

# A Merge-based Analysis of the Left Periphery of $vP$

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The main goal in this paper is to establish a theoretical foundation so that the syntactic derivation of the middle field can be explained by means of the narrow-syntax operation Merge, in line with the mainstream of the Minimalist Program. Specifically, adopting Epstein, Kitahara, and Seely's (2012) analysis, we propose that the syntactic derivation of the left periphery of  $vP$ , what is often referred to as the middle field, be explained by means of Merge, supporting Chomsky's (2014) argument. As a consequence, what we call the Selection Problem is overcome. Two possible extensions of our proposal, as well as two consequences, are discussed. We also consider one of its most significant extended implications: in compliance with Chomsky, Gallego, and Ott's (2019) claim, Rizzi's (1997) left periphery analysis (i.e. syntactic cartography) is untenable any longer.

**Key Words** : left periphery, middle field,  $vP$ , syntactic cartography, selection, Merge, two-peaked structure, counter-cyclic application

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## I Introduction <sup>1</sup>

Since this paper deals with the syntactic analysis of verbal projections, let

us start discussion by briefly reviewing how Chomsky's (1981) clausal structure analysis, illustrated in (1), has been modified since the Government and Binding theory of Generative Grammar.

(1) [<sub>S'</sub> ... [<sub>S</sub> ... [<sub>VP</sub> ...]]] (Chomsky (1981))

Revising (1), Chomsky (1986: 3) argued for the analysis shown in (2) in conformity with X-bar theory. Later, splitting VP into  $\nu$ P and VP, as depicted in (3), Chomsky (1995: 334) proposed a more articulated analysis of verbal projections. The verbal projections  $\nu$ P and VP serve as domains for theta-role assignment or argument structure.

(2) [<sub>CP</sub> ... [<sub>IP</sub> ... [<sub>VP</sub> ...]]] (Chomsky (1986: 3))

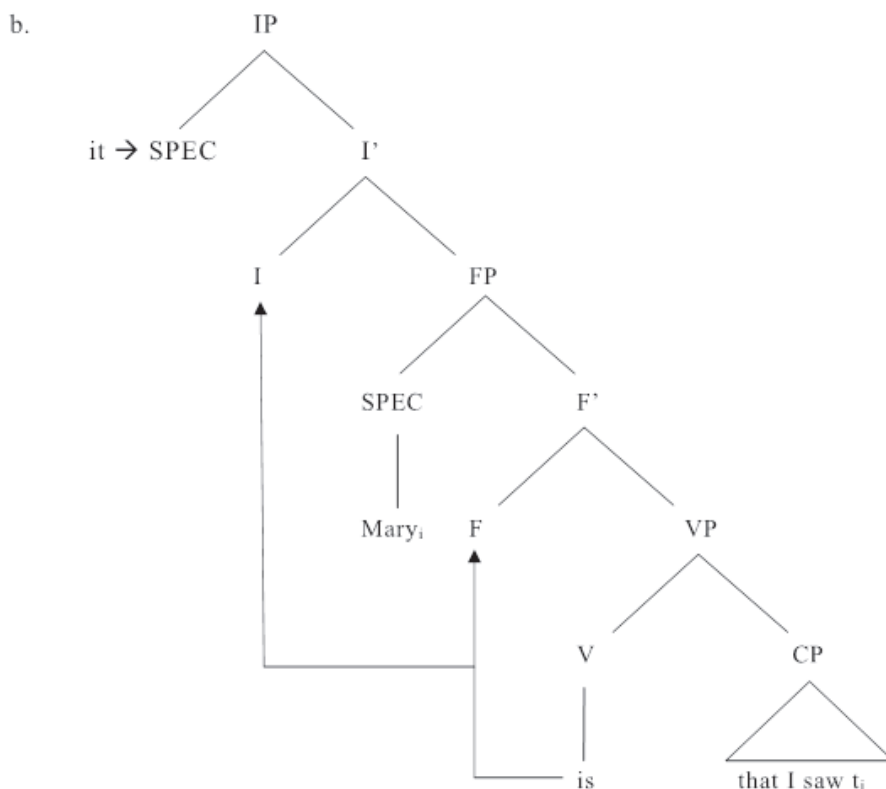
(3) [<sub>CP</sub> ... [<sub>TP</sub> ... [<sub>VP</sub> ... [<sub>VP</sub> ...]]]] (Chomsky (1995: 334))

Around the same time, Rizzi (1997) proposed the left periphery analysis (i.e. the so-called cartographic analysis) of clause structure, showing that there are discourse-related categories constituting clause structure above IP.

(4) [<sub>ForceP</sub> Force [<sub>TopP\*</sub> Top [<sub>FocP</sub> Foc [<sub>TopP\*</sub> Top [<sub>FinP</sub> Fin [<sub>IP</sub> ...]]]]]]]

Soon after Rizzi's (1997) cartographic study, Jayaseelan (2001) argued for a "low" left periphery located between TP and  $\nu$ P.<sup>2</sup> Our primary concern in this paper is the status of this domain, which we occasionally refer to as "the middle field," on the basis of the Minimalist manner of structure building (see Chomsky, Gallego, and Ott (2019) and Epstein, Kitahara, and Seely (2012)). It has been widely assumed that a typical instance of the middle field is Focus Phrase (FP or FocP in short), which is a part of the clause structure projection, as Jayaseelan (2001: 63) demonstrates in (5b) for the cleft construction in (5a).<sup>3</sup> We should note that the focused DP *Mary* is situated in the Spec position of FP.

(5) a. It is *Mary* that I saw.



According to Jayaseelan (2001), the middle field can consist of projections of Focus and Topic depending on the language. For ease of exposition, we first discuss the case in which a focus element occupies the middle field in Sections II, III, and IV, and then turn our attention to the case in which two or more discourse-related elements stays there in Section V.

The main goal of the present paper is to establish a theoretical foundation so that the syntactic derivation of the middle field can be explained by means of the narrow-syntax operation Merge in line with the mainstream of the Minimalist Program.<sup>4</sup> In Section II, we point out two unresolved issues in this regard. In Section III, we propose a new analysis of the syntactic derivation of the middle field, based upon Epstein, Kitahara, and Seely's (2012) counter-cyclic application of Merge. As a result of this approach, the two issues can be readily resolved. In Section IV, we show two consequences of our proposal. Section V summarizes our main claim and shows how our proposal can be extended to cover other cases.

## II Unresolved Issues

Cartographic analyses of the middle field (i.e. the left periphery of  $\nu$ P) have identified the following two major issues.

- (6) a. What does the middle field comprise?
- b. How is the middle field hierarchically organized?

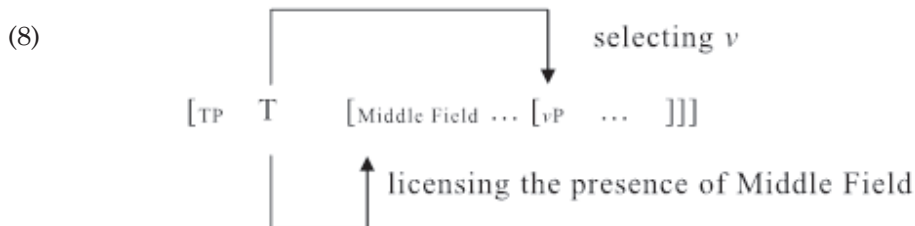
The intention of the first question is to clarify the categories composing the middle field, and that of the second is to demonstrate the structural ordering of the categories inside the middle field. The answers to the two questions thus contribute to the explanation of grammatical phenomena that occur in the middle field.

However, we should note that, besides the above-mentioned general issues, we face specific issues, including what we refer to as the Selection Problem. Let us now explain what this is.

In general, selection relations hold locally, which informally means that a category X selects another category Y which is a sister of X. To take (3), reproduced below as (7), as an example of this phenomenon, in it T selects  $\nu$  irrespective of whether it is [+tense] or [-tense].<sup>5</sup>

- (7) [CP... [TP... [ $\nu$ P... [VP...]]]] (see Chomsky (1995: 334))

As a consequence, T is supposed to establish two simultaneous relations with the middle field and  $\nu$ P, respectively: the selection relation with  $\nu$ P, on the one hand, and the licensing of the presence of the middle field, on the other, as illustrated in (8).



Then, given the fundamental premise that selection relations hold locally, how can the [+tense] T head select  $\nu$  over the middle field? To our best knowledge, this question has not been taken into serious consideration in the generative study of the middle field.

There is another type of question arising from the Minimalist point of view, namely, that of the syntactic derivation of the middle field. How is the middle field constructed in the course of derivation? To be more explicit, is it possible to derive the middle field in terms of Merge or not?

Lamentably, it seems that these questions have not received a serious attention from the Minimalist viewpoint; as a matter of fact, there have been just a few Minimalist works showing how the derivation of the (clausal) left periphery proceeds. For example, Branigan (2016) proposed multiple feature inheritance from C to the lower heads of the left periphery, and Shlonsky (2006) came up with a reprojection analysis of the left periphery by means of raising C.

It is worth considering here the following two contradictory statements in connection with the questions raised just above. First, Chomsky (2014: 13) argued that Internal Merge (IM) is able to construct discourse-related structure, implying that Rizzi's left periphery, illustrated in (4), is derived by IM in the narrow syntax.

- (9) “EM [External Merge] yields generalized argument structure, IM yields everything else, specifically discourse-related structure like new/old information, *focus*, and so on” (italics mine). (Chomsky (2014: 13))

However, more recently Chomsky, Gallego, and Ott (2019) (hereafter CGO) have been skeptical about the existence of straightforward relations between informational notions such as “topic” or “focus” and narrow syntactic derivation, as quoted in (10).

- (10) “But informational notions such as “topic” or “focus,” like grammatical functions or thematic roles, are properties of configurations and their syntactic/discursive context, not of individual syntactic objects (Chomsky 1965; Hale & Keyser 1993); consequently, they should neither be represented in the lexicon, nor in the narrow syntactic derivation (cf. Uriagereka 2003; Fortuny 2008; López 2009; Gallego 2013a, 2016).” (p. 25)

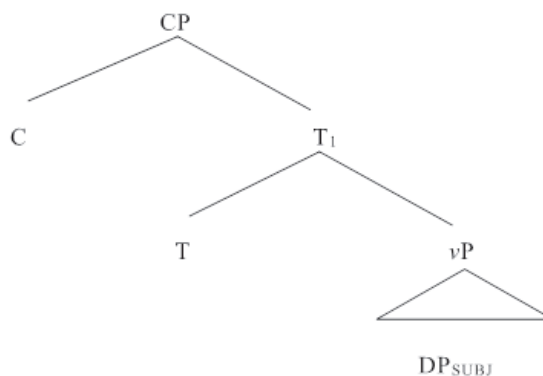
In what follows, to reconcile these two contradictory views, we will argue that informational notions such as “topic” or “focus” do not project to compose the structures illustrated in (4) and (5), which then suggests that Rizzi’s left periphery analysis is no longer tenable; however, we will argue that these notions do play a significant role in the application of Merge in the narrow syntax.

More specifically, as will be shown in the next section, we submit neither new theoretical apparatuses nor notions, but argue that it is necessary only to employ an already-existing Merge-based manner of structure-building for the derivation of the middle field. Accordingly, while the cartographic analysis of the middle field will be shown to be partly in line with the Minimalist style of structure-building, following Chomsky’s (2014) statement in (9), Rizzi’s left periphery analysis is dispensable, supporting CGO’s statement in (10). We also show that our new analysis can solve the Selection Problem altogether.

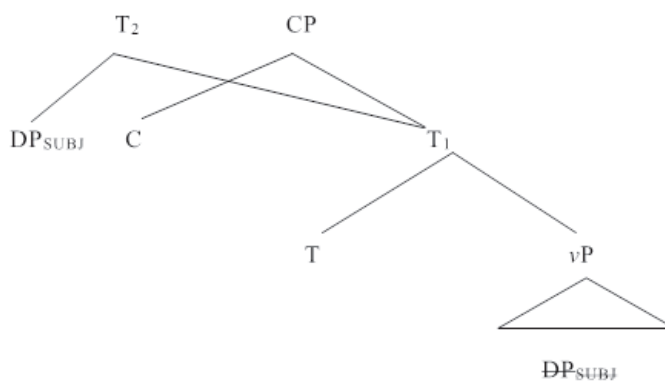
### III Proposal

Our proposal is critically based on the analysis of a counter-cyclic application of Merge proposed by Epstein, Kitahara, and Seely (2012) (henceforth, EKS). Under the feature inheritance analysis of clausal derivation, the introduction of the subject DP to derivation by means of Internal Merge inevitably results in a counter-cyclic operation. EKS argue that such a counter-cyclic Merge operation creates a two-peaked structure, as illustrated in (11) and (12).

(11)



(12)



The two-peaked structure causes the derivation to halt because there is no single root, and it thus never results in a single semantic value at the CI interface (EKS: footnote 1).<sup>6</sup> Thus, the offending subject DP must be Transferred right after the creation of the twin-peaked structure so that the derivation can proceed.

Given EKS's analysis, we argue that a phrasal category bearing the [+focus] feature, which we refer to as a Focus Phrase (FocP), is introduced to the derivation by means of the same counter-cyclic Merge operation mentioned, through the steps shown below.<sup>7</sup>

Let us start with a derivational stage in which  $\nu$  and VP are merged, deriving  $\nu$ P, as indicated in (13).<sup>8</sup>

(13) [ <sub>$\nu$ P</sub>  $\nu$  [<sub>VP</sub> ...]]

We make two assumptions here. First,  $\nu$  has unvalued features including discourse-related features such as [ufocus] and [utopic] as well as formal features

such as [*uphi*], and discourse-related features are not inherited downward to V along with formal features but remain in situ.<sup>9</sup> Second, unvalued discourse-related features are “inert” in that they do not drive the application of Merge until  $\nu$ P is Merged with [+tense] T.

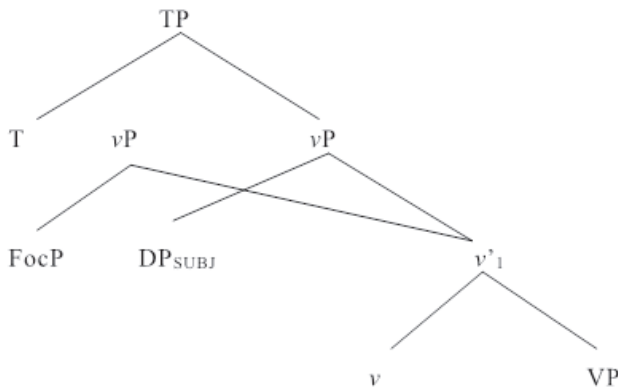
Turning back to the derivation in question, as shown in (14) and (15), the subject DP is externally merged with  $\nu$ P, and then T is externally merged with the derived  $\nu$ P to form TP.

(14) [<sub>VP</sub> DP<sub>SUBJ</sub> [<sub>νV</sub> [<sub>VP</sub> ...]]]

(15) [TP T [<sub>VP</sub> DP<sub>SUBJ</sub> [<sub>νV</sub> [<sub>VP</sub> ...]]]]

As assumed above, the merger of the [+tense] T and the  $\nu$ P renders the “inert” unvalued discourse-related features “active” enough to impel the application of Merge. Thus,  $\nu$  attracts categories such as FocP. We would like to propose that, in accordance with EKS’s analysis, a FocP is counter-cyclically introduced to the derivation after TP is formed as in (15). The FocP is Merged with  $\nu'$  (either externally or internally), resulting in a two-peaked structure, as illustrated in (16). Thus, the middle field is organized differently from that in (5).

(16)



The unvalued feature [*ufocus*] of the  $\nu$  head is valued by the [+focus] feature of the FocP via c-command at this stage. This Merge operation creates a twin-peaked structure, and therefore, as argued by EKS, the FocP must be Transferred right away.

Let us reconsider the two issues outlined in Section II based on our proposal.



First, the Selection Problem can be overcome: the local selection relation between T and  $\nu$  is maintained throughout the derivation, as indicated in (15) and (16).

Second, it has been shown that the derivation of the middle field is now explicable in terms of the narrow-syntax operation Merge, which paves the way to an accommodation of the left-periphery analysis of  $\nu$ P and the Minimalist style of Merge-based structure-building. In particular, the middle field can be constructed in conformity with Chomsky’s (2014) statement in (9). Concurrently, Rizzi’s left periphery analysis schematized in (4) is not applicable to the structure of the middle field, which amounts to the conclusion that the middle field structure depicted in (5) is unsustainable. Categories such as FocP do not organize clause structure in the manner indicated in (5), but play a role in feature valuation in the multiple-peaked structure.

## IV Consequences

There are several consequences that emerge from our proposal, even though more work needs to be done to enhance its descriptive accuracy of our proposal.

First, if both the middle field (i.e. the left periphery of  $\nu$ P) and the clausal left periphery are sensitive to Rizzi’s (2014: 20) Criterial Freezing, which impedes further movement from the left periphery positions, our proposed analysis explains why this should be so.

(17) Criterial Freezing: a phrase meeting a criterion is frozen in place.

Since the middle field is a Transferred domain, as argued in the discussion of (16) above, it is natural that Internal Merge would have no access to it. Therefore, the categories in the middle field are all frozen there, and thus no longer move upward. This status of the middle field has not received a clear-cut explanation, but providing one is now within the scope of our analysis.

Second, as noted in footnote 5, the [+tense] T head rather than the [-tense] one licenses the presence of the middle field (Koichiro Nakamura (p.c.)). This fact has not seriously been discussed so far in generative grammar research, but it can now be attributed to our “active” / “inert” distinction among the unvalued discourse-

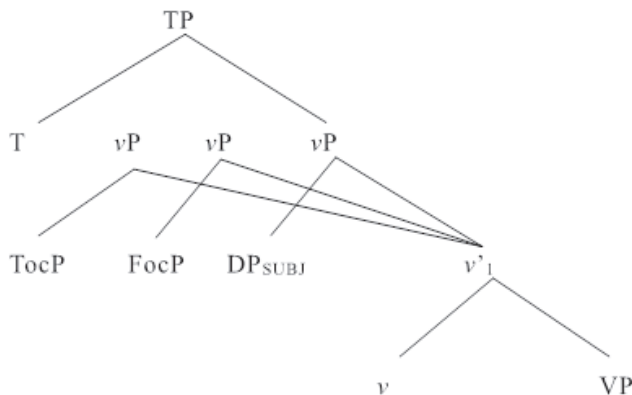
related features of  $\nu$ . As suggested in Section III, the “inert” unvalued discourse feature [*ufocus*] fails to attract a FocP, but once  $\nu$ P is Merged with [+tense] T,  $\nu$  becomes “active” enough to attract a FocP. It follows from this assumption that the presence of the middle field is contingent on the [+tense] T head.

## V Summary and Extensions

To encapsulate, we have argued that the middle field (i.e. the left periphery of  $\nu$ P) is derived by means of Merge in narrow syntax, which in turn explains how the Selection Problem is overcome. As a matter of course, one might go on to extend our proposal to other cases, two of which we would like to discuss in brief below.

First, in Section III we dealt with a case in which there was only one category (i.e. FocP) in the middle field; however, as Jayaseelan (2001) observes, there are languages which allow two or more categories to appear there. Thus, it is necessary to clarify how such cases are derived. As an example, let us examine the case in which a Topic Phrase (TopP) and a FocP are located in the middle field, a case to which we assign the following three-peaked structure.

(18)



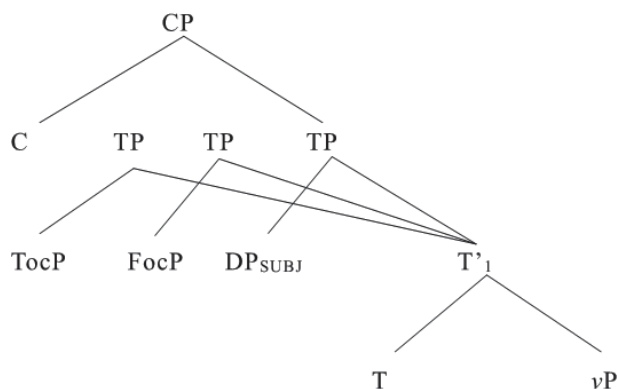
The  $\nu$  head here has two unvalued discourse-related features, [*utopic*] and [*ufocus*], valued by the TopP and the FocP, respectively. Both the TopP and the FocP are Transferred so that the derivation can proceed.

We should note that the reverse order (FocP-TopP) is also available, because

Merge does not care about the order of its application. As CGO argue, linear word order is a matter of externalization rather than that of the narrow syntax. Therefore, it may be true that languages can differ with respect to the linear order of categories, as well as the number of them, in the middle field (see Jayaseelan (2001)), it poses no problem with our proposal but rather falls inside the range of our analysis.

Last, let us examine the clausal left periphery, indicated in (4), in terms of our proposal. For scrutiny of this case, we need a slightly different assumption than before: just like  $\nu$ , C has discourse features as well as formal features, but, unlike  $\nu$ , both features are inherited from C to T; and before this inheritance occurs, C is Merged with TP, whose T is always [+tense] in the matrix clause. This merger changes “inert” unvalued discourse features into “active” ones, so that the features are, when inherited, ready to attract categories such as TopP and FocP in the upcoming derivational stages, as depicted in (19).

(19)



The flexibility of the word order, namely, cross-linguistic difference with respect to it as well as Criterial Freezing effects, is again explainable in the context of our proposal. As clearly shown in (19), discourse-related categories such as TopP and FocP do not participate in the clausal structure-building but instead in the feature valuation of T in the multiple-peaked structure, which enables us to dispense with Rizzi’s (1997) cartographic analysis given in (4). Once again, we have arrived at the seemingly divergent conclusions stated in (9) and (10) with regard to (4) as well as (8). The analyses based on Rizzi’s (1997) cartographic analysis must therefore be

reexamined.

## Notes

- 1 I am grateful to Takeshi Furukawa and Koichiro Nakamura for their comments and suggestions on an earlier version of this paper. The usual disclaimer applies. This work was supported by JSPS KAKENHI Grant Number JP19K00666.
- 2 Jayaseelan (2001) examined Dutch, English, German, and Malayalam cases. There have been a growing number of studies on the left periphery of  $\nu$ P including Belletti (2001, 2004) on Italian, Grewendorf (2005) on Germanic languages, Haegeman and Lohndal (2015) on English, Nakamura (2018) on Japanese, Paul (2002) on Chinese, and Poletto (2006) on Old Italian.
- 3 Jayaseelan (2001) employs the I-system (see (2) and (4)) in place of the T-system (see (3)) for sentential structure, but this notational difference does not affect our discussion.
- 4 For this reason, we do not concentrate on surveying specific examples in the present paper, leaving the task to another paper currently at a preliminary stage (Fukuda (in preparation)).
- 5 Interestingly, according to Koichiro Nakamura (personal communication), the middle field manifests itself, as it does in (5), only when T is [+tense]. To put differently, the [-tense] T head does not allow the presence of the middle field above  $\nu$ P. We will discuss this fact in Section IV.
- 6 It appears that the two-peaked structure is in violation of the No Tampering Condition (Chomsky (2008)). However, since neither  $T_2$  nor  $DP_{SUBJ}$  is a term of CP, it can be plausibly argued that the structure is immune from the condition.
- 7 We should note that at this point we have just departed from Rizzi's left periphery analysis, in that we assume that discourse-related categories such as FocP do not organize clausal structure, as indicated in (4) and (8), but phrasal structure, as will be shown in (16).
- 8 For expository convenience, we do not show how the labels are determined in the course of derivation (see Chomsky (2013, 2015)). We also keep our exposition of feature inheritance to the minimum to simplify discussion.

- 9 This is a difference between discourse-related features and formal features as far as  $\nu$  is concerned. However, C is slightly different in this respect, as will be suggested in Section V.

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