Verbal Morphology: Towards a Minimalist Account

I. Syntactic Structures (1957)

(1) John left           John didn't leave
John should leave     John shouldn't leave
John has left         John hasn't left
John is leaving       John isn't leaving

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

(3) John left           Did John leave
John should leave     Should John leave
John has left         Has John left
John is leaving       Is John leaving

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

(5) S
   NP          VP
   |                      | Verb
Aux                  V

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

(7) C - $ in other contexts
    past in any context

(8) T(a) - optional  #16
    Structural analysis: same as #16
    Structural change: X₁ - X₂ - X₃ - X₄ - X₅ - X₆

(9) T₈ - optional  #17
    Structural analysis: same as #16
    Structural change: X₁ - X₂ - X₃ - X₄ - A - X₆

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))

(20) a *John likes not Mary
    b Jean (n')aime pas Marie

(21) 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))

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

(23) a English Agr, because not morphologically rich, is 'opaque' to 0-role transmission. Thus, if a verb with 0-roles to assign were to raise, it would be unable to assign them, resulting in a violation of the 0-criterion.  
    b French Agr, because morphologically rich, is 'transparent' to 0-role transmission. (Pollock (1989))

III. Economy of Derivation

(24) 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))

(25) a *John not writes books
    b John does not write books

(26) 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?

(27) 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.

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

(30) a If Agr moves, its trace can be deleted, since it plays no role in LF.  
    [(We actually need something stronger: The trace must be deleted, and must be deleted immediately.)]
    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))

(31) (A simplification, due to Ilhan Cagri: Deletion of a category completely eliminates that category, not just its features.)

(32) 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, which has lowered to Agr, leaving a T trace and creating a still more complex Agr.

(33) Note that (30)a, (31)c might be 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's, are in A-positions, or are in A'-positions) or operator-variable pairs. 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 that is crucially being allowed here.

(34) Another possible 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))

(35)a  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, the feature
     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)    So what's the difference between French and English?

(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 prop-
       ertries?  (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
   Af  +F

c  *  Om hon inte har ofta sett honom
=c  +F

(46)a  Is there a solution / There isn't a solution
b  Have you any money / I haven't any money

(47)a  *John not left
b  Chomsky (1993) does not discuss how to rule out (47)a.  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)   Inf is freely an affix or a set of abstract features.

(51)a  Featural Inf is strong in both languages.
b  Affixal Inf must merge with a V, a PF process demanding
       adjacency.  (Halle and Marantz (1993)); Bobaljik (1993))

(52)a  ... Inf1 ... V ... OK. V will overtly raise.
       +F +F
b  ... Inf1 ... V ... OK. PF merger.
       Af  bare

c  ... Inf1 ... V ... * at LF. +F of I won't be checked.
       +F  bare

d  ... Inf1 ... V ... * at LF. +F of V won't be checked.
       Af  +F  (Maybe * at PF also, if merger fails.

(53)a  French Inf will thus always have to be featural.
b  English Inf will always have to be featural, when the verb
       is have or be.
c  English Inf 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  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.
b  The Head Movement Constraint is 'relativized' to different
       kinds of heads, as in Roberts (1994).
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
John was here and Mary will too.

John was sleeping, and Mary will too.

John slept, and Mary will too.

VI. A Surprising Paradigm: Evidence for the Hybrid?

Hypothesis 1: Any form of a verb V can be 'deleted under identity' with any form of V (reminiscent of Flengo and May's 'vehicle change').

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.

John is not foolish.

John was here and Mary will too.

Mary is quiet. I don't want to.

Bibliography


