Shortest Move and Equidistance

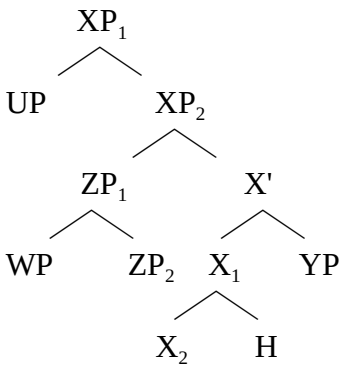
Howard Lasnik

[Definitions and analyses from Chomsky (1995) Ch. 3, pp. 177-186, except where indicated]

(1) α dominates β if every segment of α dominates β.
(2) α contains β if some segment of α dominates β. [Both of these are as in Barriers.]

(3) Max (α) = the least full-category [irreflexively] dominating α.

(4)



(5) In (4), Max (H) = Max (X) = XP

(6) Domain of a head α = the set of nodes [irreflexively] contained [in the sense of (2)] in Max (α) that are distinct from α and do not contain α.

(7) Domain of X in (4): {UP, ZP, WP, YP, H} and whatever these dominate
(8) Domain of H in (4): {UP, ZP, WP, YP} and whatever these dominate

(9) For any set S of categories, Minimal (S) = the smallest subset K of S such that for any $\gamma \in S$, some $\beta \in K$ reflexively dominates γ.
(10) (9) is intended to capture the local relations that a head participates in. One of its main purposes is to create a loophole in the Shortest Movement condition.

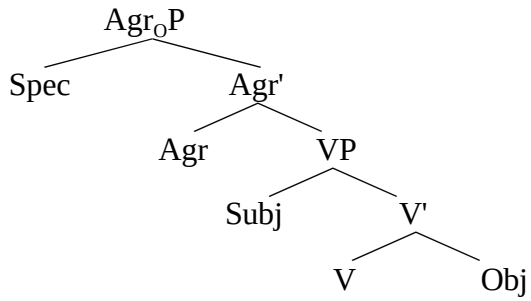
(11) In (4), the minimal domain of X is {UP, ZP, WP, YP, H} but **not** what these dominate.
(12) In (4), the minimal domain of H is {UP, ZP, WP, YP} but **not** what these dominate.

(13) Suppose ZP dominates Z and QP. Z and QP are then members of the domain of X. Are they members of the **minimal domain** of X?
(14) No, because without Z and QP, the set already includes members β such that every member γ of S (including Z and QP) is reflexively dominated by some β, and we are looking for the **smallest** subset.
(15) So the minimal domain of X is no bigger than the set given in (11). Could it be smaller? No, because nothing in that set is reflexively dominated by any other member of the set.

(16) If α is a trivial chain (one-membered) then Min (S (α)) is defined when α is lexically inserted.
(17) If α is non-trivial (β_1, ... β_n), then Min (S (α)) is defined when α is formed by raising β_1.

(18) For α non-trivial, the domain of α is the set of nodes contained in Max (α_1) and not containing any α_i.

(19)



(20) Obj must raise to Spec [for Case checking reasons], crossing Subj or its trace. This should violate the Shortest Movement Condition.

(21) **Equidistance**
If α, β are in the same minimal domain, they are equidistant from γ.

(22) In particular, 2 targets of movement are equidistant from the moving item if they are in the same minimal domain.

(23) If V adjoins to Agr, forming the chain (V, *t*), the minimal domain of (V, *t*) is {Spec, Subj, Obj}.
(24) Max ((V, *t*)) is Agr$_O$P. Dom ((V, *t*)) is {Spec, Subj, Obj} plus whatever these dominate.
(25) The minimal domain of (V, *t*) is then {Spec, Subj, Obj}.

(26) Hence, Spec and Subj (as well as Obj) are in the same minimal domain.
(27) So Spec and Subj are equidistant from Obj. Moving Obj to Spec is then making a shortest move. That is, there is no shorter move it could have made, just another equally short one.

(28) Raising of Obj should only be possible if V has raised to Agr.
(29) Overt object raising should only be possible with overt V-raising ("Holmberg's Generalization", though a clarification is in order as HG involves raising to **T**).

(30) Jólasveinarnir borðuðu búðinginn [$_{VP}$ ekki]
the Christmas trolls ate the pudding not

(31) *Jólasveinarnir hafa búðinginn [$_{VP}$ borðað]
the Christmas trolls have the pudding eaten

(32) Jólasveinarnir hafa [$_{VP}$ borðað búðinginn] [ex. added by HL]
the Christmas trolls have eaten the pudding

(33) *Jólasveinarnir hafa borðað búðinginn [$_{VP}$ ekki] [ex. added by HL]
the Christmas trolls have eaten the pudding not

(34) "If the verb has not raised overtly **at least to AgrO,** [emphasis mine] then Spec,AgrO and Spec,VP are not equidistant from the object and it is trapped in its base, VP-internal position." Bobaljik (1995, p.121) explicating Chomsky's argument. [Later, we will see why the standard paradigms involve raising all the way to T/Agr$_S$.]

(35) Covert object raising is always possible, if V always raises to Agr eventually.

(36) We seem to be led to the conclusion that overt object raising is not, then, driven by the need to check Case overtly. If Case were a 'strong feature' in Icelandic, (32) would be ungrammatical. We will return to the structure of (32) soon.

(37) As a result of the theory developed thus far, 'crossing' derivations are allowed, via equidistance. Now we need to rule out movement of Obj to Spec of Agr_S with Subj going to Spec of Agr_O.

(38) Suppose Subj raises to Spec of Agr_O, overtly or covertly.
(39) Now suppose V raises to Agr_O, overtly or covertly, forming the chain (V, t_v) with minimal domain {Subj, t_{Subj}, Obj}.
(40) Subj and t_{Subj} are now equidistant from Obj. But this doesn't help Obj. Spec of T (also Spec of Agr_S) is <u>not</u> in the same minimal domain as Subj and t_{Subj}.

(41) What if the V-Agr_O complex raises still further, to T and Agr_S? There is now a new minimal domain M, but t_{Subj} is not a member of M, so Obj cannot cross it.

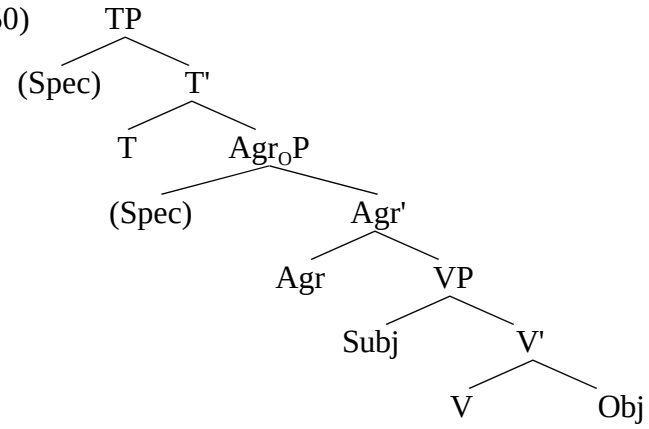
(42) Why is t_{Subj} not a member of M? Chomsky doesn't exactly say, and, in fact, if the raising creates a 4-membered V chain, then t_{Subj} should be a member of M.

(43) Bobaljik and Jonas (1996, p.201) offer a good answer, very likely the one Chomsky had in mind:
(44) Raising of the verb to Agr_O creates the chain (V, t_{verb}), and the complex head [$_{AgrO}$ Agr_O, V]. It is this complex Agr_O that raises further, creating an Agr_O chain and **not** another link of the V chain.
(45) Thus, there is no head chain for which, e.g., [Spec, TP], [Spec, Agr_OP], and [Spec, VP] are simultaneously equidistant from other elements.
(46) Thus, there is no way for Obj to escape.
(47) More generally, no more than one specifier position may ever be "skipped", at least when the relevant head movement is via adjunction. [Substitution is another matter entirely.]

(48) Final question: How does **subject** escape from VP?

(49) Given the tree in (50), when there is no overt 'V raising to T', subject should be trapped. It is not equidistant from Spec, Agr_OP and Spec, TP. [Similarly, if TP in English has no Spec, as Bobaljik and Jonas argue, and the target is Spec, Agr_SP.]

(50)



(51) Chomsky doesn't say anything at all about this question. But, again, Bobaljik and Jonas (1996) give a very plausible answer:

(52) "By hypothesis, specifier positions are freely generated; that is, a potential specifier position is present in the derivation only by virtue of its being filled or targeted by movement (a consequence of the operation Generalized Transformation [sic]). Whichever specifier position the subject moves to, the movement will not violate Shortest Movement if the specifier positions of the intervening phrases are not present at that stage of the derivation." p.200

(53) "... if [Spec, Agr_OP] and [Spec, TP] are not filled at the point in the derivation at which subject raises, then they are not present, and the target [Spec, Agr_SP] is the first appropriate landing site."

(54) The basis for this account had been suggested by Chomsky and Lasnik:

(55) "... we may assume [specifiers of functional heads] to be inserted in the course of derivation, unless some general condition on D-structure requires their presence." Chomsky (1995, p.54)

Bobaljik, Jonathan. 1995. *Morphosyntax: The syntax of verbal inflection*. Doctoral dissertation, MIT, Cambridge, Mass.

Bobaljik, Jonathan and Dianne Jonas. 1996. Subject positions and the roles of TP. *Linguistic Inquiry* 27: 195-236.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, Mass.: MIT Press.