Some Concepts and Consequences of MERGE

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Abstract

Since Aristotle, language has been seen as "sound with meaning." An important finding of modern linguistics is that they are mediated by hierarchical structures. To explain permissible hierarchical structures of language, generative grammar has proposed phrase structure rules and transformations. However, in mid-1990s, such structure building and movement operations are unified under the single operation Merge.

The first formulation of Merge is found in Chomsky (1995), which combines two syntactic objects together, assuming labeling to be a suboperation, incorporated as part of the Merge operation. Under this formulation, when α is merged with β, one of them will be a label for the resulting set of α and β:

(1)   Merge (α, β) = {α, {α, β}}

(1) shows that when Merge is applied to α and β, the operation results in the set {α, β} with α as the label for the whole structure. Note that the Merge operation, formulated in (1), is asymmetrical in that one object is assigned more prominence over the other, and such prominent object becomes a label for the whole structure.

In his subsequent work, however, Chomsky (2004) modifies the Merge operation, dispensing with the labeling algorithm stipulated as part of the definition of Merge. Instead, labeling is taken to be part of the third factor principle of minimal search (Chomsky 2013). Thus, Merge, being no longer responsible for labeling, takes two syntactic objects α, β, and forms just a two-membered set, as shown in (2).

(2)   Merge (α, β) = {α, β}

(2) shows that Merge is a symmetrical operation in that it encodes neither α nor β to be a label for the resulting set, meaning that Merge is "projection-free" (see among others, Collins 2002, Chomsky 2007, 2013, 2015, and Narita 2014).

The formulation of Merge in (2) is simple and clear, but how exactly Merge operates to generate derivations is subject to a minimalist critique. It must be the case that such generative procedures presuppose the existence of workspace (WS), where syntactic objects constructed

by Merge are made available for subsequence operations, but the notion WS itself has remained vague. To fix this problem, Chomsky (2017) makes WS explicit and reformulates Merge as an operation on WS, called MERGE.

Under MERGE, the derivation proceeds as follows:

(3) a. WS = [α, β, γ]

b. MERGE (α, β, WS)

c. WS' = [{α, β}, γ]

(3a) shows a derivational stage where WS contains three syntactic objects. (3b) means that MERGE operates on WS, selecting α and β. As a result, WS is updated to WS', as in (3c). Notice that WS' contains the newly created set {α, β} and the unselected γ, but not those selected α and β.

Chomsky (2019a, b) argues that under MERGE, operations called External Merge and Internal Merge are allowed, but there is a principled reason to block operations such as parallel Merge (Citko 2005), Sideward Movement (Nunes 2004) and counter-cyclic Late Merge (Lebeaux 1998). This MERGE-based analysis, if on the track, will call for a new approach to the so-called "multi-dominance" phenomena which empirically motivate these operations.

Theoretically speaking, however, MERGE (3) is arguably preferable over Merge (2) because the former clarifies that so-called "movement" is illusion; there is no "raising" or "lowering." What MERGE (3) does is to select α, β from WS and forms {α, β}, which enters WS', and the rest follows from third factor considerations. Nevertheless, MERGE (3) confronts a number of empirical questions, posed by the problem of descriptive adequacy. Thus, a tension arises between theoretical explanation and empirical description. In order to resolve this tension, we will clarify accompanying notions under MERGE, such as minimal search, in particular, labeling and agreement, which involves φ-features and Case. These notions are of critical importance for the current minimalist investigation.

In this workshop, we first review core concepts of MERGE, and then identify empirical issues, paying special attention to MERGE, on the one hand, and minimal search, labeling, and the theory of Case and agreement, on the other. By addressing these issues, further consequences of MERGE will be identified and investigated.

Although MERGE is the latest conceptual innovation in syntactic theory under the generative endeavor, we make this workshop as accessible as possible to researchers who are not familiar with recent minimalist developments. The workshop provides a brief introduction of MERGE, together with the review of the relevant background assumptions, which in turn allows the participants to actively take part in the discussion.

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