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Biolinguistics, the Minimalist Program, and psycholinguistic reality

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In his recent papers, Chomsky (1999, 2000, 2004, 2005a, 2005b) stresses that the minimalist program is part of a biolinguistic perspective on the language faculty. The biolinguistic framework is justified with reference to studies of neurolinguistics, and uses some psycholinguistically oriented terminology like "derivation", "computation", "phase-level memory", but is curiously staying away from psycholinguistic research, and from basic observations regarding the functioning of the computational system for language processing. One question that has been bothering me for a while is related to the notion of "derivation by phase": *How can the notion of derivation by phase be reconciled with psychological reality?*

The notion of phase is a development of ideas having a long history in linguistics, those of bounding nodes and barriers. From a linguistic point of view it is unquestionable that these notions are productive. However, the minimalist program explores the idea that the computational system for the human language derives sentences phase by phase, starting from the most embedded one. As soon as a phase is completed, it is sent to the interfaces for interpretation, and a next phase is computed. This is justified with reference to memory load, clearly a psychological notion. However, whether from the point of view of the speaker or of the hearer, the computational system doesn't treat sentences starting from the most embedded phase in a language like English. Instead of saying : *Who said that Mary gave a book to Paul?* speakers don't spell-out something like the following (brackets added to make clear the approximative derivation): *[v*P$_{phase1}$ gave a book to Paul][CP$_{phase2}$ that Mary] [v*P$_{phase3}$ said][CP$_{phase4}$ who]?* It will not do to assume that speakers can keep in memory all the phases already planned, waiting for the most external phase to be completed, before spelling them out in the reverse order. The capacity of short term memory is simply too small for that (without even taking into account the computation necessary at the interfaces). There is here a fundamental disparity between the left-to-right processing observed in psycholinguistic studies and the right-to-left computation assumed in derivation by phase.

The notion of phase hasn't been unchallenged, most recently by Boeckx and Grohmann (to appear), but as far as I can see, the problems discussed are internal to the system and do not touch the basic point made here. In as much as the generative enterprise aims to describe the computational system for the human language, the notion of derivation by phase is in need of deep rethinking. This brings me back to my original question: How can the model be modified to bring it closer to psychological reality, without losing on linguistic coverage? As long as the model can't face this

basic question, all references to the computational system, memory load, and other psychological notions will remain pure rhetoric, overtly misleading in pretending that what we are doing is describing the computational system for the human language, and ultimately addressing the biology of language, while what we are really doing is constructing a linguistic system independent of psychological and biological concerns.

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