

On Virtually Free MERGE

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In Chomsky, Gallego, and Ott (2019), it is explicitly argued that a lexicon, MERGE (frequently dubbed “Free MERGE”), and nothing else compose a computational system, and that MERGE unconditionally applies to syntactic objects located in a workspace. However, Chomsky (2019) assumes that both the set of the lexicon and that of the workspace are not available to MERGE, without giving any specific reasons. Thus, this article argues that the immunity of the lexicon and the workspace to MERGE can be deduced from Labeling Theory (Chomsky (2013, 2015)), which enables us to dispense with the exceptional assumption, in favor of the totally free applicability of MERGE.

Key Words : Full Interpretation, lexicon, Merge, MERGE, Select, SELECT, work space

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I Introduction ¹

In Chomsky, Gallego, and Ott (2019: 236), it was explicitly argued that a lexicon, MERGE (frequently dubbed “Free MERGE”), and nothing else compose a computational system, and that MERGE unconditionally applies to syntactic objects located in a workspace, as quoted in (1).

- (1) “A computational system comprising a lexicon and MERGE applying freely will automatically satisfy some fundamental desiderata, such as recursive generation of

infinitely many structures with internal constituency and discontinuous (displaced) objects. MERGE operates over syntactic objects placed in a workspace: the MERGE-mates X and Y are either taken from the lexicon or were assembled previously within the same workspace (for some relevant formal definitions, see Collins & Stabler 2016).” (p. 236; the underlines are mine.)

More recently, however, Chomsky (2019) has suggested several views significantly different from those referred to in Chomsky, Gallego, and Ott (2019).² For example, Chomsky (2019) identified a workspace (WS) as a set whose members are syntactic objects (SOs) and the lexicon (LEX), as shown in (2).³

$$(2) \quad \text{WS} = [\text{SO}_1, \text{SO}_2, \text{SO}_3, \dots, \text{LEX}]$$

As shown in (3), Chomsky (2019) also proposed that MERGE be an operation on a workspace itself rather than on specific syntactic objects (such as P and Q in (3)). Thus, MERGE can be regarded as a mapping operation from one stage, WS, to another stage, WS'.⁴

$$(3) \quad \text{MERGE}(P, Q, \text{WS}) = [\{P, Q\}, X_1, \dots, X_n] = \text{WS}'$$

In this squib, I point out that MERGE, irrespective of whether it is redefined as Chomsky's (2019) MERGE^{WS} or not, is implicitly presupposed to be a conditioned operation, which insinuates that MERGE is in point of fact “virtually free” rather than “really free.” This is because the set of the lexicon and that of the workspace are assumed to be inaccessible to MERGE. To accomplish the freedom (i.e. the unconditionality) of MERGE, I argue that the set of the lexicon and that of the workspace are within the target range of MERGE, but that they are uninterpretable at interfaces.

In Section 2, we discuss two upshots traceable to the elimination of the operation SELECT, which introduces lexical items from the lexicon to the derivation for the application of MERGE. One of them is shown to be a favorable consequence in Section 3, whereas it is argued in Section 4 that the other turns out to be undesirable. In Section 5, we indicate why the set of the lexicon and that of the workspace should be viewed as unavailable to MERGE based on Labeling Theory. Section 6 recapitulates our argument.

II SELECT

Let us start discussion by reviewing the following two statements regarding the operation SELECT.⁵

- (4) “All syntactic objects in the lexicon and in the workspace WS are *accessible* to MERGE; there is no need for a SELECT operation (as in, e.g., Chomsky 1995).” (Chomsky, Gallego, and Ott (2019: 245))
- (5) “One of the operations of C_{HL} is a procedure that selects a lexical item LI from the numeration, reducing its index by 1, and introduces it into the derivation as SO_{n+1} . Call the operation *Select*.” (Chomsky (1995: 226))

Given the strong minimalist thesis and the third factor principle, it is obviously desirable to avoid employing such superfluous theoretical apparatuses as SELECT, as stated in (4). As a result, what SELECT was in charge of, indicated in (5), is now taken over by MERGE under Chomsky, Gallego, and Ott’s (2019) proposal.⁶

However, two properties of SELECT should not be ignored: it applies one by one, and it accesses lexical items only. Thus, dispensing with SELECT inevitably brings us two contrasting consequences. First, it enables us to circumvent what we call the Ambiguity Problem, which will be described in Section 3. This is a welcome outcome. Second, it requires us to assume that the set of the lexicon per se, rather than the lexical items within it, is, exceptionally, immune from Free MERGE, as argued in Section 4. This is an unwelcome consequence that we cannot accept.

III Ambiguity Problem

As shown in (5), since SELECT is assumed to apply to lexical items one at a time, the following derivational steps should be allowed, where the angle brackets indicate a copy or a trace created by Internal MERGE.

- (6) a. [N cat]
- b. [N cat [N <cat>]]

At the very first application of SELECT, the noun *cat* is introduced to the derivation, yielding (6a). With no condition imposed on MERGE, Internal MERGE should be applicable to (6a) to derive (6b) before the second application of SELECT. As exhibited in (6b), self-attachment is allowed. This output structure seems to be a simple case of the vacuous application of MERGE, as suggested by Hisatsugu Kitahara (personal communication) on the basis of Chomsky (2013: 44); but it is arguably not, for the following reason.

First of all, the application of Internal MERGE is not motivated by, for example, feature valuation or Labeling Theory. Therefore, at interfaces, no information about the trigger of the application of Internal MERGE can be detected in the self-attachment structure, which also makes it possible to construe the structure as being derived by means of the other type of MERGE, namely, External MERGE: the same lexical item, *cat*, is selected from the lexicon and externally merged with the first selected *cat*. Hence, in this case, *cat* in the angle brackets in (6b) serves as an independent lexical item rather than a trace.

Thus, *cat* in the angle brackets in (6b) turns out to be ambiguous between a trace and a lexical item. Accordingly, its phonological realization, for example, is indeterminate: if it is a trace, it may not be pronounced, but if it is a lexical item, it must be pronounced. Without any instruction to resolve the ambiguity, such a structure as (6b) cannot receive a proper interpretation at interfaces and hence is in violation of the principle of Full Interpretation. Therefore, the derivation in question does not converge.

However, under Chomsky, Gallego, and Ott's (2019: 19) proposal (see (4)), the derivational role of SELECT is incorporated into MERGE, as noted, and hence its one-at-a-time application is taken over by a more economical two-at-a-time application of MERGE in conformity to the definition quoted in (7).

- (7) “The optimal course to follow, we think, is to assume a basic compositional operation MERGE, which applies to *two* objects X and Y, yielding a new one, $K = \{X, Y\}$.” (Chomsky, Gallego, and Ott (2019: 232)) (The italic is mine.)

Without SELECT's one-by-one introduction of lexical items to the derivation, the self-attachment structure shown in (6b) is successfully prevented, and therefore the Ambiguity Problem does not arise, a desirable result.

We should note that Chomsky's (2019) proposal can evade the Ambiguity Problem as well because MERGE^{WS}, as defined in (3), applies to two items (P and Q in (3)) and turns a workspace into another workspace without needing recourse to one-by-one derivational stages

based on SELECT.

IV Exceptional Targets of MERGE

Let us turn our attention to the second consequence designated in Section 2. As noted there, SELECT searches the lexicon for lexical items, and, as we assume, fails to SELECT the set of the lexicon. Given unconditionally free MERGE and the SELECT-less computational system advocated by Chomsky, Gallego, and Ott (2019) and Chomsky (2019), not only the lexical items in the lexicon but also the set of the lexicon is naturally supposed to be subject to either MERGE or MERGE^{ws}.

Nonetheless, no serious attention was paid to the immunity of the set of the lexicon to MERGE in Chomsky, Gallego, and Ott (2019), which suggests that, in a manner of speaking, the set of the lexicon was indulgently regarded as a concealed case of exception to Free MERGE.

In fact, however, the situation is more serious under Chomsky's (2019) revised version of MERGE. This is because Chomsky (2019) clearly assumes that both the set of the lexicon and that of the workspace are not available to MERGE^{ws}, without giving any specific reasons. Therefore, being conditioned in narrow syntax, MERGE^{ws}, as well as MERGE, must now be dubbed "Virtually Free" MERGE.

V Labeling-Theoretic Account

In this section, I would like to argue that the immunity of the lexicon to MERGE can be deduced from Labeling Theory (Chomsky (2013, 2015)), which enables us to dispense with the unacknowledged exceptional assumption discussed in the preceding section, in favor of the totally free applicability of MERGE.

First, let us assume that MERGE is unrestrictedly applicable to the set of the lexicon, and thus maintains its freedom. However, we should note, the set of the lexicon never gets labeled in the course of derivation, simply because the set has no features qualified for labeling. Thus, even if the entire set of the lexicon is introduced to the derivation by means of MERGE, with no label it is inescapably uninterpreted at the interfaces, resulting in violation of the principle of Full Interpretation.

The same analysis holds in the case of MERGE^{ws} . Since the set of the workspace itself, as well as that of the lexicon, has no feature eligible for labeling, even if MERGE^{ws} is applicable to them, neither the workspace nor the lexicon receives a proper interpretation at interfaces.

Some comments on the labeling failure of the set of the workspace and that of the lexicon are in order here. It is true that the workspace and the lexicon can be considered sets, as noted by Chomsky (2019), but unlike SO sets, they are not structured or headed by a category bearing a feature eligible for labeling. Therefore, minimal search for labeling ineluctably fails, which leads to the uninterpretability of the two sets at interfaces.

VI Summary

To put my argument in a nutshell, I have first indicated that the elimination of SELECT from the computational system is not as simple as Chomsky, Gallego, and Ott (2019: 245) expected, because it yields two non-negligible outcomes, one of which requires us to assume that the set of the lexicon is exceptionally out of the target range of MERGE. We have rejected this assumption and argued that the set of the lexicon is sensitive to the application of MERGE but receives no proper interpretation at interfaces because of its privation of labels.

Under Chomsky's (2019) MERGE^{ws} , both the set of the workspace and that of the lexicon are assumed to atypically elude the application of MERGE^{ws} . Again, we have discarded this assumption and argued that their absence of labels necessarily leads to no proper interpretation at interfaces, though both of them are sensitive to the application of MERGE^{ws} .

In consequence, MERGE, regardless of whether it is MERGE^{ws} or not, applies in narrow syntax in an unlimited manner. This amounts to the removal of restrictions on MERGE, contributing to the achievement of “Really Free” MERGE.

Notes

- 1 My first thanks go to Hisatsugu Kitahara (Keio University), whose lectures delivered at Kyushu University on March 16, 2019 and at the Keio Linguistics Colloquium

on August 24, 2019, inspired me to write this squib. The usual disclaimer applies. This work was supported by JSPS KAKENHI Grant Number JP19K00666.

2 Chomsky (2019) is a series of lectures on linguistic theory delivered at UCLA from April 29, 2019 to May 2, 2019.

3 As suggested in Chomsky (2019), the WS set is indicated by square brackets, while the SO set is indicated by curly braces.

4 When necessary, we indicate Chomsky's (2019) MERGE as "MERGE^{WS}" to distinguish it from Chomsky, Gallego, and Ott's (2019) MERGE.

5 We ignore the difference, if any, between SELECT and Select, assuming that it is merely notational.

6 According to Chomsky, Gallego, and Ott (2019: 246), "copies are simply a by-product of IM (i.e. Internal Merge [MF])." Thus, the operation COPY is rejected either.

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