

Reviews

Comptes rendus

Jeroen van Craenenbroeck, Cora Pots, and Tanja Temmerman, eds. 2020. *Recent developments in phase theory*. Berlin, Boston: De Gruyter. Pp. 214. \$144.99 (hardcover).

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The debate over how to formalize the concept of phase, as one of the core notions in the Minimalist Program, can be roughly divided into two lines:

- (1) A rigid approach: CP and v*P are the two major (perhaps only) phases, as Chomsky initially proposed (Chomsky 2000) and consistently defended (Chomsky 2019).
- (2) A flexible approach: any phrase is potentially able to be a phase, depending on the syntactic environment where the phrase occurs (den Dikken 2007, Gallego 2010, Bošković 2014).

Recent Developments in Phase Theory, edited by Jeroen van Craenenbroeck, Cora Pots, and Tanja Temmerman, is a compendium of articles centering on recent key topics in phase theory. Rather than addressing the conceptual debate, this volume aims to deepen our comprehension of phase via applying one or the other of the approaches to specific linguistic phenomena. Besides the introductory remarks, the book has three main thematic foci, “Phases and ellipsis”, “Domain-internal phases”, and “Phases and labeling”. Below I will first sum up the core ideas of each chapter, then I will critically assess the volume as a whole.

Chapter 1, written by the editors of this volume, presents some introductory remarks on the book and summarizes the contribution of each paper. The editors also remind us that the question of whether the size of phases is fixed or flexible surfaces, in one way or another, in all of the chapters.

Part I is concerned with phase and ellipsis. In chapter 2, “Aspect interacts with phasehood: Evidence from Serbian VP-ellipsis”, Neda Todorović investigates the distributional pattern of VP-ellipsis in Serbian. Todorović proposes that in order to

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be elidable, the target VP must share the same phasal status with its strict antecedent. Specifically, only when both the target and its antecedent are phases or both are phasal complements can VP ellipsis be licensed. Concerning the phasal identity of VP, Todorović notes that it can be identified by examining the hierarchical structure specified by the aspectual markers on the verb, following Bošković's (2014) contextual approach to phase, which suggests that the highest projection in the extended domain of all major categories counts as a phase. Therefore, interaction between aspect and phasehood is able to capture the availability of VP ellipsis in Serbian systematically.

In chapter 3, "On top but not a phase - Phasehood inheritance and variation in sluicing", while maintaining Chomsky's assertion that CP is a phase, Barbara Citko argues that the phasehood of CP can be inherited by its daughter node, such as the Focus phrase. Evidence for this comes from the fact that in Polish the Focus head can not only license sluicing but also trigger *wh*-movement. Since movement of *wh*-phrases must be driven by uninterpretable features, it implies that the Focus head must be endowed with uninterpretable features. If being the locus of uninterpretable features is the definitional characteristic of phase heads (Gallego 2010), then it follows that the Focus head should be the phase head. Citko attributes the cross-linguistic variation between English sluicing and Polish sluicing to whether phasehood inheritance can take place or not.

Part II deals with domain-internal phases. In chapter 4, "Parallels in the structure of phases in clausal and nominal domains", Andrew Simpson and Saurov Syed claim that like clauses, nominal phrases may also be bi-phasal, consisting of a DP phase and an internal Q(uantifier)P phase. Firstly, they argue that QP is a phase on the observation that in Bangla, leftward movement of a noun within the nominal domain to signal a definite interpretation as in (3b) would be blocked when a higher numeral appears, as in (3c).

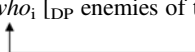
- (3) a. tin Te notun tupi b. [notun tupi_k] tin Te t_k c. *[notun tupi_k] choy Ta t_k
 3 CLF new hat. new hat 3 CLF new hat 6 CLF
 'three new hats' 'the three new hats' 'the six new hats' (p. 63)

On the assumption that lower numerals (e.g., 1–4) are heads in Q⁰, while higher numerals are phrasal constituents in Spec-QP, they propose that Spec-QP is an escape hatch that makes the moved element visible to be attracted by a higher probe, similar to the intermediate Spec-CP position in the successive-cyclic *wh*-movement. In addition, they argue that DP is a phase, in Bangla. Though Bangla lacks overt determiners, it exhibits quintessential properties of DP languages rather than NP languages, as diagnosed by the patterns relating to DP constituents presented in Bošković (2009), rendering Bangla a "covert" DP language. Furthermore, DP functions as a phase in Bangla, evidenced by the patterns of argument ellipsis and extraction from the DP constituents. These bi-phasality arguments from Bangla nominal constituents thus strengthen the long-standing generalization that nominal phrases are structured in a parallel fashion, with clauses that are widely assumed to be composed of a CP phase and a vP phase.

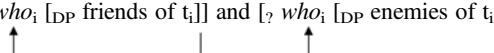
Chapter 5 “How to detect a phase” is an overview article. Coppe van Urk uses the successive-cyclicality effects as the diagnostics for the phasehood of a phrase, given the common assumption that derivation of a long-distance dependency must proceed cyclically through every intermediate phase. Specifically, he presents a range of syntactic, semantic, and morpho-phonological effects associated with the intermediate movement through the edge of a phase. The result is that all such effects are attested with the edge of the clause and the verb phrase, confirming the classical insight that CP and vP are phases. van Urk further extends these diagnostics to examine PP and DP, showing that some of the successive-cyclicality effects are observed in these domains. For example, in Jamaican Creole, though an *in-situ* complement is preceded by the preposition *fi* as in (4a), extraction of a complement out of the PP is marked by *fa*, as in (4b). This contrast demonstrates that movement of the complement might undergo the edge of the PP domain, motivating van Urk to conclude that PP can be taken as a phase.

- (4) a. Im bring aki [PP **fi**/***fa** piknidem]
 3SG bring ackee for/for.EXT children
 ‘(S)he brought the ackee for the children.’
- b. A huu im bring dat [PP ***fi/fa** ____]?
 A who 3SG bring that for/for.EXT
 ‘Who did (s)he bring that for?’ (p. 119)

Part III relates phase to labeling. In chapter 6, “On the Coordinate Structure Constraint, across-the-board-movement, phases, and labeling”, Željko Bošković demonstrates that the claim that conjuncts are phases (based on his contextual approach to phase, Bošković 2014) can capture a paradigm of extraction from the coordinated structure.

- (5) a. *Who_i did you see [[enemies of t_i] and [John]]?
 b. [_{ConjP} [? who_i [_{DP} enemies of t_i]] and [_{DP} John]] (p. 138)
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Movement of *who*, according to the PIC, is required to proceed through the edge of the conjunct. However, successive-cyclic movement through this phasal edge would delabel this conjunct, because merger of *who* and the conjunct DP, as the type of phrase-phrase merge in Chomsky (2013), yields a syntactic object that is unlabeled (indicated in examples (5)–(6) by ?), which gives rise to the coordination of an unlabeled conjunct and a DP conjunct, a violation of the Coordination-of-Likes (CoL), hence the ungrammaticality of (5).

- (6) Who_i did you see [friends of t_i] and [enemies of t_i]?
 [_{ConjP} [? who_i [_{DP} friends of t_i]] and [? who_i [_{DP} enemies of t_i]]] (p. 138)
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In contrast, across-the-board movement of *who* in (6) delabels both of the conjuncts. Coordination of these two unlabeled conjuncts is not in violation of CoL, hence the well-formedness of (6).

In chapter 7 “Labeling as two-stage process: Evidence from semantic agreement”, Ivona Kučerová proposes that labeling is a two-stage process: first, labeling by features projected from the narrow syntax; second, labeling by the syntax-semantics interface. These two processes are mediated by the phase heads which map narrow syntax features onto features within the phase label to make them legible to the semantic module. However, Kučerová does not make it explicit what constituent counts as phase in her system. Hence, it is unclear whether she adopts a rigid or flexible approach to the concept of phase.

To sum up, papers in this volume are quite a wide collection of applications of phase theory. Linguistic phenomena investigated include VP-ellipsis, sluicing, blocking effect, and conjunction, based on a wealth of cross-linguistic data from Serbian, Polish, Bangla, and English, which provides a solid empirical foundation for the theory.

However, it should be noted that in the literature, no consensus has been reached on the inventory of phase. What exactly counts as a phase? Phrases that have been argued to be phases are AspP (chapter 2), FocP (chapter 3), DP and QP (chapter 4), PP (chapter 5), ConjP and IP (chapter 6), apart from the commonly assumed CP and vP. Though the editors in the introductory chapter sum up the approach that each chapter adopts when investigating the linguistic topics, they do not offer a definitive answer to the question of how to reconcile Chomsky’s classical insight on phase with the flexible approach to phase. Recall that phase, as Chomsky (2000) argues, is a locality notion that requires the complement of the phase head to move to its edge so as to avoid a violation of PIC. I would like to suggest that a sign of intermediate movement through the edge of a phrase can be a safe diagnostic for phasehood, just like one of the many criteria mentioned by van Urk in his overview chapter that has extended this strategy to DP and PP. Following this suggestion, we can realize that even AspP, FocP, QP, and ConjP can be demonstrated to exhibit the edge effect, exactly like CP and vP that have already been evidenced to be involved with successive-cyclicity effect on their edges (van Urk and Richards 2015). As long as the reflex of successive cyclicity can be attested in the structural domains, we can take them as phases. Therefore, a dynamic, rather than a static view to phase, would be preferred to capture the panorama during the derivation of syntactic structures.

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Garcia, Guilherme D. 2021. *Data visualization and analysis in second language research*. New York, NY: Routledge. Pp. 286. USD \$44.95 (softcover). Also available electronically.

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Data visualization and analysis in second language research grew out of workshops developed and delivered by Guilherme D. Garcia at McGill, Concordia, and Ball State universities. These origins are evidenced by the conversational tone and exercise-based approach used throughout the book. Garcia aims to train readers to use the R programming language (through the R Studio interface) to construct robust statistical analyses while producing clear and informative plots and figures. Instead of traditional *t*-tests and ANOVAs, this book focuses on regression analyses, hierarchical models (a.k.a. mixed-effects models), and Bayesian statistics.

Part I, “Getting Ready”, includes a straightforward introduction detailing some of the author’s rationale and offers a brief review of some fundamental notions: Garcia assumes his readers have some basic knowledge of statistics (e.g., sample vs. population means, *p*-values, effect sizes, confidence intervals, standard errors, *t*-tests, ANOVA) but no prior experience with R or the more advanced statistics detailed in later sections. The second chapter, “R Basics”, explains why this specific program is preferred over others and walks readers through the R/R Studio setup, including the installation of important packages and some initial calculations and script blocks, as well as more general concepts relating to data organization (e.g., tidy data, as in Wickham 2014).

Part II, “Visualizing the Data”, includes chapters 3–5: “Continuous Data”, “Categorical Data” and “Aesthetics: Optimizing Your Figures”. It focuses on the presentation of data through plots and figures, which Garcia rightly insists need to communicate clearly the focus of the research and should help inform decisions relevant to later analyses. In this section the author aspires to convince readers of “the numerous advantages of visualizing patterns *before* statistically analyzing them” (p. 239). Some of the technical programming aspects found within these chapters include transforming binary/categorical data into continuous (hence plottable) variables, and the use of facets (i.e., layers) that allow the combination of plot types and the improvement of figures’ explanatory potential.

Part III, “Analyzing the Data”, constitutes the most dense and demanding portion of the book. It begins with generalized linear models in chapters 6–8: “Linear