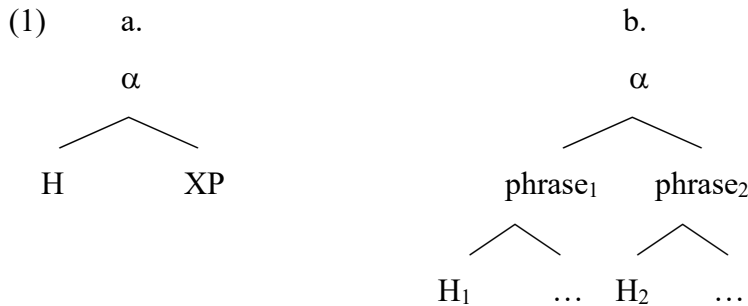


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- (2) *John hit the book the dog

The PC, by contrast, makes a different prediction under the scenario just described: the function denoted by *hit* (type $\langle e, \langle e, t \rangle \rangle$) combines with the denotation of *the book* (type e) and returns a function from individual to truth values, hence $\alpha = \textit{hit the book}$ denotes a one place predicate. Thus, the PC correctly predicts that *hit the book* could only combine with an additional nominal expression.

Assume now that in (1b), phrase₁ and H₂ have both moved, as in a *wh*-moved object in Spanish which has triggered T to C movement, with the standard ancillary v^* to T displacement, as in the Spanish example in (3), with the structure in (4).

- (3) A quién vió Juan en la playa?
 To whom saw Juan in the beach
- (4) A quién₁ vió₂ Juan [α t₁ t₂ en la playa]

In the scenario just described for (1b), α dominates copies of phrase₁ and H₂. Under the assumption that copies do not count for labeling, and assuming the phase impenetrability condition, it follows that there is no way of labeling α in that structure. LT therefore predicts that examples like (3) with the structure (4) should not be possible in Spanish and other languages. The PC do not make such predictions, since the semantic type of copies can be compositionally combined.

Assume now that phrase₁ is the raised subject in (1b) and H₂ the copy of T, which has moved to C as in an English sentence like (5), with subject-auxiliary inversion.

- (5) Why will John hire that man?

Since H₂ (being a copy) will not count for labeling under the previous scenario of (1b), the LA will be able to find the head of phrase₁ = John as the closest head, hence α will be incorrectly labeled as a nominal expression rather than as a sentential constituent. The PC does not make such a prediction for the reasons described above.

The solution. Since the PC is non-negotiable in the cognitive sciences (Fodor 1998), the solution I envision in this talk is to solve the problem of projection noticed by Chomsky (2013, 2015) by simply making Merge a type-dependent operation. With type-dependent Merge, the interpretation of α in (1) will depend on the interpretation of its parts regardless of syntactic labels (cf. Heim and Kratzer 1998). I argue that computational operations must be type-driven if the computation is to be efficient. If Merge instantiates set-formation as Chomsky assumes, I argue that the syntax must incorporate some version of type-theory (e.g. Carnap 1947), since that is the best available tool for representing set-theoretic structures.

Selected references.

- Chomsky, Noam. 2013. Problems of projection. *Lingua* 130: 33-49.
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