Special and General Theory of Merge
with special and general thanks
to Noam

Riny Huijbregts/UIL/Utrecht University
Syntax Interface Lectures, Utrecht, Febr 7, 2019

A significant and defining property of every human language is that it has incorporated some recursive combinatorial operation somewhere. Such recursive procedure must receive a universal formulation broad enough to also include any "promiscuous" or "exotic" usages. Any explanatory research program must then proceed to interpret these linguistic objects in a uniform and principled manner, filtering the "good guys" and ruling out the "bad guys." If successful, the program helps develop a more fundamental way of addressing the problem of legitimate operations for a biologically feasible approach to human language.

The simplest such procedure, freely recursive binary Merge, constructs a new object from two syntactic objects that may have been already generated, imposing no further structure or linear order on them (thus satifying conditions of *No Tampering* and *Inclusiveness*). Ideally, what we hope to derive is a theorem that these stipulated cases of IM and EM of standard Merge theory are the only empirically possible cases of Merge, ruling out problematic instantiations such as *sideways merge, parallel merge, countercyclic merge, overmerge, late merge*, etc. We'll then have a principled explanation of why NL possesses the biologically unique recursive operation that it actually does, rather than some other.

Conceptual considerations. One way to proceed is to conceive of Merge as an operation on the workspace WS, rather than an operation on syntactic objects SO's *per se*. The explanatory program will then (i) take a broad enough concept of Merge accommodating the broadest range of merge-based operations that have been suggested; then (ii) formulate plausible conditions C that constrain these operations (e.g. *Descriptive Adequacy, Restrictions of Computational Resources, Determinacy, Stability, SMT principles* e.g. *NTC, Inclusiveness, PIC*); next (iii) show that only IM and EM survive testing the range of possibilities under (i), ruling out under conditions C of (ii) all "bad guys" allowed under (i); further (iv) formulate a narrow version of merge that accommodates just IM and EM as the only "good guys," and finally (v) derive this narrow version as a theorem from conditions C and 3rd factor principles. This program updates, precisely and conscientiously, the plan laid out in Chomsky's Reading (2017) and Tucson (2017) lectures and further developed in his ongoing research.

Theoretical considerations. One particular and principled result of simplest merge is the copy theory of movement, which yields an automatic account of complex reconstruction phenomena. However, in order to achieve descriptive adequacy and maintain determinacy and coherence, copies of internal merge must be distinguished from repetitions of external merge. A problem that is not exactly trivial in strong minimalist-based models. We show how Merge as an operation on WS successfully deals with this problem. Generally, Merge is an operation on a workspace WS that yields a new workspace WS', e.g. Merge(P, Q, WS) = WS' = { {P, Q}, ... }. A simple comparison of WS (SD) and WS' (SC) suffices to distinguish copies from repetitions. We then show how this conception of Merge can deal with "exotic" empirical phenomena like parasitic gap licensing, across-the-board movement, and possibly gapping ellipsis. All of these are significant questions "presented as solutions but in fact posing serious problems" (Chomsky, *ipse dixit*).

Empirical considerations. To accommodate these phenomena we propose to develop a generalized version of simplest merge, a reformulation and reinterpretation of merge that is forced on us by thus far unsolved properties of unstructured coordination. Standardly, the elements P or Q in Merge(P, Q, WS) are taken to be single syntactic objects (singletons) or terms thereof. Let's call this the "special theory of merge" (STM). We propose to generalize merge as an operation on WS that is free to select sets as opposed to SO's. The result is a "general theory of merge" (GTM), with special Merge constituting just the *limiting* case of general Merge where singletons rather than non-unit sets are being selected. General Merge (just as special Merge) has two primitive executions: Set Merge and Pair Merge. We propose to analyze the still problematic phenomenon of parasitic gaps in terms that involve (generalized) pair-merge, explaining their various "exotic" properties, asymmetries in the syntax and semantics of adverbs, their inaccessibility to extraction and labeling, and chain formation in particular. In contrast, we analyze the "promiscuous" cases of across-the-board movement and gapping as linguistic objects instantiating (generalized) set-merge, and explain their various properties (parallel structure, recoverable deletion, and recursive licensing of ellipsis) without further stipulative assumptions.