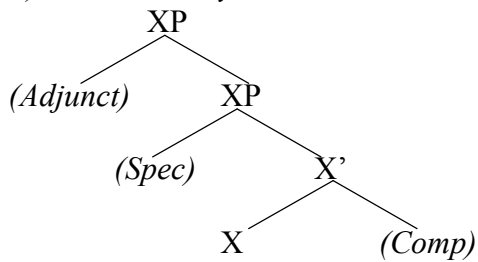


VERB MOVEMENT, UNIVERSAL GRAMMAR, AND THE STRUCTURE OF IP.
Jean-Yves Pollock, *Linguistic Inquiry* 20, 365-424

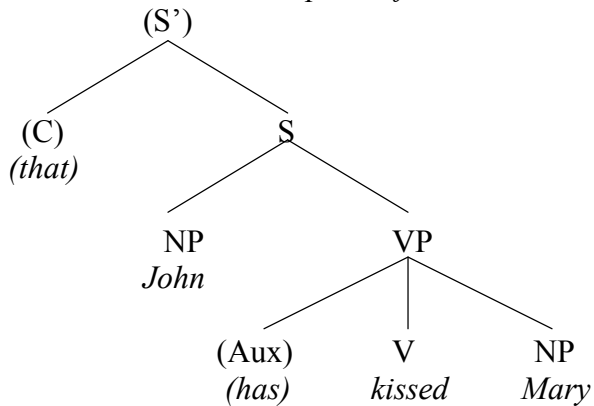
0. Preliminaries.

- 1) *Rewrite Rules:*
 S → NP VP
 VP → V NP

- 2) *X-bar Theory:*

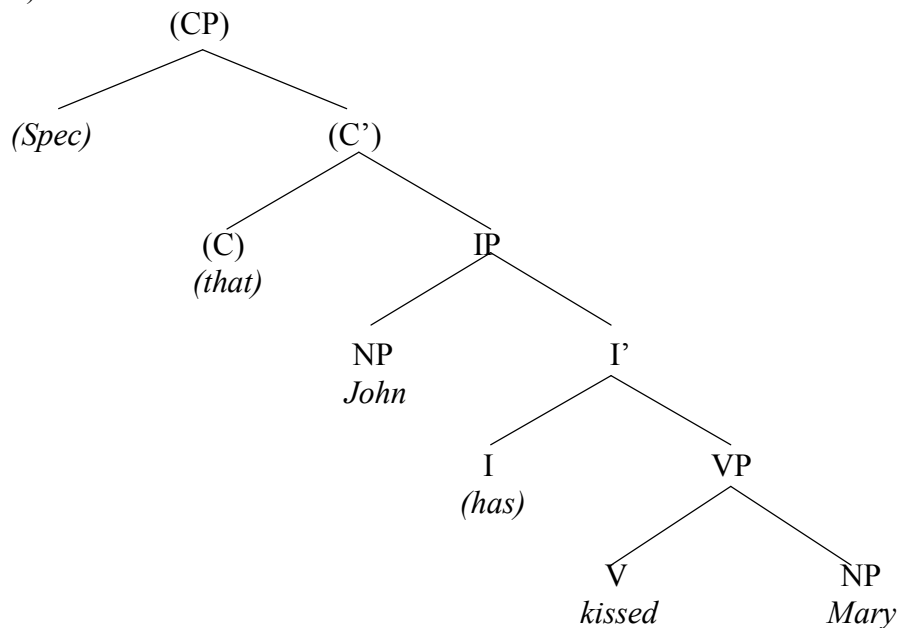


- 3) *The Pre-Barriers conception of the clause.*



Chomsky: “Does [the X-bar system] extend to non-lexical categories as well? Evidently, the optimal hypothesis is that it does. Let us assume this to be correct. Then the clausal categories conventionally labelled S and S’ might be [IP] and [CP], where I = INFL and C = complementiser” (*Barriers*, 3)

Lightfoot: “Nobody ever accused Chomsky of being slow, but this seems a bit over the speed limit for generalization”.

4) *The Barriers clause structure:***1. V-to-I movement in finite clauses.**5) *Common D-Structure for French and English.*

[_{IP} NP I ([_{NEG} not/pas] [_{VP} (Adv) V ...])]

where *Adv* = often/souvent, seldom/rarement, hardly/à peine.

6) *Verb Raising rules.*

French: all verbs raise from V to I.

English: only *have* and *be* raise.

7) *A few things we can explain with this.*

a. *John likes not Mary.

(negation)

b. Jean (n') aime pas Marie.

c. *Likes he Mary?

(interrogatives)

d. Aime-t-il Marie?

e. John (often) kisses (*often) Mary.

(VP adverbs)

f. Jean (*souvent) embrasse souvent Marie

g. My friends (all) love (*all) Mary.

(floating quantifiers)

h. Mes amis (*tous) aiment tous Marie.

i. He has not enough money.

(British possessive have)

j. Have you any wool?

k. John has seldom enough money.

l. They have all nice homes.

- m. Pierre a (beaucoup) lu (beaucoup) de livres. (*long-distance quantification*)
 Pierre has many read many of books
- n. Pierre (*beaucoup) lit (beaucoup) de livres.
 Pierre many reads many of books.

- 8) *Some questions that arise:*
- Why is V-to-I movement restricted to auxiliaries in Modern English?
 - Why is there something like Affix Lowering?
 - Why is it that *not* blocks Affix Lowering, but *never/seldom/rarely* don't?
 - Why isn't V-to-I movement optional?

2. V-to-I movement in non-finite clauses.

- 9) *Crucial assumption:*
Not in English, and *ne...pas* in French stand in the same structural position in finite and non-finite clauses.
- 10) *French non-finite clauses with auxiliaries:*
- Ne pas être heureux / n'être pas heureux.
ne not be happy *ne* be not happy
 - Ne pas avoir eu d'enfance heureuse / n'avoir pas eu d'enfance heureuse.
ne not have a childhood happy *ne* have not a childhood happy
- 11) *French non-finite clauses with lexical verbs:*
- Ne pas sembler heureux / *ne sembler pas heureux
ne not seem happy *ne* seem not happy
 - Ne pas posséder de voiture / *ne posséder pas de voiture
ne not own of car *ne* own not of car
- 12) *English non-finite clauses with auxiliaries:*
- Not to be happy / ?to be not happy
 - Not to have had a happy childhood / ?to have not had a happy childhood.
- 13) *English non-finite clauses with lexical verbs:*
- Not to seem happy / *to seem not happy.
 - Not to get arrested / *to get not arrested.
- 14) *Summary of V-to-I movement so far:*

	French		English	
	<i>Aux.</i>	<i>Lex.</i>	<i>Aux.</i>	<i>Lex.</i>
<i>Finite</i>	+	+	+	-
<i>Non-finite</i>	+/-	-	+/-	-

15) *Some more French data:*

- a. A peine parler l'italien / parler à peine l'italien
hardly speak Italian speak hardly Italian.
- b. Ne rien comprendre à la linguistique / ne comprendre rien à la linguistique
ne nothing understand about linguistics *ne* understand nothing about linguistics

16) Jean pensait (*demain) rencontrer (demain) son patron (demain)
Jean though tomorrow meet tomorrow his boss tomorrow

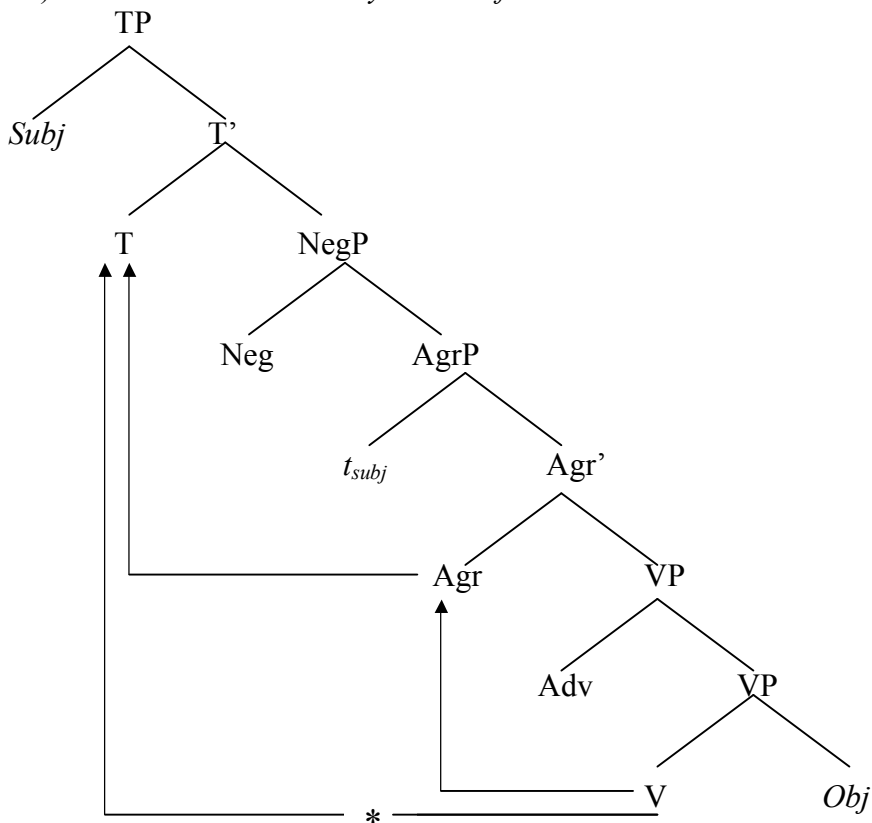
17) *Some more data from English:*

- a. To hardly speak Italian / *to speak hardly Italian.
- b. To (seldom) be (?seldom) on time.
- c. To (seldom) arrive (*seldom) on time

Conclusion: (5) cannot be the right D-Structure. There must be another intermediate projection between V and Neg. French verbs and English *be* and *have* can move to it, but English lexical verbs cannot.

3. V-to-Agr Movement.

18) *The structure assumed by Pollock from now on:*



- 19) *The difference between lexical verbs and auxiliaries:*
Be/être and *have/avoir* are exceptional in that they do not assign any theta role to the constituents they subcategorise for.
- 20) *The difference between English and French:*
 Assume the following:
 - subjects are generated in the Spec of AgrP.
 - the subject theta role can percolate from V to Agr if Agr is “transparent”
 - Agr is transparent in French, but “opaque” in English (in turn, this follows from French having richer morphological agreement than English).
- 21) *Verb Raising vs. Affix Lowering:*
 - $[_{AGR} [V] Agr] \dots [t_V]$ if Agr is opaque, V cannot assign any theta roles.
 - $[t_{AGR}] \dots [V V [Agr]]$ in this configuration, the external theta role of V can percolate up to SpecAgrP.
- 22) *Possible formalizations of Affix Lowering:*
 - The trace of Agr is deleted, because it is recoverable.
 - Affix Lowering is a PF rule, therefore it creates no traces, and it doesn’t violate the ECP (something similar has been proposed by Bobaljik 1995).
 - Affix Lowering applies to a linearised (flat) structure, therefore, no c-command relations are involved (Chomsky & Halle 1968).
 - The verb is taken from the Lexicon with its full inflection, and raises to Agr at LF (Chomsky 1995).
- 23) *Finite vs. Non-finite forms:*
 Non-finite T is universally opaque, therefore only auxiliaries can raise up to T. Finite T is transparent, therefore all French verbs can move to this position. English verbs cannot, because, given that Agr is opaque, direct V-to-T movement would violate the Head Movement Constraint (cf. 18).

4. Verb Movement and Event Semantics.

- 24) *The event semantics interpretation of a simple sentence:*
 John kissed Mary \rightarrow
 $\lambda x, \lambda y, \lambda z, [x(\text{John}) \ \& \ y(\text{Mary}) \ \& \ z(\text{past})] (\text{kiss}) = 1$ iff $\text{kiss}(x, y, z)$
 Read, “The smallest function containing x , y , and z , such that $x = \text{John}$, $y = \text{Mary}$, and $z = \text{past}$, and that, applied to *kiss*, is true iff x kissed y at time point z ”.
- 25) *What forces verb movement?*
 Assume that [+finite] T (i.e., [\pm Past]) is an operator. Then, α qualifies as a variable for [\pm Past] iff $\alpha = [_{V_i} e]$ bound by [\pm Past] (*this is not such a crazy idea as it seems, see, for instance, Hoekstra & Gueron 1995*).
 α is bound by [\pm Past] iff [\pm Past] c-commands α and [\pm Past] and α are coindexed.
 [\pm Past] and α are coindexed if V raises to T.

26) *Absence of Affix Lowering in French:*

- a. *Pierre ne pas mange.
- b. $[_{TP} \text{ Pierre ne } [_T \text{ [-Past]}] \text{ pas Agr } [_{VP} \text{ mang- }]]$ → *vacuous quantification and stray affixes (i.e., semantically and morphologically ill-formed)*
- c. $[_{TP} \text{ Pierre ne pas } [_{VP} \text{ [v mang- } [_T \text{ -Past]} \text{ Agr}]]]$ → *no stray affixes, but still vacuous quantification (only ill-formed at the semantic level)*

27) *More on French:*

- a. *Pierre ne pas mange souvent
- b. $[_{TP} \text{ Pierre ne } [_T \text{ -Past}] \text{ pas } [_{\text{mang}} \text{ - Agr}]_i \text{ } [_{VP} \text{ Adv } t_V]_i]$ → *vacuous quantification again, T is not coindexed with t_V , therefore it doesn't qualify as a variable.*

28) *The right structure:*

- a. Pierre ne mange pas.
- b. $[_{TP} \text{ Pierre ne } [_T \text{ [mang- Agr - [-Past]}]_i] \text{ pas } [_{t_{AGR}}]_i \text{ } [_{t_V}]_i]$

29) *The problem with English: no verb movement, no variable to bind. And we can't say that there is no T operator in English, otherwise, these sentences would be right.*

- a. *John doesn't have gone.
- b. *John doesn't be singing.
- c. *John doesn't be happy.

30) *A solution:*

Assume that

- a. there is a Tense operator in English as well as in French.
- b. in English, VP, NegP and TP are barriers *per se*.
- c. on the other hand, AgrP can only be a barrier by inheritance because it is morphologically defective.
- d. Neg doesn't count as an intervening head for relativised minimality purposes (i.e., it doesn't block Agr-to-T movement), since it is "inert for government".

31) *The derivation for "John is (not) happy"*

- a. V moves to Agr. $[_{V-Agr}]$ L-marks VP, so it doesn't count as a barrier.
- b. $[_{V-Agr}]$ moves to T and forms $[_{V-Agr-T}]$. There are two options now:
 - i) The sentence is affirmative. In this case, $[_{V-Agr-T}]$ L-marks AgrP.
 - ii) The sentence is negative. In this case, $[_{V-Agr-T}]$ L-marks NegP, not AgrP. Neg is not an L-marker. Nothing happens though, because AgrP is not an inherent barrier.
- c. Either derivation abides with the ECP.

32) *The derivation for "John has (not) lost his money":*

- a. the auxiliary "has" is generated in a VP projection immediately higher than the VP containing *lost*.
- b. *lost* stays in situ, *has* undergoes the same steps as *is* in (31).
- c. the Tense operator binds the trace of *has*.

33) *The derivation for modals:*

Modals are generated in a projection (ModP) between TP and NegP. AgrP qualifies as the variable bound by the Tense operator.

34) *“Do” support:*

In *John did not go*, the verb *did* is generated between AgrP and VP, the same as auxiliaries. It differs from auxiliaries in that it copies the theta grid of the matrix verb, whereas auxiliaries haven't any theta grid at all.

35) *Imperatives (probably the worst part of the paper!):*

For affirmative imperatives, like *(do) be quiet!* or *(do) sing that song!*, assume the same analysis as for *do* support sentences, with the peculiarity that *do* can optionally be phonologically null. The Tense operator binds the trace of *do*.

For negative imperatives, like *don't (you) be nasty!* (cf. **be (you) not nasty!*), assume that Neg in imperative clauses acts as a minimality barrier.

36) *A possible alternative in more modern terms:*

Given that all sentences are ultimately headed by a projection indicating their illocutionary force (Rizzi 1997), it might be the case that *do* can optionally be the overt realization of this head. Since it is higher than TP, *n't* must move up to it, thus deriving the *don't + subj* order.

It is still necessary to keep the assumption that Neg is a minimality barrier to explain the French pattern.

37) *Non-intervention effects with adverbs.*

- a. John hardly speaks.
- b. *John not speaks.

Assume that normal declarative sentences are derived in the same way as *do* support sentences (34). Null *do* is not an option in (37a), because it is not lexical and cannot L-mark NegP. Therefore, NegP becomes a barrier for antecedent government and the structure violates the ECP.

On the other hand, adverbs, being adjuncts rather than heads, aren't barriers.

38) *Not tackled by Pollock:*

- a. John speaks
- b. *John does speak (with neutral intonation).

This goes all the way back to Chomsky (1957). *Do* support is a last-resort mechanism, it is only used when null *do* can't yield a well formed sentence.

The last section is not that important, it deals with some residual issues, but it is more speculation than anything else.

6. What has changed since 1989.

The ordering of AgrP and TP: given Baker's Mirror Principle (i.e., the ordering of morphemes is the mirror image of the order of the projections the verb has gone through), Romance languages suggest that AgrP should be higher than TP.

- 39) a. canta – re – mos (*Spanish*)
 sing FUT 1ST pl.
 b. [VP canta-]
 c. [TP [[V canta-] –re-] [VP t_V]]
 d. [AGRP [[T[V canta-] –re-] –mos]] [TP t_{T+V}] [VP t_V]]

The emergence of more AgrP's: for instance, a lower AgrP between VP and the projection where auxiliaries and *do* are generated (later dubbed *vP*). Thus, Pollock's AgrP came to be AgrSP (for subject) and the new one, AgrOP (for object). The latter has been used to analyse OV orders in German and Dutch (Zwart 1993, Kayne 1994).

- 40) a. Ik heb [een boek gelezen].
 b. [VP gelezen [DP een boek]]
 c. [AGROP [DP een boek] [VP gelezen t_{DP}]]

In the same line, some people have suggested that there are also AgrP's for indirect objects (in Basque, where the verb can agree with indirect objects), and for PPs (for instance, in languages in which the preposition agrees with its object).

The absolute non-existence of AgrP's: Chomsky has argued in recent years that AgrP's should be eliminated, since their effects can be achieved through other means (for instance, multiple specifiers). This is a pretty controversial issue, and not everybody believes we can do without AgrP's.

The relative non-existence of AgrP's: Thrainsson (1994) argues that there is no reason in English to posit an AgrP node as something separate from TP, since there is very little morphological evidence in their favour (in fact, many people don't bother to represent the two of them in their trees). On the other hand, two separate nodes make sense in French or Icelandic.

Checking theory: in standard minimalism, the verb raises because it has to check some features, not because of event semantics (though these views aren't incompatible). An interesting idea can be found in Pesetsky & Torrego (2000), where Tense is viewed as a nominal feature in the verb (hence, uninterpretable), and nominative case as a Tense feature on a DP (ditto).