The English Verbal System:
A Case Study in Chomskian Explanation

Howard Lasnik
University of Connecticut
lasnik@sp.uconn.edu

I. Syntactic Structures (1957)

(1)a John may sing
   b John has sung
   c John is singing

(2)a John has been singing
   b John could have sung
   c John must be singing

(3) John could have been singing

(4)

(5) Aux ⇒ M
    Aux ⇒ HAVE
    Aux ⇒ BE
    Aux ⇒ M HAVE
    Aux ⇒ M BE
    Aux ⇒ HAVE BE
    Aux ⇒ M HAVE BE

(6) Aux ⇒ (M) (HAVE) (BE)

(7) Aux ⇒ M HAVE BE
(8) Aux ⇒ HAVE BE M
(9) Aux ⇒ BE M HAVE

(10) Aux ⇒ M
HAVE
BE

(11) 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
(12) John left — John did not leave
     John should leave — John should not leave
     John has left — John has not left
     John is leaving — John is not leaving

(13) John left — John **did** leave
     John should leave — John **should** leave
     John has left — John **has** left
     John is leaving — John **is** leaving

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

(15) Aux → C (Modal) (have en) (be ing)

(16) C → S in the context NP_{sing} —
     Ø in other contexts
     past in any context

(17) T_{not} - optional #16
  Structural analysis: NP - C - V...
                       NP - C+M - ...
                       NP - C+*have* - ...
                       NP - C+*be* - ...
  Structural change: X_1 - X_2 - X_3 → X_1 - X_2 + *n't* - X_3

(18) T_A - optional #17
  Structural analysis: same as #16
  Structural change: X_1 - X_2 - X_3 → X_1 - X_2 + *A* - X_3

(19) T_q - optional #18
  Structural analysis: same as #16
  Structural change: X_1 - X_2 - X_3 → X_2 - X_1 - X_3

(20) Auxiliary Transformation - obligatory #20
  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_2 - X_3 - X_4 → X_1 - X_3 - X_2# -X_4

(21) Word Boundary Transformation - obligatory #21
  Structural analysis: X - Y (where X≠*v* or Y ≠*Af*)
  Structural change: X_1 - X_2 → X_1 - #X_2

(22) *do* - Transformation - obligatory #22
  Structural analysis: # - *Af*
  Structural change: X_1 - X_2 → X_1 - *do* + X_2

(23) The fundamental insight of this system is that the tense-agreement inflectional morpheme ('C') is syntactically

independent, even though always a bound morpheme superficially.

(24) "...the treatment of 'do' as an element automatically introduced to carry an unaffixed affix will have a considerable simplifying effect on the grammar." Chomsky (1955/75, 419)

(25) Can the generalization in (24) be captured in a deeper way?

(26) (17) - (19) all have the same structural analysis. Is that a captured generalization or a missed generalization?

(27) "A grammar...is *descriptively adequate* to the extent that it correctly describes the intrinsic competence of the idealized native speaker... We may, correspondingly, say that *a linguistic theory is descriptively adequate* if it makes a descriptively adequate grammar available for each natural language." Chomsky (1965, 24)

(28) "To the extent that a linguistic theory succeeds in selecting a descriptively adequate grammar on the basis of primary linguistic data, we can say that it meets the condition of *explanatory adequacy*." Chomsky (1965, 25)

(29) Some potentially problematic aspects of the theory in terms of (28):
a Stipulated rule ordering
b Stipulated obligatory and optional rules
c Complicated structural analyses

II. Towards a more explanatorily adequate analysis

(30) 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 (or NegP?) 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, or the head of NegP, a complement of Infl?)
d Otherwise Infl lowers to V (under a condition of adjacency?).
e Otherwise do adjoins to Infl.

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

(32) This eliminates much of the strict rule ordering and arbitrary obligatory marking, but does not guarantee that do-support is a 'last resort', operating only when there is no other way to avoid a stranded affix.

(33) A syntactic version of the 'Elsewhere Condition' of Kiparsky (1973): If transformations T and T' are both applicable to a P-marker P, and if the set of structures meeting the structural description of T is a proper subset of the set of structures meeting the structural description of T', then T' may not apply. Lasnik (1981)

(34) The SDs of verb raising and affix hopping mention Infl and (aux) V, while that of do-support mentions only Infl.

(35) 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)

III. Comparative syntax

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

(37) In French, all verbs are capable of raising, not just have and be. Unlike the situation in English, afffix hopping and do-support are never needed. (Emonds (1978))

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

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

(40) 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)

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

(42) Why isn't (41)a, with overt affix lowering followed by LF re-raising, preferred over (41)b, with language particular last resort do-support?

(43)

NEG AGR_0P

AGR_0 VP

V

(44) The Head Movement Constraint (reduced to an ECP antecedent government requirement) prevents the LF re-raising needed in the derivation of (41)a. The intervening head NEG cannot be crossed.

(45) But then why is overt raising possible in French, and, in the case of have and be, in English as well? The answer is extraordinarily complicated. See the appendix if you are interested.

IV. A Minimalist Approach (Chomsky (1993))

(46)a Strong lexicalism: verbs are pulled from the lexicon fully inflected.
b There is thus no need for affix hopping; in fact, movement is defined so as to be upwards only.
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.

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

(48)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.

(49)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.
(50) This forces overt V-raising in French.

(51) 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:
(52) 'Procrastinate': Whenever possible, delay an operation until LF.

(53) Why do have and be raise overtly?
(54) 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.

(55) *John not left
(56) Chomsky (1993) does not discuss this problem. There is no obvious solution.

(57) Conceptual question: Which of the following is the a priori better theory?
(58) "Move α" Displace anything anywhere, subject to general output conditions (conditions which very often have the effect of excluding lowering; see Lasnik and Saito (1984,1992) for discussion).
(59) Define movement as upwards only.

Appendix

(60)a If AGR moves, its trace can be deleted, since it plays no role in LF.
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)

(61)a When V overtly raises, (25)b, it first adjoins to AGR_0, creating $[_{AGR0}$ V $AGR_0]$;
b Next, AGR_0 raises to T, crossing NEG, thus leaving a trace that is marked [-γ], indicating a violation of the ECP. That trace is an AGR;
c Eventually, in accord with (35)a, the [-γ] trace is deleted, so there is no ECP violation (where ECP is, as in Lasnik and Saito (1984;1992), an LF filter: *[-γ].

(62)a When V vainly attempts to covertly (re-)raise in LF, (30)a, AGR_S 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_0, 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_0 trace, a movement that is, by (35)d, necessarily substitution, thus turning [*e*] into V.
e This element now raises across NEG to (the trace of) T, leaving behind a [-γ] trace which is, crucially, a V trace, hence non-deletable. The resulting LF is in violation of the ECP.

References

Chomsky (1957) Syntactic Structures; (1965) Aspects of the Theory of Syntax; (1991) "Some Notes on Economy of Derivation and Representation"; (1993) "A Minimalist Program for Linguistic Theory"

Emonds (1978) "The Verbal Complex V'-V in French"

Kiparsky (1973) "Elsewhere in Phonology"
Lasnik (1981) "Restricting the Theory of Transformations: A Case Study"; (1995) "Verbal Morphology: Syntactic Structures Meets the Minimalist Program"
Lasnik and Saito (1984) "On the Nature of Proper Government"; (1992) Move α
Pollock (1989) "Verb Movement, Universal Grammar, and the Structure of IP"