

Verbal Morphology:
Syntactic Structures Meets the Minimalist Program

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I. English vs. English; English vs. French

- (1) A traditional description of the verb system, modernized 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.
- (2) The 'stranded affix' filter: A morphologically realized affix must be a syntactic dependent of a morphologically realized category, at surface structure. (Lasnik (1981))
- (3) (2) eliminates much of the strict rule ordering and arbitrary obligatory marking of Syntactic Structures, but does not guarantee that do-support is a 'last resort', operating only when there is no other way to avoid a stranded affix.
- (4) 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))
- (5) The SDs of verb raising and affix hopping mention Infl and (aux) V, while that of do-support mentions only Infl.
- (6) More recent alternative: 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))
- (7)a *John likes not Mary
 b Jean (n')aime pas Marie
- (8) 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))
- (9) 'Infl' is not one head; it consists of (at least) Tense and Agr, each heading its own projection.
- (10)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))

II. Economy of Derivation

- (11) 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))
- (12)a *John not writes books
 b John does not write books
- (13) Why isn't (12)a, with overt affix lowering followed by LF re-raising, preferred over (12)b, with language particular last resort do-support?
- (14)

NP	AGR _s P
	AGR _s '
AGR _s	TP
	T NEGP
	NEG AGR _o P
	AGR _o VP
	V
- (15) The Head Movement Constraint (reduced to an ECP antecedent government requirement) prevents the LF re-raising needed in the derivation of (12)a. The intervening head NEG cannot be crossed.
- (16) But then why is overt raising possible in French, and, in the case of have and be, in English as well?
- (17)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))
- (18)a When V overtly raises (French), (7)b, it first adjoins to AGR_o, creating [AGRO V AGR_o];
 b Next, AGR_o 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 (17)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]).
- (19)a When V vainly attempts to covertly (re-)raise in LF (English), (12)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_o, 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_o trace, a movement that is, by (17)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.

- (20) Note that (17)a, (18)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 Operator-variable pairs and 'uniform chains' (chains all of whose members are X⁰s, 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.
- (21) A related problem is that generally, an illicit movement results in some degradation (e.g., Subadjacency effects), even if the offending trace is eventually eliminated. But the overt V-movement at issue here is fully grammatical.

III. A Minimalist Approach

i. (Chomsky (1993))

- (22)a Strong lexicalism: verbs are pulled from the lexicon fully inflected.
 b There is thus no obvious 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.
- (23) So what's the difference between French and English?
- (24)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.
- (25)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.
 d This forces overt V-raising in French.
- (26) 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:
- (27) 'Procrastinate': Whenever possible, delay an operation until LF.
- (28) Why do have and be raise overtly?
- (29) 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.
- (30) Questions about (29): (1) Should syntactic operations, even those in the LF component, care about purely semantic properties? (2) If English subjunctives have a V feature to be checked, have and be evidently can raise in LF (and, along with main verbs, do so across negation). (3) Even instances of have and be arguably possessing semantic content raise overtly.
- (31)a I desire that John not leave
 b I desire that John not be here
- (32)a Is there a solution / There isn't a solution
 b Have you any money / I haven't any money
- (33) The potential problem in (32) (which will dissolve later) clearly arises in other languages, such as Swedish, where auxiliary verbs pattern exactly with main verbs in remaining in situ in embedded clauses:

- (34)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

- (35) *John not left
- (36) Chomsky (1993) does not discuss how to rule out (35). Note that (19) does not carry over to this framework (even if we wanted it too). This much is clear: it must be ruled out, but its derivation must not crash. If it crashed, it couldn't block (37), since Procrastinate only chooses among convergent derivations.
- (37) *John left not

ii.

- (38) At the core of 'economy' approaches, of which the 'minimalist' approach is the latest, is the concept of choosing the best among competing derivations. It has never been clear in general, however, what determines the relevant comparison set. Chomsky (1994) has suggested a highly principled answer: To begin a derivation, you choose from the lexicon all the items you will use, annotating each with a counter indicating how many times it will be used. Call this collection a 'numeration'. The comparison set includes all and only derivations from the same numeration. This has the positive effect that (39)a does not block (39)b (or vice versa), since the numerations differ with respect to there.
- (39)a There is someone here
 b Someone is here
- (40) In line with strong lexicalism, forms of do, just as much as there, are in the lexicon. Do, when it occurs, will then be part of a numeration. Derivations with and without do are not comparable. The 'last resort' nature of do-support cannot be directly captured. I note this problem here, but put it aside.

IV. Notes Towards a Hybrid Minimalist Account

- (41) Chomsky's lexicalist account demands that AGR and T are just abstract features that check against features of fully inflected verbs which raise to them. The earlier accounts treated such Infl items as bound morphemes that had to become affixes on otherwise bare verbs. Can both possibilities coexist? (42) sketches such a possibility.
- (42)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, but see below).
 c All other English verbs are bare in the lexicon.
- (43) Infl is freely an affix or a set of abstract features.
- (44)a Finite featural Infl is strong in both French and English.
 b Affixal Infl must merge with a V, a PF process (distinct from syntactic head movement) demanding adjacency. Halle and Marantz (1993); Bobaljik (1993))

(45)a ... Infl ... V ... OK. V will overtly raise.
+F +F

b ... Infl ... V ... OK. PF merger.
Af bare

c ... Infl ... V ... * at LF. +F of I won't be checked;
+F bare * at PF as well, since +F is strong.

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

(46)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.

(47)a *John not left {Merger couldn't have taken place because of non-adjacency.}
b *John left not {Left isn't in the lexicon, so no feature could drive raising.}

(48) Jean (n')aime pas Marie

(49) John has not left

(50) Why is raising allowed in (48), (49)? Here are 3 possibilities:

(51)a NEG and V are heads of different sorts, rendering an even more relativized version of RM irrelevant. (cf. Roberts (1994))

b NEG is not a head, but a modifier. Note that its major role as a head had been to block (47)a, which is now irrelevant to the issue. There must, though, be some distinction between not and adverbs since the latter don't block merger.

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 t 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.

V. Asurprising Paradigm: Evidence for the Hybrid?

(52) John slept, and Mary will too

(53)a *John slept, and Mary will slept too
b John slept, and Mary will sleep too

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

(55)a *John was sleeping, and Mary will sleeping too
b John was sleeping, and Mary will sleep too

(56) John has slept, and Mary will too

(57)a *John has slept, and Mary will slept too
b John has slept, and Mary will sleep too

(58) **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').

(59) *John was here, and Mary will too

(60)a *John was here and Mary will was here too
b John was here and Mary will be here too

(61) Given that finite forms of be raise, while finite forms of main verbs do not, could it be that, for some reason, a trace can't serve as (part of) an antecedent for deletion?

(62)a Linguistics, I like t, and you should like linguistics too

b ?Someone will be t in the office. Yes there will be someone in the office.

c That this approach will fail is likely t. No it isn't likely that this approach will fail.

(63) A candidate for a verb trace anteceding deletion of a verb: Pseudo-gapping as overt NP raising to SPEC of AGR_o followed by VP ellipsis. (Lasnik (1994))

(64)a John hired Bill and Mary will Susan

b John [_{VP} hired [_{AGR_P} Bill [_{VP} t t]]] and Mary will [_{AGR_P} Susan [_{VP} hire t]]

(65) ?John should have left, but Mary shouldn't have left

(66) *John has left, but Mary shouldn't have left

(67) John has a driver's license, but Mary shouldn't

(68) ?*John hasn't a driver's license, but Mary should

(69) **Hypothesis 2** (merely a descriptive generalization): A form of a verb V other than be or 'auxiliary' have can be 'deleted under identity' with any form of V. A form of be or auxiliary have can only be deleted under identity with the very same form.

(70) Is this difference related to (degree of) suppletion?

(71) John went, and Mary will too

(72) *John was being obnoxious, and Mary will too

(73) The paradigm of go is highly suppletive, yet apparent deletion under incomplete identity is allowed. Progressive form of all verbs, including be, is completely regular, yet such deletion is significantly degraded.

(74) *John slept, and Mary was too

(75) John slept, and Mary was sleeping too

(76) John Infl sleep, and Mary was ing sleep too

(77) *John will sleep. Mary is now.

(78) John will sleep. Mary is sleeping now.

(79) **Hypothesis 3:** 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.

(80) John Infl sleep, and Mary will sleep too

(81) John was ing sleep, and Mary will sleep too

(82) John has en sleep, and Mary will sleep too

(83) John will be here, and Mary will too

(84) ?*John has been here, and Mary will too

(85) Still mysterious: perfect does not pattern with progressive. The apparent stranded affix effect of (76) disappears in (86):

(86)a John slept and Mary has too

b John wrote a best-seller and Mary has too

- (87)a John is not foolish
 b *Be not foolish
 c Be foolish
- (88)a 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 (like main verbs) lack imperative forms in the lexicon.
- (89)a *Not leave {Lack of adjacency blocks merger}
 b *Not be foolish
- (90) Leave. I don't want to.
 (91) Mary left. I don't want to.
- (92) Be quiet. I don't want to.
 (93) Mary is quiet. *I don't want to.
- (94)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
- (95) Swedish verbs, like French verbs, are pulled from the lexicon inflected. The features responsible for V-raising are weak in Swedish, strong in French.

Bibliography

- Akmajian, Adrian, Susan Steele, and Thomas Wasow. 1979. The category AUX in universal grammar. *Linguistic Inquiry* 10.1-64.
- Aronoff, M. 1976. *Word Formation in Generative Grammar*. Cambridge, MA: MIT Press.
- Baker, C.L. 1991. The syntax of English not: the limits of core grammar. *Linguistic Inquiry* 22.387-429.
- Bobaljik, Jonathan David. 1993. What does adjacency do? Cambridge, MA: MIT, ms.
- Borer, Hagit. 1994. On the projection of arguments. *Functional Projections* (University of Massachusetts Occasional Papers 17), ed. by Elena E. Benedicto and Jeffrey T. Runner, 19-47. Amherst, MA: GLSA.
- Bošković, Željko. 1994. Participle movement in Serbo-Croatian and related issues. Storrs: University of Connecticut, ms.
- Chomsky, Noam. 1955. The logical structure of linguistic theory. Cambridge, MA: Harvard University, ms. [1975. New York: Plenum Publishing].
- Chomsky, Noam. 1957. *Syntactic Structures*. The Hague: Mouton.
- Chomsky, Noam. 1980. On binding. *Linguistic Inquiry* 11.1-46.
- Chomsky, Noam. 1981. Lectures on Government and Binding. Dordrecht: Foris.
- Chomsky, Noam. 1986. *Barriers*. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1991. Some notes on economy of derivation and representation. *Principles and Parameters in Comparative Grammar*, ed. by Robert Freidin, 417-54. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1993. A minimalist program for linguistic theory. *The View from Building 20*, ed. by Kenneth Hale and S.J. Keyser, 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 1994. Bare phrase structure, MIT Occasional Papers in Linguistics, Number 5. Cambridge, MA: MIT.
- Chomsky, Noam and Howard Lasnik. 1993. The theory of principles and parameters. *Syntax: An International Handbook of Contemporary Research*, ed. by Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld, and Theo Vennemann, 506-69. Berlin: Walter de Gruyter.
- Emonds, Joseph. 1978. The verbal complex V'-V in French. *Linguistic Inquiry* 9.151-75.
- Epstein, Samuel David. forthcoming. Scope marking and LF V2. *Linguistic Inquiry*.
- Fiengo, Robert and Robert May. 1994. *Indices and Identity*. Cambridge, MA: MIT Press.
- Halle, Morris and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. *The View from Building 20*, ed. by Kenneth Hale and S.J. Keyser, 111-76. Cambridge, MA: MIT Press.
- Kayne, Richard S. 1989. Notes on English agreement. New York: Graduate Center, CUNY, ms.
- Kiparsky, Paul. 1982. From cyclic phonology to lexical phonology. *The Structure of Phonological Representations* (Part I), ed. by Harry van der Hulst and Norval Smith, 131-75. Dordrecht: Foris Publications.
- Koizumi, Masatoshi. 1993. Object agreement phrases and the split VP hypothesis. *Papers on Case and Agreement I*, ed. by Jonathan D. Bobaljik and Colin Phillips, 99-148. Cambridge, MA: MIT.
- Lasnik, Howard. 1981. Restricting the theory of transformations. *Explanation in Linguistics*, ed. by Norbert Hornstein and David Lightfoot, 152-73. London: Longmans. [Reprinted in Lasnik. 1990.]
- Lasnik, Howard. 1990. *Essays on Restrictiveness and Learnability*. Dordrecht: Kluwer Academic Publishers.
- Lasnik, Howard. 1993. Lectures on minimalist syntax. UConn Working Papers Occasional Papers in Linguistics, Number 1. Storrs, CT: University of Connecticut.
- Lasnik, Howard. in press. Case and expletives revisited: on greed and other human failings. Storrs: University of Connecticut, *Linguistic Inquiry* 27.1.
- Lasnik, Howard. 1994. Last resort.
- Lasnik, Howard and Mamoru Saito. 1984. On the nature of proper government. *Linguistic Inquiry* 15.235-289.
- Lasnik, Howard and Mamoru Saito. 1991. On the Subject of Infinitives. *Papers from the 27th Regional Meeting of the Chicago Linguistic Society, Part One: The General Session*, ed. by Lise M. Dobrin, Lynn Nichols, and Rosa M. Rodriguez, 324-43. Chicago: CLS.
- Lasnik, Howard and Mamoru Saito. 1992. *Move α* . Cambridge, MA: MIT Press.
- Pinker, Stephen. 1984. *Language Learnability and Language Development*. Cambridge, MA: Harvard University Press.
- Pollock, Jean-Yves. 1989. Verb movement, universal grammar, and the structure of IP. *Linguistic Inquiry* 20. 365-424.
- Quirk, Randolph, Sidney Greenbaum, Geoffrey Leech and Jan Svartik. 1972. *A Grammar of Contemporary English*. London: Seminar Press.
- Rivero, María Luisa. 1994. Clause structure and V-movement in the languages of the Balkans. *Natural Language & Linguistic Theory* 12. 63-120.
- Rizzi, Luigi. 1990. *Relativized Minimality*. Cambridge, MA: MIT Press.
- Roberts, Ian G. 1993. *Verbs and Diachronic Syntax*. Dordrecht: Kluwer Academic Publishers.
- Roberts, Ian G. 1994. Two types of head movement in Romance. *Verb Movement*, ed. by David Lightfoot and Norbert Hornstein, 207-42. Cambridge: Cambridge University Press.
- Sag, Ivan. 1976. Deletion and logical form. Cambridge, MA: MIT dissertation.
- Steele, Susan. 1981. *An encyclopedia of Aux*. Cambridge, MA: MIT Press.
- Ura, Hiroyuki. 1993. On feature-checking for Wh-traces. *Papers on Case and Agreement I*, ed. by Jonathan D. Bobaljik and Colin Phillips, 215-42. Cambridge, MA: MIT.
- Vergnaud, Jean-Roger. 1977. Personal letter to Howard Lasnik and Noam Chomsky. Paris.
- Warner, Anthony R. 1986. Ellipsis conditions and the status of the English copula. *York Papers in Linguistics* 12.153-72.
- Watanabe, Akira. 1993. AGR-based Case theory and its interaction with the A-bar system. Cambridge, MA: MIT dissertation.
- Wexler, Ken. 1994. Optional infinitives, head movement, and the economy of derivations. *Verb Movement*, ed. by David Lightfoot and Norbert Hornstein, 305-50. Cambridge: Cambridge University Press.
- Wilder, Chris and Damir Čavar. 1993. Word order variation, verb movement, and economy principles. *Sprachwissenschaft in Frankfurt Arbeitspapier* 10. Frankfurt.