

# A Critique of Phase Extension, With a Comparison to Phase Sliding

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## 1. Introduction

Den Dikken's paper (henceforth DD) explores an interesting alternative to Chomsky's conception of Phase Theory to account for different phenomena involving *Predicate Inversion* (PI). In particular, DD concentrates on cases of so-called copular, locative, and dative inversion (the respective instances in (1)):

- (1)
- a. The #1 best-seller in the country is this book.
  - b. On the president's desk lay this book.
  - c. I gave my students this book.

DD proposes that phases be defined as predications: subject-predicate dependencies mediated by a (dyadic) head called RELATOR, as depicted in (2).

- (2) [<sub>RP</sub> Subject [<sub>R'</sub> RELATOR [Predicate] ] ]

Crucial in DD is the fact that the predicate in (2) be unable to undergo inversion when triggered by a higher-phase Probe, due to Chomsky's (2000, 2001) *Phase Impenetrability Condition* (PIC, see (3)), for that element belongs to the domain of a would-be phase head, the RELATOR:

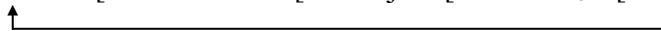
### (3) *Phase Impenetrability Condition*

The domain of H [H = phase head] is not accessible to operations at ZP [next phase]; only H and its edge are accessible to such operations.

[from Chomsky 2001: 14]

Consequently, for PI to take place some process must change things to make movement of the predicate out of the lower phase possible. The solution in DD capitalizes on Chomsky's (1993) original idea that head movement (Internal head Merge; IhM) extends syntactic domains. Hence, if the RELATOR moves to an external head (labeled F in DD) phase dependencies are redefined by means of an operation of *Phase Extension* (PE; see 7 below), and no locality problem arises.

(4)

a. [FP Predicate [F' F [RP Subject [R' RELATOR [ t<sub>Predicate</sub> ] ] ] ] ] ]b. [FP Predicate [F' F+RELATOR [RP Subject [R' t<sub>RELATOR</sub> [ t<sub>Predicate</sub> ] ] ] ] ] ]

With these background assumptions, DD attempts to offer a unitary approach for cases where PI does occur, rendering the *in situ* subject frozen, as we will see in section 3.

Below we discuss the reinterpretation in DD of Chomsky's conception of phases, focusing on the locality principles the paper presupposes.

### 1. Phasehood

The literature doesn't present an agreed-upon notion of what phases reduce to, but there is a tacit agreement in seeing phases as counterparts of classical cycles, syntactic objects with a privileged computational status.

DD starts by providing the following definition of *Inherent Phase*:

#### (5) *Inherent Phase*

An *inherent phase* is a *predication* (subject-predicate structure)

[from Den Dikken 2006b: 1]

Although in their first formulation (Chomsky 2000) phases were defined as “propositional,”<sup>1</sup> it's an interesting question whether all simple subject-predicate dependencies count as propositional (see section 6 of DD). Moreover, is propositionality an ultimately worked out notion? Moro (2006) disagrees and rejects the phasal status of small clauses (arguably the purest incarnation of subject-predicate dependencies), pointing out that “the ‘propositional character’ of phases has never really been used operatively,” especially if the notion of proposition is taken to rely on truth value semantics.<sup>2</sup> In more dramatic terms, Hinzen (2006: 179-80) casts doubt on the empirical basis of propositions altogether, for which “there are no empirical theories at all.”<sup>3</sup>

Chomsky (2001) and onwards avoid these murky issues by relating phasehood to the Case/Agreement systems, C and *v*\* being the phase heads because these are the loci of  $\phi$ -features. From this perspective, the claim in DD that predications are (inherent) phases becomes harder to justify. Moreover, if all subject-predicate dependencies are phases, complex *v*\*P domains like those involved in *locatum* verbs (Hale & Keyser 2002) should involve two phases: one including the subject of the inner small clause, and a second one corresponding to the merger of the external argument.<sup>4</sup>

<sup>1</sup> Chomsky (2000:107) also considers that phases be understood as “convergent” domains (see Uriagereka 1999). Putting aside the issue of how “convergence” should be defined, Chomsky (2000) rejects this possibility, in large part because of technical reasons dependent on economy (more precisely, on local determination of phases).

<sup>2</sup> Noam Chomsky confirms this through personal communication: “In MI (and elsewhere) it's suggested that phases should tend to have some reasonable characteristics at the interface levels, like being ‘propositional’ (a term that [...] would have to be spelled out in some real theory of semantics, if we had one [...]). In what sense is *v*\*P ‘propositional’? That's actually a matter of discovery about what CI characteristics phases have. It surely won't be anything like what formal semantics [...] call ‘propositional’.”

<sup>3</sup> For additional discussion, see also Hinzen (2006: 242-244).

<sup>4</sup> With Hale & Keyser (2002), we take the light verb in (6) to have the rough semantics of *provide*, while the abstract P that of *with*. The representation in (6) does not seem compatible with the system in DD, for the paper doesn't allow theta-role assigners (like P) to be RELATORS (see Den Dikken 2006a: 20-25). For DD, (6) should probably be more accurately represented as in (i):

(i) [<sub>v\*P</sub> John *v*\* [<sub>RP</sub> the horse [<sub>R</sub> RELATOR [<sub>PP</sub> P [saddle] ] ] ] ] ]

$$(6) \left( \begin{array}{c} [_{v^*P} \text{ John } v^* \\ \text{PHASE} \end{array} \left[ \begin{array}{c} [_{PP} \text{ the horse } [_{P'} P [\text{saddle}]] ] \\ \text{PHASE} \end{array} \right] \right)$$

It is not immediately obvious how proceeding this way reduces computational complexity, perhaps the major desideratum behind phases (or any relevant cycles).

In sum, although we are sympathetic to the idea that the syntax of predication –when properly understood– may help understand phase domains, it is not clear to us that the concrete characterization of phases in DD has the desired effect.

More technically, questions emerge if one is to seriously endorse the claim in DD that only  $v^*$  is inherently phasal, T and C becoming so by inheritance. At this point we must introduce the notion of *Phase Extension* (PE).

(7) **Phase Extension**

Syntactic movement of the *head* H of a phase  $\alpha$  up to the head X of the node  $\beta$  dominating  $\alpha$  *extends* the phase up from  $\alpha$  to  $\beta$ ;  $\alpha$  loses its phasehood in the process, and any constituent on the edge of  $\alpha$  ends up in the domain of the derived phase  $\beta$  as a result of Phase Extension.

[from Den Dikken 2006b: 1]

By (7) “only subject-predicate structures are inherently phasal; other nodes can acquire phasehood [...] as a result of movement of the head of the inherent small-clause phase [...] via Phase Extension.” As a result of  $v$  raising to T, “TP becomes a derived phase [...] [a]nd with T subsequently raising on to C, that makes CP a derived phase” (Den Dikken 2006b:14).

PE, as laid out in DD, raises two concerns: one, it strikes us as odd that C and T cannot be regarded as phase heads, if phases are predications –this certainly goes against an important literature indicating that T and C establish predication dependencies;<sup>5</sup> and, two, the status of the device removing “phasehood,” IhM, is unclear: though DD capitalizes on Chomsky (1993) to argue that  $v^*$ -to-T-to-C movement can extend the  $v^*$ P phase, the paper doesn’t consider the arguments that support its phonological nature (see Chomsky 2001 and Boeckx & Stjepanović 2001).<sup>6</sup>

**2. Equidistance**

Let’s return to PI in light of the proposal in DD. As seen in section 1, Chomsky’s PIC predicts that, RPs being phases, predicates are trapped in the RELATOR’s domain, a situation that is salvaged by appealing to PE: the RELATOR moves to a higher head, F in DD (a LINKER, as defined in Den Dikken 2006a), and the phase moves upwards.

(8)

- a. [FP [F’ F [RP Subject [R’ RELATOR [Predicate]]]]]
- b. [FP [F’ F+RELATOR [RP Subject [R’ t<sub>RELATOR</sub> [Predicate]]]]]
- c. [FP Predicate [F’ F+RELATOR [RP Subject [R’ t<sub>RELATOR</sub> [ t<sub>Predicate</sub> ]]]]]]

<sup>5</sup> The idea that C and T are predicates is strengthened if C and T are treated as a species of P, a birelational predicate (see Abels 2003, Demirdache & Uribe-Etxebarria 2000, Hale & Keyser 2002, and Pesetsky & Torrego 2004). Under this perspective simple PPs count as phases too, as argued for by Abels (2003).

<sup>6</sup> DD assumes that Pesetsky & Torrego’s (2004) T-to-C movement extends  $v^*$ P-phasehood to CP. As we understand Pesetsky & Torrego’s (2004) proposal, however, this is not accurate: in their system,  $v^*$ -to-T movement doesn’t take place prior to T-to-C, so  $v^*$ P-phasehood cannot extend to CP.

PE has thus the consequence of rendering the predicate landing site (Spec-F) and the subject base position (Spec-R) “equidistant,” so that in its way up, the predicate can skip the latter without violation of Chomsky’s (1995) *Minimal Link Condition*.

However, DD notes the following technical problem:

[S]uch a phase-extending movement has one further consequence [...] it traps the subject of the small clause inside the newly extended phase. The subject of RP, while originally on the edge of RP phase (cf. [8a]), ends up being embedded within the domain of the extended phase (FP) as a result of movement of the RELATOR up to F (cf [8c]).

[from Den Dikken 2006b: 4]

So by the end of PE, the subject remains in the domain in the complex phase-head F+RELATOR, and no higher Probe can target it. This is –DD argues– the cause of the ungrammaticality of the examples in (9), all of which involve PI prior to wh-movement:

(9)

- a. \*[ Which book do you think [ that the #1 best-seller in the country is  $t_{\text{which book}}$  ] ]?
- b. \*[ Which book do you think [ that on the president’s lay  $t_{\text{which book}}$  ] ]?
- c. \*[ Which paper of yours do you think [ that you sent your students out  $t_{\text{which paper of yours}}$  ] ]?

[from Den Dikken 2006b: 5]

Abstracting away from the data for a moment, observe that nothing precludes subject raising after PI. Concretely, the possibility remains for the *in situ* subject to become an outer-Spec-F. Unless we stipulate otherwise, which is what DD does by endorsing (10):

(10) Adjunction to meaningless categories is disallowed.

[from Den Dikken 2006b: 5]

Assuming F is a meaningless category, (10) does give a way to address the data in (9), preventing the undesirable scenario just described.

Now consider each of the central presuppositions in turn: “equidistance” and (10). First, “equidistance” can be dispensed with if, as Chomsky (2001) argues (*contra* Chomsky 1993; 1995; 2000), strict c-command and evaluation at the phase level are the relevant notions when calculating intervention effects (see the next section).<sup>7</sup> Second, although there may be principled ways of questioning the existence of multiple specifiers (see Boeckx 2006), (10) comes with its own difficulties. To begin with, it is not obvious how a “meaningless category” is to be understood (a placeholder? a featureless item? one with merely uninterpretable features?). More importantly, if F is truly meaningless (making no semantic contribution whatsoever), why should it exist? We underscore this latter point since, after all, it was Chomsky’s (1995) main argument to rule out agreement projections altogether.

If, given the limitations just noted, PE is in the end not relevantly involved in the examples in (9), their ungrammaticality must of course follow from something else.

<sup>7</sup> Chomsky (1993) invoked equidistance to solve an apparent superraising paradox under the assumption that objects raise to a position above the base position of subjects: be it Spec-Agr<sub>0</sub> or Spec-v\*. DD appears to assume this when discussing Object Shift (pp. 10-11), but as noted by Lasnik & Boeckx (2006: 119) the problem goes away under the Koizumi (1995)/Lasnik (1999) analysis of object raising, in which these dependents move to a position that doesn’t have to bypass the *in situ* subject. See Hiraiwa (2005) for empirical evidence against “equidistance”.

Moro (2006) provides an answer to (9a), which Gallego (2007) attempts to push to the other examples in (9). We will not have space to go into this analysis here.

### 3. Phase Sliding

In this final section we compare PE as in DD with what gets dubbed *Phase Sliding* (PS) in Gallego & Uriagereka (2006). As is noted in DD (p. 18) the proposals are indeed very similar. Building on Gallego (2005), Gallego & Uriagereka (2006) argue that the  $v^*P$  phase is pushed up to TP by means of IhM. Our explicit goal was to capture the old intuition that the T node encodes a central parametrical cut.

For Gallego & Uriagereka (2006), PS doesn't make TP a phase: although the phase effects are robust at the TP level, they are just a side effect of  $v^*$ -to-T movement –in other words,  $v^*$  retains “phasehood.” We argue that the amalgamated new head  $v^*/T$  is a phase boundary.<sup>8</sup> Especially compelling for our analysis is the fact that VOS sentences (see Ordóñez 1998) are grammatical:

- (14) *Recogió cada coche su propietario.* (Spanish)  
 Pick-up-PST-3.SG each car its owner  
 ‘Its owner picked up each car’

The important thing about (14) is that the object can bind into the subject, which we take to indicate A-movement to an outer-Spec- $v^*$ , over the *in situ* subject. As things stand according to the theory outlined in Chomsky (2001; 2005), the object should move there within the  $v^*P$  phase, and block *Agree* (C-T, subject), causing the derivation to crash. But this, as we see, is not borne out. Gallego & Uriagereka (2006) suggest that  $v^*$ -to-T is the key in making sentences like (14) grammatical and provide the test in (15) to make the case. In (15) we can control  $v^*$ -to-T movement by inserting an AUX element (progressive *estar*) in T. When the object is shifted in this context, the sentence is ruled out:

- (15)  
 a. [<sub>CP</sub> C [<sub>TP</sub> Ayer estaba [<sub>v<sup>\*</sup>P</sub> Isabel leyendo un libro ] ] ] (Spanish)  
     Yesterday be-PST-3.SG Isabel reading a book  
     ‘Yesterday, Isabel was reading a book.’  
 a. \* [<sub>CP</sub> C [<sub>TP</sub> Ayer estaba [<sub>v<sup>\*</sup>P</sub> un libro [<sub>v<sup>\*</sup>P</sub> Isabel leyendo *t<sub>un libro</sub>* ] ] ] ] (Spanish)  
     Yesterday be-PST-3.SG a book Isabel reading  
     ‘Yesterday, Isabel was reading a book.’

Notice that the analysis doesn't invoke “equidistance:” we argue that the subject and the object receive Case in parallel. This is because T and  $v^*$  amalgamate, not because the  $\phi$ -Probe launched from C-T can bypass the shifted object in its way down.

PS seems to us to be conceptually superior to PE, both because it sticks to recent versions of the theory (without invoking such notions as “equidistance”), and also since PS isn't forced to claim that phases vary cross-linguistically.

<sup>8</sup> Gallego (2005) points out that the gist of PS goes back to Chomsky (1986: 69-70); details there are phrased in terms of “barrierhood,” not “phasehood,” but terminology aside, the analysis is virtually identical.

#### 4. Final Remarks

Chomsky's Phase Theory is a research program, and as such it could be pursued in various ways. DD is surely one such way, but we have shown some scepticism about it. In our view it is not at issue whether IhM affects phase boundaries (our independently proposed PS makes this very point too), but rather whether we can find a conceptual motivation for this move, whose pedigree, as such, is actually quite old. Contrary to PE in the sense in DD, our PS endorses the "phasehood" of C and  $v^*$ , taking  $\phi$ -features to be the key property of phases (in much the way mentioned in fn. 1, ultimately related to morphological richness). Perhaps is our lack of imagination, but we couldn't find an equally intuitive motivation for the DD proposal.

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