Verbal Morphology: Syntactic Structures Meets the Minimalist Program

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I. Syntactic Structures (1957)

(1) John left
John should leave
John has left
John is leaving

(2) *John leftn't
*John didn't should leave
*John doesn't have left
*John doesn't be leaving

(3) John left
John should leave
John has left
John is leaving

(4) *Left John
*Did John should leave
*Does John have left
*Does John be leaving

(5) NP
Aux
V

(6) Aux - C (Modal) (have en) (be ing)

(7) C -

(8) T - optional

Structural analysis: same as #16
Structural change: $X_1 - X_3 - X_1 - X_3 - X_1 - X_3$

(10) T - optional

Structural analysis: same as #16
Structural change: $X_1 - X_3 - X_1 - X_1 - X_1 - X_1$

(11) Auxiliary Transformation ("Affix Hopping") - obligatory

Structural analysis: $X - AF - v - Y$ (where AF is any C or is en or ing; v is any M or V, or have or be)
Structural change: $X_1 - X_1 - X_3 - X_1 - X_1 - X_3 - X_1 - X_3 - X_1$

(12) Word Boundary Transformation - obligatory

Structural analysis: $X - Y$ (where $X\neq v$ or $Y\neq AF$
Structural change: $X_1 - X_3 - X_1 - X_3$

II. Verb Raising Analyses

(15) In the base, Aux includes only C and, optionally, Modal. When there is no modal, the 1st instance of have or be following the Aux is raised into the Aux. This makes possible a substantial limitation on the descriptive power of transformations: a non-variable term must be a constituent. The non-constituent terms in (8)-(10) above become simply Aux in such an analysis.

(16)a have-be Raising - obligatory
b Affix Hopping - demands adjacency between AF and v - obligatory
c do-support - obligatory and strictly ordered after a.

(17) Restatement in terms of 'head movement':
a $S$ is the maximal projection of the inflectional morpheme Infl (= C of Syntactic Structures).
b Infl takes VP as its complement.
c When the head of VP is have or be it raises to Infl, the next head up. (not is a modifier of VP?)
d Otherwise Infl lowers to V [under a condition of adjacency?].
e Otherwise do adjoins to Infl.

(18) The 'stranded affix' filter: A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure. (Lasnik (1981))

(19) UG principles are applied wherever possible, with language-particular rules used only to "save" a D-structure representation yielding no output. Verb raising and affix hopping are universal; do-support is language-particular. (Chomsky (1991))
In French, all verbs are capable of raising, not just have and be. Unlike the situation in English, affix hopping and do-support are never needed. (Emonds (1978))

Infl' is not one head; it consists of (at least) Tense and Agr, each heading its own projection.

English Agr, because not morphologically rich, is 'opaque' to θ-role transmission. Thus, if a verb with θ-roles to assign were to raise, it would be unable to assign them, resulting in a violation of the θ-criterion.

French Agr, because morphologically rich, is 'transparent' to θ-role transmission. (Pollock (1989))

III. Economy of Derivation

Raising is preferred to lowering, because lowering will leave an unbound trace that will have to be remedied by re-raising in LF. (Chomsky (1991))

Why isn't (25)a, with overt affix lowering followed by LF re-raising, preferred over (25)b, with language particular last resort do-support?

The Head Movement Constraint (reduced to an ECP antecedent government requirement) prevents the LF re-raising needed in the derivation of (25)a. The intervening head NEG cannot be crossed.

But then why is overt raising possible in French, and, in the case of have and be, in English as well?

If Agr moves, its trace can be deleted, since it plays no role in LF.

Deletion of an element leaves a category lacking features, [e].

Adjunction to [e] is not permitted. (Chomsky (1991))

The intervention head NEG cannot be crossed.

(30)a If Agr moves, its trace cannot be deleted.

b If V moves, its trace cannot be deleted.

c Deletion of an element leaves a category lacking features, [e].

d Adjunction to [e] is not permitted. (Chomsky (1991))

Strong lexicalism: verbs are pulled from the lexicon fully inflected.

There is thus no need for affix hopping.

Rather, the inflected V raises to Agr (and T) to 'check' the features it already has. This checking can, in principle, take place anywhere in a derivation on the path to LF. (Chomsky (1991))

(31)a When V overtly raises, (20)b, it first adjoins to Agr, creating (\( V \) Agr)\( _{\text{v}} \);

b Next, Agr raises to T, crossing NEG, thus leaving a trace that is marked [-\( y \)], indicating a violation of the ECP.

c Eventually, in accord with (30)a, the [-\( y \)] trace is deleted, so there is no ECP violation (where ECP is, as in Lasnik and Saito (1984;1992), an LF filter: *[-\( y \)].

When V vainly attempts to covertly (re-)raise in LF, (25)a, Agr has already lowered overtly to T, leaving an Agr trace (which deletes, leaving [e]), and creating a complex T,

b which has lowered to Agr, leaving a T trace and creating a still more complex Agr,

c which has lowered to V, leaving an Agr trace (which deletes, leaving [e]), and creating a complex V.

d This complex V raises to the (e) left by the deletion of the Agr trace, a movement that is, by (30)d, necessarily substitution, thus turning (e) into V.

e This element now raises across NEG to (the trace of) T, leaving behind a [-\( y \)] trace which is, crucially, a V trace, hence non-deletable. The resulting LF is in violation of the ECP.

Note that (30)a, (31)c are inconsistent with a central economy condition of Chomsky (1991): Deletion is only permitted to turn an ill-formed LF object onto a well-formed LF object, where the relevant well-formed objects are 'uniform chains' (chains all of whose members are \( X_{\text{fs}} \), are in A-positions, or are in A'-positions. This is precisely to prevent making a short licit head-, A-, or adjunct-movement, followed by a long illicit movement, with subsequent deletion of the offending trace. But exactly that is crucially being allowed here.

Another problem is that generally, an illicit movement results in some degradation (e.g., Subjacency effects), even if the offending trace is eventually eliminated. But the overt V-movement at issue here is fully grammatical.

IV. A Minimalist Approach

(Chomsky (1993))

Strong lexicalism: verbs are pulled from the lexicon fully inflected.

b There is thus no need for affix hopping.

c Rather, the inflected V raises to Agr (and T) to 'check' the features it already has. This checking can, in principle, take place anywhere in a derivation on the path to LF.

d Once a feature of Agr has done its checking work, it disappears.

(36) So what's the difference between French and English?

(37)a In French, the V-features of Agr (i.e., those that check features of a V) are 'strong'.

b In English, the V-features of Agr are 'weak'.

(38)a If V raises to AGR overtly, the V-features of AGR check the features of the V and disappear. If V delays raising until LF, the V-features of AGR survive into PF.

b V-features are not legitimate PF objects.

c Strong features are visible at PF; weak features are not. Surviving strong features cause the derivation to 'crash' at PF.

(39) This forces overt V-raising in French.

(40) In English, delaying the raising until LF does not result in an ill-formed PF object, so such a derivation is possible. What makes it necessary is:

(41) 'Procrastinate': Whenever possible, delay an operation until LF.

(42) Why do have and be raise overtly?

(43) Have and be are semantically vacuous, hence not visible to LF operations. Thus, if they have not raised overtly, they will not be able to raise at all. Their unchecked features will cause the LF to crash.

(44) Questions about (43): (1) Should syntactic operations, even those in the LF component, care about purely semantic properties? (2) There are languages (such as Swedish in (45)) where auxiliary verbs have inflectional features but do not raise overtly. (3) Even instances of have and be arguably possessing semantic content raise overtly.

(45)a ... om hon inte ofte har sett honom whether she not often has seen him

b * om hon har inte ofte sett honom

c * Om hon inte har ofta sett honom

(32)a Is there a solution / There isn't a solution

b Have you any money / I haven't any money

(46) *John not left

(47) Chomsky (1993) does not discuss how to rule out (46). Note that (32) does not carry over to this framework (even if we wanted it too), since (32) crucially relies on affix hopping.

V. Notes Towards a Hybrid Minimalist Account

(48) Chomsky's minimalist account demands that AGR and T are just abstract features that check against features of verbs when verbs raise to them. All the earlier accounts treated such Infl items as bound morphemes that had to become affixes. Can both possibilities coexist?

(49)a French verbs are fully inflected in the lexicon (possibly correlating with the fact that there are no bare forms; even the infinitive has an ending).

b Have and be are fully inflected in the lexicon (possibly correlating with the fact that they are highly suppletive).

c All other English verbs are bare in the lexicon.

(50) Infl is freely an affix or a set of abstract features.

(51)a Featural Infl is always strong (as are possibly all featural functional heads).

b Affixal Infl must merge with a V, a PF process demanding adjacency. Halle and Marantz (1993); Bobaljik (1993)

(52)a ... Infl ... V ... OK. V will overtly raise.

b ... Infl ... V ... OK. PF merger.

Af bare

c ... Infl ... V ... * at LF. +F of I won't be checked. +F bare

d ... Infl ... V ... * at LF. +F of V won't be checked. Af +F (Maybe * at PF also, if merger fails)

(53)a French Infl will thus always have to be featural.

b English Infl will always have to be featural, when the verb is have or be.

c English Infl will always have to be affixal with any other verb.

(54)a *John not left [Merger couldn't have taken place.] b *John left not [Left isn't in the lexicon, so no feature could drive raising.]

(55) Jean (n')aime pas Marie

(56) John has not left

(57) Why is raising allowed in (55), (56)? Here are 3 possibilities:

(58)a (32) above, as in Chomsky (1991).

b NEG is not a head, but a modifier. Note that its major role as a head had been to block (54)a, which is now irrelevant to the issue.

c [The most radical] There is no Head Movement Constraint. In any theory where movement is driven solely by the need for features to be satisfied, the standard HMC example is irrelevant: *Read John will and the book won't be generated simply because no feature will drive the movement of read to Comp. It is only finite verbs that raise to Comp, clearly indicating that the crucial feature is Tense.

VI. A Surprising Paradigm: Evidence for the Hybrid?

(59) John slept, and Mary will too

(60)a *John slept, and Mary will slept too

b John slept, and Mary will sleep too

(61) ?John was sleeping, and Mary will too

(62)a *John was sleeping, and Mary will sleeping too

b John was sleeping, and Mary will sleep too

(63) John has slept, and Mary will too

(64)a *John has slept, and Mary will slept too

b John has slept, and Mary will sleep too
Hypothesis 1: Any form of a verb V can be 'deleted under identity' with any form of V (reminiscent of Fiengo and May's 'vehicle change').

a) John was here, and Mary will too
b) John was here and Mary will be here too

Could it be that a trace can't serve as (part of) an antecedent for deletion?

Linguistics, I like, and you should to

Hypothesis 2: A form of a verb V can only be deleted under identity with the very same form. Forms of be and auxiliary have are introduced into syntactic structures already fully inflected. Forms of 'main' verbs are created out of lexically introduced bare forms and independent affixes.

a) John is not foolish
b) *Be not foolish
c) Be foolish

The imperative morpheme (generated in the position of Tense) is strictly affixal, hence there will never be raising to it (just merger with it)

b) OR Imp is freely affixal or featural, and be and auxiliary have are defective, lacking imperative forms in the lexicon.

a) *Not leave [Lack of adjacency blocks merger]
b) *Be foolish

Leave. I don't want to.

Mary left. I don't want to.

Be quiet. I don't want to.

Mary is quiet. *May not want to.

Bibliography


