remark about agreement, which should mean that we actually find more overtly realized object agreement in erg/abs languages can be empirically documented.

On 10, NC also say the same considerations apply to pro (and PRO), but for the moment, I’, not quite sure what exactly this means, certainly not as far as the technical implementation is concerned. Let’s put this to one side, without forgetting it, however. I think we should go through this article as thoroughly as possible.

The Major Definitions in “Part I” of MPLT

The major definitions on the first 19 pages of the article, indeed mainly p. 10 to 19, concern the notions *dominate*, *contain*, *segment*, *Max(x)*, *domain*, *complement domain*, *residue of X*, *minimal domain*, as well as some others.

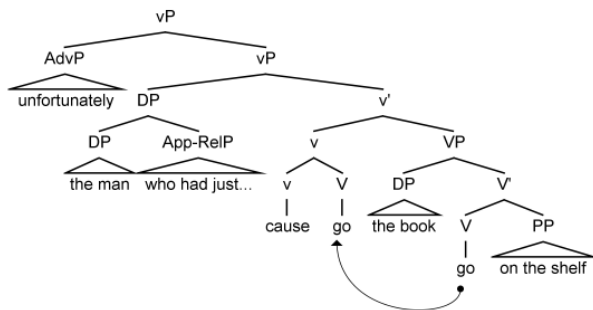
The problem with all these is that they are introduced in the text without stating what they are needed for. All the same, there is a consistent rationale for them:

- (13) The definitions always concern or go back to the relation of the head of a phrase to the rest of the phrase.

Let us now consider these definitions in turn, making use of the trees given in Chomsky, Ouhalla and Hornstein et al.

To understand this, we have to ask after the basic relations, and the basic relations are head-complement, head specifier, and adjunction. Crucially, we assume that there is no adjunction to X’, only to the X-head and XP. At the same time, adjunction leads to a “split” of the category some element is adjoined to into two tiers or *segments*, which *together* make up the category as a whole.

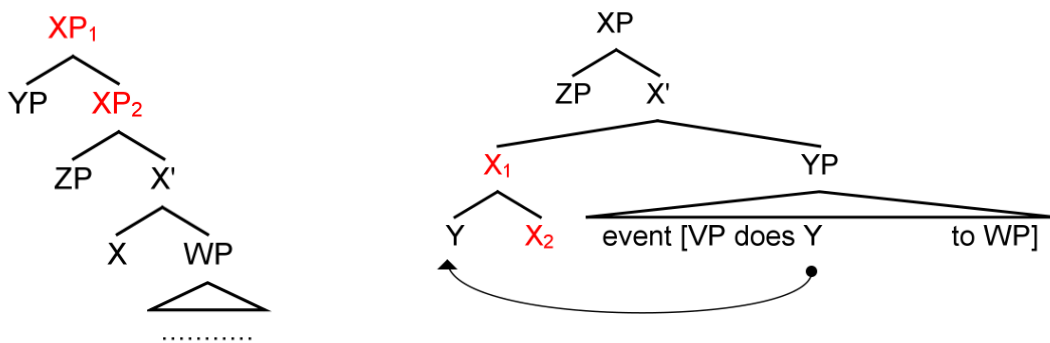
BTW, all this fuss about adjunctions seems to have something pedantic to it. The real point in pp. 10 to 19 seems to be to define the scope and limits of syntactic movements, but in the actual, real life examples given, adjunction only plays a role in the case of head-adjunction. All the same, let's turn the abstract structure on p. 11 into a hypothesized real life example (with some questionable analytical details, but that is not the point here):



Order aside, the basic structure here corresponds to the one given in (5) on p. 11 in MPLT. It should thus be good enough to demonstrate some basic definitions with a concrete example.

Segment: Heads and maximal projections (X and XP) can be expanded into elements/categories of the same sort by adjunction of a head in the case of X and a maximal projection in the case of XP,

giving rise to structures such as $[_X Y X]$ and $[_{XP} YP XP]$, order aside. In an $[XP/XP]$ adjunction structure or in an X/X adjunction structure, we have



Domination: A category X (X, X', XP) *dominates* another category Y iff Y is part of (contained in) each segment of X.

Containment: A category X (X, X', XP) *contains* another category Y iff at least one segment of X dominates Y.

Max(X): *Max(X)* is the smallest maximal projection dominating X. Thus Max(v) in the example above would be the two-segment category $[vP_1, vP_2]$, in short vP.

Domain of X (D(X)): The domain of X is the set of nodes *contained in Max(X) distinct from X and not containing X*. Thus above the domain of v would be *every node* which doesn't contain the label v.

Complement domain of X (CD(X)): The complement of X and every node within it. Above, that would be VP and every node within it.

Residue of X (R(X)): The remaining nodes in D(X).

With that much in place, NC on p. 12 goes on to explain that since syntactic relations are local, we're not interested in D(X) as such, but rather, in the minimal domain of X *MinD(X)*.

Interestingly, in Chomsky's own example (5), this doesn't make any difference, which tells us something about the grandmaster's didactic ambitions (and, perhaps, skills).

Be that as it may, in his example, $D(X)$ and $MinD(X)$ are exactly the same.

In giving the definition of $MinD(X)$, I take a leaf from HNG, and also from their hint that it has something to do with the older definition of m-command. Remember that m-command is both more liberal and more restrictive than c-command. Basically, m-command extends command to the nodes above X' . On the other hand, m-command stops at the complement.

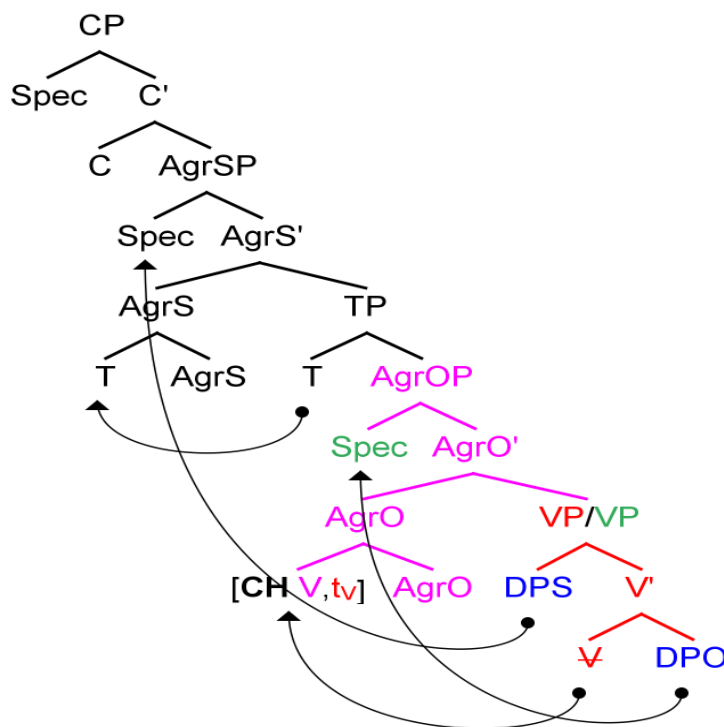
And here comes the crunch with regard to the HNG example (19) on p. 149: M-command only stops at everything *dominated* by the complement; that is, nodes that are only contained in the complement but not dominated by it are still under m-command.

This essentially gives us the definition of $MinD(X)$ given as (20) in HNG p. 149. From there, we derive the notions

Minimal complement domain of X (MinCD(X) aka internal domain of X (ID(X)): The complement of X and everything that is only contained in it but not dominated by it.

Minimal residue of X (MinR(X)), aka checking domain of X: All other nodes of $MinD(X)$.

We are now ready to look into the notion of $MinD$ of a chain CH, i.e., $MinD(CH)$, and it is illustrated in color below. $MinD(V)$ consists of the specifier and the complement of V – the “subject” and “object” DP, respectively, which I have marked in blue.



As projections of V, V itself (if we define the notion of projection as being reflexive), V' and VP do not belong either to the domain or the minimal domain of V.

This is reflected in the red marking of these nodes.

$MinD(AgrO)$ consists of the specifier and the complement of AgrO, that is, Spec AgrO and VP. They are marked green. Here, too, AgrO and its projections are not part of the minimal domain. They are marked in purple.

Now as $MinD(CH [V, t_V])$ is the union of $MinD(V)$, the syntactic locus V has moved from, and $MinD(AgrO)$, the syntactic locus V has moved to and adjoined to minus all projections of either V or AgrO, the new minimal domain is **Spec AgrO, DPS and DPO**. The fact that VP is a projection of V excludes it from the minimal domain of CH, even though it is in $MinD(AgrO)$.

The elements in $MinD(CH)$ are equidistant from each other. Since the relevant movement path is upwards, not downwards, and since the notion of equidistance is vacuous if we ask after the relation between Spec AgrO and DPS, the relevant relation is the one between DPO and Spec V on the one hand and DPO and Spec AgrO on the other. **As a result of creating the chain CH, Spec V and Spec AgrO are now equidistant from DPO.**