Recent developments in Phase Theory
Introductory remarks

Jeroen van Craenenbroeck, Cora Pots, and Tanja Temmerman

1   Introduction

Throughout the history of generative grammar, there have been various ways of implementing locality effects, for example through Transformational Cycles (Chomsky 1965, Kayne 1975) or Barriers (Chomsky 1986). Phase Theory (Uriagereka 1999, Chomsky 2000, 2001) constitutes the most recent development in this line of thinking: it is argued that there exist discrete structural domains in natural language that exhibit a degree of syntactic, semantic, and phonological independence from the rest of the computation. Phase Theory offers a tool for investigating and understanding such domains. However, since the inception of phases, there have been many different proposals about the specific formalization of this concept, along with much debate about the ways in which (and the extent to which) phases can be evidenced empirically—and indeed whether they exist at all. The aim of this volume is to explore a number of recent developments (both empirical and theoretical) in Phase Theory, thus contributing to our overall understanding of the concept of phases.

The six chapters of this book have been organized around three current themes in Phase Theory: (i) the interaction of phases and ellipsis, (ii) the existence and properties of domain-internal phases, and (iii) phases and labeling. In order to reflect this thematic tripartition, the volume has been divided into three parts. In addition, there is a fourth theme, which surfaces in all of the chapters in one form or another; the question of whether the size of phases is fixed or flexible. In this introductory chapter, we introduce those four topics and indicate which position the individual chapters stake out with respect to them.

2   Phases and ellipsis

Given that phase heads signal Spell-Out points, i.e. points of Transfer to the PF-interface (Uriagereka 1999, Chomsky 2000, 2001), and given that one of the dominant approaches to ellipsis takes this process to involve deletion or non-pronunciation at PF (Merchant 2001), it seems only natural to try and link these two phenomena. Indeed, over the years, various authors have proposed that ellipsis sites can be reduced to phasal complements (Gengel 2007, Rouveret 2012) (though see Aelbrecht (2010) for an opposing view) and hence, that ellipsis can be used as a diagnostic for phasehood. In recent years, Bošković (2014) has brought this issue to the forefront of linguistic theorizing, by putting forward a very specific proposal in which *both* phasal complements and entire phases can undergo ellipsis, but no other constituents can. The impact of Bošković's (2014) proposal on the (ellipsis and phases) literature has been substantial, with researchers arguing both for and against Bošković's proposal. Bošković (2014) has sparked an interesting debate regarding the extent to which ellipsis can be used to detect phasehood: exactly how tight is the relationship between phases and ellipsis? If the link between phases and ellipsis pans out, it has important repercussions for our understanding of phases. On the one hand, it confirms Chomsky's classical intuition that phases are 'PF-complete' in some sense, but on the other hand, the fact that both full phases and phasal complements are candidates for ellipsis does not mesh well with Chomsky's classical approach, which clearly distinguishes between the two. The first two chapters in this volume address Bošković's proposal, though from different perspectives and with a different conclusion.

Neda Todorović's contribution "Aspect interacts with phasehood: evidence from Serbian VP-ellipsis" shows that the hypothesis that both phases and phasal complements can be deleted yields the correct empirical results in describing VP-ellipsis in Serbian. There is a twist, however, and one that takes us

beyond Bošković's proposal: Todorović argues that the phasal (complement) status of a constituent not only decides if that constituent can be elided, it is also the basis for an additional identity constraint on ellipsis. This phasal identity requirement states that phasal ellipsis sites need to have phasal antecedents, and phasal complement ellipsis sites need to have phasal complements as antecedents. To the extent that this identity condition in terms of phasal status is on the right track, it implies that phase theory is even more intimately connected to the mechanism of ellipsis than was previously assumed.

Barbara Citko takes a different stance in her chapter "On Top but not a Phase: phasehood inheritance and variation in sluicing". She focuses on Polish, as a representative of the so-called 'focus sluicing languages', whereby the remnant that survives after sluicing (typically a *wh*-phrase) resides not in the highest specifier of the left periphery (call it specCP), but rather in a lower one (typically identified as specFocP). The data patterns discussed by Citko suggest that phasal complements can be elided by sluicing, but entire phases cannot. Citko argues that FocP is a phase in Polish (on account of it triggering A′-movement) and then goes on to show that while the complement of Foc can be elided (leaving just the focused remnant and a complementizer to its left), ellipsis of the entire FocP (leaving just the complementizer) is illicit. As such, she argues against Bošković (2014) and presents an analysis that harkens back to earlier approaches to the interaction between phasehood and ellipsis (Gengel 2007, Rouveret 2012).

The fact that these two chapters disagree on the elidability of entire phases shows that the correctness of Bošković's (2014) conjecture is a still unresolved issue that needs further research. At the same time, it is worth speculating on why Todorović and Citko arrive at such different conclusions. One point to note is that they focus on different ellipsis mechanisms, and, as a result, on different phases: while Citko's discussion is concerned with the maximal clausal phase (CP), Todorović focuses on the lexical or 'mid-level' verbal phase (*v*P). It is not inconceivable that these represent two different types of phases, with different properties. That is precisely the issue that is taken up in part two of this volume.

3   Domain-internal phases

While many researchers agree that entire clauses and entire nominal constituents—'full' CPs and DPs, let's say—constitute phases, there is much less agreement about the question of whether there are also 'domain-internal phases' such as *v*P for the clausal domain, and NP, NumP, or QP for the nominal domain. If so, how can these be detected, and what is the evidence in favor of postulating such domain-internal phases? And even if one does assume both types of phases to exist, there is the additional question of whether they have exactly the same status and properties (see e.g. Rackowski and Richards (2005), den Dikken (2009), Keine (2016) for arguments that they do not). These questions are addressed in the next two chapters of this book.

Andrew Simpson and Saurov Syed focus on "Parallels in the structure of phases in clausal and nominal domains" in their chapter. Using data from word order patterns and other syntactic phenomena, they argue that the Bangla DP contains an internal phase boundary, which they identify as QP. They go to great lengths showing that this phasal domain is not identical to the highest nominal layer, i.e. DP, and that it behaves like a *bona fide* phase in hosting intermediate landing sites of (DP-internal) successive-cyclic movement and interacting with ellipsis (in a way predicted by Bošković (2014), see also section 2 above). As such, Simpson and Syed present arguments to the effect that both the clause and the noun phrase may be bi-phasal, a result that both solidifies the much-invoked but seldom demonstrated bi-phasality of the clause, and confirms the strong structural parallelism between clauses and complex nominal phrases. At the same time, Simpson and Syed's proposal leaves room for cross-linguistic variation, whereby some languages (such as Bangla or English) project a full, bi-phasal structure in their nominal domain, whereas others (such as Polish) project only up to the lowest phase.

Coppe van Urk takes a broader perspective in his chapter by presenting "A taxonomy of successive cyclicity effects". Based on a wide-ranging literature study, he shows that there is no difference in the range of successive cyclicity effects displayed at the CP- and at the *v*P-level: both argue for a view in which long-distance dependencies involve successive-cyclic steps of feature-driven movement that leaves copies. As far as the clausal level is concerned, then, the conclusions concerning domain-internal phases are clear: (i) they exist, and (ii) they have exactly the same status and properties as their domain-maximal counterparts. With respect to non-clausal domains—van Urk focuses in particular on DPs and PPs—the results

are much less unequivocal. While there is some evidence that DP and PP function as locality domains, it is much scarcer than the successive cyclicity effects found at the clausal and verbal level. As such, an important contribution of this chapter is the realization that while diagnostics for successive cyclicity abound at the CP- and *v*P-level, they are harder to come by at the DP- and PP-level. This prompts van Urk to leave open the possibility that there is a qualitative asymmetry between CP/*v*P and DP/PP in the domain of successive cyclicity, as proposed by Bošković (2015).

4   Phases and labeling

The third and final part of this volume deals with labeling, in particular the extent to which and the ways in which Chomsky (2013)'s recent proposals on labeling interact with phasehood. While the two chapters in this part treat this issue from quite different perspectives, they converge in the importance of 'derivational timing', i.e. the order in which operations apply, or the order in which the adherence to certain constraints is evaluated.

   Žjelko Bošković's contribution focuses "On the Coordinate Structure Constraint, Across-The-Board-movement, phases, and labeling". The gist of Bošković's analysis is as follows. Conjuncts are phases. Extraction from a phase triggers successive-cyclic movement via the phase edge. Under the assumption that such movement is not feature-driven—an assumption, we should point out, that runs counter to one of the conclusions of van Urk's chapter (cf. *supra*)—the resulting configuration leads to a labeling conflict: two XPs are merged but there is no joint feature that can serve as label for the overarching constituent. In Bošković's terms, this movement operation 'delabels' the constituent. Add to this the Law of the Coordination of Likes (LCL), and it becomes clear why extraction from a conjunct is disallowed, i.e. why the Coordinate Structure Constraint exists: movement to the edge of the conjunct delabels that conjunct and, as a result, it is no longer of the same category as the second conjunct, and the LCL is violated. By that same token, the analysis correctly predicts that extraction from both conjuncts—of which ATB-movement is the most well-known instantiation—is well-formed: now both conjuncts are delabeled, and as a result the LCL is no longer violated.

   Whereas Bošković focuses on labeling conflicts that arise in the absence of Agree-driving features, Ivona Kučerová examines the labeling process in the presence of such features in her chapter "Labeling as two-stage process: evidence from semantic agreement". Just as in Bošković's chapter, however, derivational timing once again plays an important role. In particular, Kučerová argues that the labeling process should be split up into two stages. The first one is purely syntactic, driven by features projected from narrow syntax, whereas the second one involves labeling by the syntax-semantics interface. The role of phase heads is then to map narrow syntax features (first labeling stage) onto features within the phase label making them legible to the semantics module (second labeling stage). Empirical support for the proposal comes from nominal, anaphoric and conjunct agreement in Italian, Czech, and English.

5   The rigid vs. flexible nature of phases

As should have become clear at various points in the above discussion, the organization of the six chapters into three themes should not be taken to mean that there are no common points between chapters that belong to different themes. That holds in particular for the question of whether phases are rigid/absolute or flexible/context-sensitive, a topic that shows up in one form or another in most, if not all chapters in this book. In its essence, this issue boils down to the question of what the inventory of phases looks like. For example, does it always include CP, DP, and *v*P, or can these projections in some languages, in some constructions, in some contexts, also *not* be phasal? Influential proposals in this respect are Bošković (2014) and Wurmbrand (2017), who argue that the highest head in the extended projection of a lexical head is a phase head, regardless of the precise identity or featural content of that head. As such, a nominal domain that only projects up to, say, *n*P has this projection as its phase level, while in one that goes all the way up to DP, this same *n*P is non-phasal (but DP is). A different take on phasal variability can be found in den Dikken (2007)'s work on Phase Extension and Gallego (2010)'s discussion of Phase

Sliding. What these accounts have in common is that a projection can gain or lose phasehood as a result of a derivational operation (typically movement).

The chapters in this volume also grapple with this issue, and present various ways of dealing with it. Bošković (not surprisingly) adopts his own contextual approach to phases in accounting for why conjuncts are phases even when the constituents making up those conjuncts are not necessarily phasal in isolation. For example, in a coordination of IPs selected by a single C-head, the ConjP-projection intervenes between (the two) IP(s) and CP, breaks up the extended projection of the verbal head inside the conjuncts and hence, causes the coordinated IPs to be phasal. A similar line of reasoning can be found in Todorović's chapter. She examines various types of aspect in Serbian, and depending on their precise properties, takes them to be part of the verbal extended projection or not. If they are, the heads hosting this aspectual information are phasal (because they close off the extended verbal projection). If they are not, then it is the immediately lower head that is phasal.

Citko addresses crosslinguistic variation with respect to phasehood (Wurmbrand 2017), with the C-head being a phase head in some languages, and the Foc-head being a phase head in others. Moreover, in her chapter, she presents an interesting twist on the derivational approaches to phasal flexibility such as those found in den Dikken (2007) and Gallego (2010). While in those works, the phasehood of a particular projection is raised up to a higher projection (as a result of head movement to the head of that projection), Citko proposes a scenario whereby the phasehood of CP is *lowered* onto FocP. She sees this mechanism as an extension of Chomsky (2007, 2008)'s notion of Feature Inheritance, an operation she terms Phase Inheritance.

Simpson and Syed argue that their biphasal approach to the nominal domain is compatible with Bošković (2014)'s contextual approach to phases, i.e. his position that it is the highest nominal projection—and only that one—that constitutes the phase in the nominal domain. Echoing a sentiment also found in van Urk's chapter, they point out that evidence in favor of the domain-internal phase might simply be harder to come by in the nominal domain, though for largely orthogonal reasons.

The two chapters that address the rigid vs. flexible nature of phases least explicitly are also the ones that most closely adhere to the traditional, absolute view on phases. In van Urk's literature review, the domain-internal phase is very specifically identified as *v*P, i.e. the projection hosting the external argument in its specifier, independently of what the entire extended projection of the verb looks like. Similarly, Kučerová seems to adopt the view—altough admittedly, the issue remains largely implicit—that phase heads are those heads that carry uninterpretable features, as in Chomsky (2008).

6   Conclusion

As evidenced by the chapters in this volume, Phase Theory is not only a lively and interesting research topic in and of itself, it also interfaces with many other linguistic topics that are currently under debate. We have little doubt, then, that these issues will remain at the forefront of linguistic theorizing for the foreseeable future and believe that the present volume can make a meaningful contribution to that debate.

References

Aelbrecht, Lobke. 2010. *The syntactic licensing of ellipsis*. John Benjamins Publishing Company.

Bošković, Željko. 2014. Now i'm a phase, now i'm not a phase: On the variability of phases with extraction and ellipsis. *Linguistic Inquiry* 45:27–89.

Bošković, Željko. 2015. From the complex NP to everything: on deep extractions across categories. *The Linguistic Review* 32:603–669.

Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, Massachusetts: M.I.T. Press.

Chomsky, Noam. 1986. *Barriers*. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 2000. Minimalist inquiries: The framework. In *Step by step: Essays on minimalist syntax in honor of Howard Lasnik*, ed. Roger Martin, David Michaels, and Juan Uriagereka, 89–156. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In *Ken Hale: A life in linguistics*, ed. Michael Kenstowicz, 1–52. Cambridge, Massachusetts: MIT Press.

Chomsky, Noam. 2007. Approaching UG from below. In *Interfaces + Recursion = Language? Chomsky's minimalism and the view from syntax-semantics*, ed. Uli Sauerland and Hans-Martin Gärtner, 1–30. Berlin and New York: Mouton de Gruyter.

Chomsky, Noam. 2008. On phases. In *Foundational issues in linguistic theory*, ed. Robert Freidin, Carlos Otero, and Maria Luisa Zubizarreta, 133–166. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130:33–49.

den Dikken, Marcel. 2007. Phase extension. Contours of a theory of the role of head movement in phrasal extraction. *Theoretical Linguistics* 33:1–41.

den Dikken, Marcel. 2009. Arguments for successive-cyclic movement through specCP: a critical review. *Linguistic Variation Yearbook* 6:89–126.

Gallego, Ángel. 2010. *Phase theory*. Amsterdam: John Benjamins.

Gengel, Kirsten. 2007. Phases and ellipsis. In *Proceedings of NELS*, volume 37. Amherst, MA: GSLA.

Kayne, Richard S. 1975. *French syntax: the transformational cycle*. Cambridge, Massachusetts: MIT Press.

Keine, Stefan. 2016. Probes and their horizons. Doctoral Dissertation, University of Massachusetts at Amherst.

Merchant, Jason. 2001. *The syntax of silence: sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Rackowski, Andrea, and Norvin Richards. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36:565–599.

Rouveret, Alain. 2012. Vp ellipsis, phases and the syntax of morphology. *Natural Language and Linguistic Theory* 30:897–963.

Uriagereka, Juan. 1999. Multiple spell-out. In *Working minimalism*, ed. Samuel Epstein and Norbert Hornstein, 251–282. Cambridge, Massachusetts: MIT Press.

Wurmbrand, Susi. 2017. Stripping and topless complements. *Linguistic Inquiry* 48:341–366.