The Phase Impenetrability Condition, successive cyclicity, and the direction of structure building

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1 Introduction

- when a syntactic object undergoes Spell-Out, it is 'handed over' to PF integrally, and its valued uninterpretable features are 'stripped away'

→ the result is 'frozen' into a 'giant compound'

→ if the syntactic object in question is not itself the root of the tree, it is subsequently placed back into the syntax, becoming part of the lexical subarray for the continuation of the syntactic derivation

- the stages through which syntactic derivations evolve are called 'phases', and the derivational model that incorporates this philosophy is accordingly called 'derivation by phase'

→ Chomsky has heralded the bottom-up derivation-by-phase model as a significant step towards computational efficiency

- the name 'derivation by phase' is quite misleading: the syntactic objects that undergo Spell-Out are usually not the phases themselves

(1) *Phase Impenetrability Condition* (PIC)
the domain of H is not accessible to operations outside HP; only H and its edge are accessible to such operations

→ the name for (1) is misleading as well: the PIC does not actually state that phases are impenetrable; it only declares the phase head's complement opaque

- Fox & Pesetsky (2005): upon Spell-Out of a phase, linearisation instructions can and should be given to the *entire* phase, not just to the complement of the phase head

→ if 'feature stripping' and 'freezing' could also proceed in this fashion, the derivation would literally proceed phase by phase, and the PIC would truly deserve its name

→ the obvious stumbling block for the idea that the entire phase is 'stripped' and 'frozen' upon completion is that it appears that parts of the phase remain accessible later in the syntactic derivation

- this paper will argue that we do not need to exempt the head and the edge of the phase from Spell-Out at the phase level

→ a re-evaulation of the notion of 'head movement' renders head exemption redundant

→ a critical reappraisal of the idea that long-distance movement dependencies proceed in a successive-cyclic manner, from phase to phase, leads to the conclusion that it should be fundamentally rethought — so-called successive-cyclic movement should be remodelled as fell-swoop long-distance movement dependent on successive-cyclic Agree relations between potential phases and higher probes

- central to the analysis of long-distance movement is the idea that Agree between a potential phase and the next probe up the tree '**extends**' the lower phase up to the projection of the higher probe

→ 'phase extension' (based on Den Dikken 2006a, 2007a,b) is principled and empirically adequate, but fits in poorly with the idea that syntactic structure is built incrementally from bottom to top

→ I will explore the prospects of a **top-down left-to-right structure-building model** for syntactic computation, providing a new outlook on the relationship between *wh*-scope marking and parasitic gap constructions along the way

2 Derivation by phase, with zero penetrability

2.1 The head of the phase

- by the X-bar schema, features of a head of a phrase automatically propagate to the phrase as a whole
  → if the head is a phase head, its features are always present on the phase as a whole, and will always remain visible on the entire phase for the purposes of Agree even if the head is not itself (directly) visible to any outside probes
  → this is already sufficient to ensure that the head of a phase can be seen by outside probes for Agree

- for displacement of heads, much depends on the approach to head movement that one subscribes to
  → there are two promising alternatives to a movement-based account on the market
    (i) head movement as Agree between a probe and a 'defective goal' (Roberts 2010)
    (ii) late lexical insertion plus 'spanning' (*i.a.* Williams 2003, Ramchand 2008, 2011, Dékány 2011)

- in neither *(i)* nor *(ii)* does the PIC need to exempt the head of a phase from being affected by Spell-Out of the phase

2.2 The edge of the phase

- successive-cyclic movement is widely considered to be both inescapable and strongly empirically supported
  → if it exists, it is quintessentially transphasal and requires that the edge of a phase not undergo Spell-Out together with the complement of the phase head

- Chomsky has argued in his most recent work that successive cyclicity falls out from the challenge that XP–YP structures pose for labelling
  → a simple XP structure is labelled based on the properties of the head X
  → XP–YP structures are not straightforwardly labellable
  → when a *wh*-phrase lands on the edge of a non-interrogative subordinate clause that requires labelling in order to be included in a larger syntactic structure, this *wh*-phrase has to move on into a position in the higher clause so that XP–YP structure constituting the embedded clause can be labelled by the features of Y (i.e., C)
  → it is not obvious, however, how movement of one of the two terms of an XP–YP structure should facilitate labelling of this structure: movement of XP only ensures that XP will not be pronounced next to YP; the features of the syntactic object remain in place
  → movement leaves copies behind; copies are phonologically empty but otherwise perfectly featurally identical
  → if XP–YP is not labellable when XP stays *in situ*, it should be equally unlabellable after XP has moved on (i.e., XP–YP equals ~~XP~~–YP in all morphosyntactic respects)
  → labelling issues will only ever force successive-cyclic movement if the *wh*-phrase's initial step of movement to the edge of the non-interrogative subordinate CP can be motivated: if the *wh*-phrase could avoid taking this step, no labelling issues would ever arise in the subordinate clause
  → Chomsky's deduction of successive cyclicity concentrates on what happens *after* the intermediate step in a chain of successive-cyclic movements has taken place; but it is precisely the necessity of this intermediate step that is at issue

- there are plenty of reasons to believe that this intermediate step is never taken, and that successive-cyclic A′-movement does not exist at all (see Den Dikken 2010)

→ none of the empirical arguments presented for successive-cyclic movement through SpecCP is incontrovertibly an argument precisely in favour of an intermediate touch-down in SpecCP
  – some of the facts do not require reference to SpecCP at all
  – others do arguably implicate an intermediate SpecCP but do not support onward movement beyond the intermediate SpecCP

→ if indeed genuine movement dependencies are always confined to a single (extended) phase, the PIC can be stated maximally restrictively: phases are wholly opaque to movement dependencies

Q how can even a very simple kind of *wh*-dependency such as the one found in *what did he eat?* be established in one fell swoop, if *v*P is a phase? (but see Den Dikken 2006b)

• Agree-based dependencies involving a phase-external probe and the features of the head of a lower phase are never forbidden: the features of the head of a phase are visible on the phase as a whole, hence always accessible to an outside probe

→ such Agree relationships between a phase-external probe and the features of a lower phase are essential in 'prying open' lower phases: they extend phases upwards: even if *v*P is inherently a phase, Agree between C–T and *v*P (for phi-features) 'opens up' the phase; similarly for Agree(*v*,CP) (see already Rackowski & Richards 2005)

• 'PHASE EXTENSION'

→ Den Dikken (2006a, 2007a,b) argued that head movement of a phase head to a higher, phase-external head extends the phase up to the projection of the landing-site of head movement

→ the movement part of head movement dependencies can be factored out of the equation with an appeal to Agree

→ **'phase extension' is the result of Agree** — every time a higher phase head establishes an Agree relation with a constituent that could potentially be phase in its c-command domain, the phasehood of that lower constituent is lifted and phasehood is extended up to the projection of the probe

→ this confirms and strengthens the importance of Agree in minimalist syntax

(2) *phase extension* (*à la* Agree)
a probe–goal relation between a phase head and a potentially phasal constituent in its c-command domain extends the phasehood of this constituent up to the projection of the probe

• Agree between *v* and CP extends the lower CP phase up to *v*P

→ every time a matrix *v* Agrees with the CP in its complement, extraction from the complement–CP should be able to proceed without a stop-over on the edge of CP

→ if the PIC states that phases are wholly impenetrable, movement from a complement–CP is now entirely contingent on the establishment of an Agree relationship between that CP and the matrix *v*

→ in the absence of Agree, CP is a phase; if phasehood cannot be circumvented via an intermediate touch-down on the edge of the phase, successive-cyclic movement via SpecCP becomes redundant: **whenever successful, movement out of CP proceeds in one fell swoop**

→ similarly for movement out of *v*P: an Agree relation between matrix C–T and *v*P extends the *v*P phase further up to CP

• successive instances of Agree between a higher probe (a phase head, by definition) and a lower potential phase result in successive extensions of phases

→ this is what '**successive cyclicity**' now comes down to: movement itself does not proceed in a succession of small steps, each targeting the edge of a phase; rather, **successful long-distance movement dependencies are contingent on the establishment, successive-cyclically, of Agree relations between higher probes and potentially phasal categories in their c-command domain**

- the Phase Impenetrability Condition can be stated in absolute terms
- 'successive-cyclic movement' is non-existent

(3) *ways of establishing long A′-dependencies* (Den Dikken 2009)
a. fell-swoop movement + successive-cyclic Agree between phases
b. *pro*-binding or resumptive prolepsis
c. *wh*-scope marking (which may be involve partial or full concord)

- Hungarian long A′-dependencies (see Den Dikken 2009 for more details)
→ Hungarian finite subordinate clauses normally trigger the definite (or objective) conjugation on the matrix verb (4a)
→ a reflex of the Agree relation between the matrix *v* and the complement–CP: Agree(*v*,CP_{FIN}) is morphologically reflected by DEF on the matrix verb

(4) a. akar-od, hogy *pro* eljöjjön (Hungarian)
want-2SG.DEF that PV-come.SUBJUNC(3SG)
b. *akar-sz, hogy *pro* eljöjjön
want-2SG.INDEF that PV-come.SUBJUNC(3SG)
'(lit.) you want that (s)he come over, i.e., you want him/her to come over'

- Hungarian exploits all of (3a–c) in the construction of its long A′-dependencies
  → (3a) results in (5a), with definite inflection on the matrix verb, just as in (4a)
  → (3b) leads to (5b), with indefinite agreement upstairs and *plural* verb inflection downstairs (cf. (6)): the proleptic object *hány lányt* 'how many girl' is formally singular, but it shows notional concord with the resumptive *pro* in the lower clause, which controls verb agreement there
  → (3c) has two possible surface exponents:
    – (5d), a 'plain' *wh*-scope marking construction
    – (5c), which in Den Dikken (2009) was treated as a *concordial* scope marking construction: the *wh*-phrase in the lower clause shares *all* of its features with the upstairs scope marker, forcing the donor-*wh* to remain silent at PF

(5) a. (?)?hány lány akar-od, hogy eljöjjön? (Hungarian)
how.many girl(NOM) want-2SG.DEF that PV-come.SUBJUNC(3SG)
b. %hány lány-t akar-sz, hogy eljöjje-nek?
how.many girl-ACC want-2SG.INDEF that PV-come.SUBJUNC-3PL
c. ?hány lány-t akar-sz, hogy eljöjjön?
how.many girl-ACC want-2SG.INDEF that PV-come.SUBJUNC(3SG)
d. mit akar-sz, hogy hány lány jöjjön el?
what-ACC want-2SG.INDEF that how.many girl(NOM) come.SUBJUNC(3SG) PV
'(lit.) how many girls would you want that come, i.e., how many girls would you like to come?'

(6) két fiú jött be a szobába; leültettem őket / *őt (Hungarian)
two boy came PV the room-into seated-1SG.DEF them him
'two boys entered the room; I offered them a seat'

- the various possibilities for forming long A′-dependencies are not all equal
→ 'plain' *wh*-scope marking (5d) and concordial scope marking (5c) are basically good for all speakers, so (3c) is available without reservations or restrictions
→ the resumptive prolepsis strategy in (3b) is subject to robust inter-speaker variation: (5b)

→ *re*: (3a), the fell-swoop long-distance A′-movement scenario: (5a) is generally dispreferred by all speakers of Hungarian
→ but whenever the *wh*-constituent is a measure phrase (7a) or a predicate nominal (7b), (3a) is the *only* strategy for the formation of a long A′-dependency between the matrix and embedded clauses

(7) a. hány kiló-t gondol-od, hogy nyom János? (Hungarian)
how.many kilo-ACC think-2SG.DEF that weigh(3SG.INDEF) János
'how many kilos do you think János weighs?'
b. milyen ember szeretné-d hogy legyen Béla?
what.kind.of man(NOM) would.like-2SG.DEF that be(come).SUBJUNC-3SG Béla
'what kind of man would you like Béla to be(come)?'

- the entire typology of long A′-dependencies in (3) is made available by Universal Grammar, and can be exploited in full within a single language
- of the members of this typology, (3a) is a 'last resort' option, selected only when there are no converging alternatives

2.3 On the definition of 'phase'

- the quintessence of (3a) is the establishment of an Agree relation between *v* and the domain from which extraction takes place
→ Agree brings about 'phase extension'
→ since 'phase extension' is constrained by the establishment of an Agree relationship between a phase and a higher phase head, it happens only in contexts in which there is such an Agree relationship

- phasehood is not an immutable property of particular nodes in a syntactic tree
→ how to define a 'phase'?
→ as in (8) — strongly reminiscent of Chomsky's (1986) definition of 'inherent barrier', with asymmetric Agree now superseding 'L-marking'

(8) *Phase*
a category α is a *phase* iff *(a)* and *(b)*:
(a) α is the largest extended projection of a lexical category
(b) α is not asymmetrically c-commanded by a probe that Agrees with it

2.4 Strong islands revisited

2.4.1 The Adjunct Condition

- verbs typically do not show agreement with adjuncts to their projections
→ if verbs were categorically unable to engage in Agree relations with adjuncts to their projections, the Adjunct Condition would be expected to be absolute
→ but we know that the Adjunct Condition is not, in fact, an absolute prohibition on extraction from all adjuncts: while the sentences in (9a) and (9b) are impossible, (9a′) and (9b′) are fine

(9) a. *what did John {work/paint this picture} [whistling *ec*]?
a′. what did John {arrive/drive Mary crazy} [whistling *ec*]?
b. *which letter did John break a glass [before/after writing *ec*]?
b′. which book did John design his garden [after reading *ec*]?

- Truswell (2011:157): the *Single Event Grouping Condition* — 'an instance of *wh*-movement is legitimate only if the minimal constituent containing the head and the foot of the chain can be construed as describing a single *event grouping*' (original italics)

→ this 'event grouping' can plausibly be syntacticised with an appeal to an Agree relation between *v* and the adjunct: whenever there is 'event grouping', there is such an Agree relation (for an event-structural/aspectual feature present on *v*), and concomitantly, the adjunct is transparent

- the idea that *v* can establish an Agree relation with certain adjuncts may receive support from the fact that there are verb-phrase modifiers that are case-marked in a way that suggests that they may be checking structural case, like arguments — we see this in Hungarian (see Csirmaz 2006)

(10) a. János {két órát / két órán át} újságot olvasott
János two hour-ACC two hour-on across newspaper-ACC read-PST
'János was engaged in newspaper reading for two hours'
b. János {nagyot / hatalmasat / óriásit} tüsszentett
János large-ACC enormous-ACC gigantic-ACC sneeze-PST
'János gave a large/enormous/gigantic sneeze'
c. jót aludtál?
good-ACC sleep-PST-2SG
'did you sleep well?'

→ Csirmaz (2006): such accusative-marked modifiers are structurally case-marked by the verb
→ if correct, this means that *v* can establish a case-Agree relation with the adverbial modifier
→ on the hypothesis that this Agree relation makes the projection of the adverbial modifier transparent, this predicts that extraction from these accusative-marked adverbial modifiers should be grammatical
→ the grammaticality of (11b) and (12b) is consistent with this

(11) a. János szívott nagyobbat nálam
János smoke-PST large-CPR-ACC to-1SG
'János smoked more than me'
b. kinél szívott nagyobbat?
who-to smoke-PST large-CPR-ACC
'he smoked more than who?'

(12) a. János alszik jobbat nálam
János sleeps good-CPR-ACC to-1SG
'János is sleeping better than me'
b. kinél alszik jobbat?
who-to sleeps good-CPR-ACC
'he is sleeping better than who?'

2.4.2 The Subject Condition

- the opacity of subjects of finite clauses is due to the fact that they are not *asymmetrically* c-commanded by the C–T probe (at least, not at the point at which extraction from them is taking place, after movement of the subject to SpecTP)

→ one part of the complex probe C–T (viz., the C portion) asymmetrically c-commands the subject in SpecTP while the other part (viz., T) is itself asymmetrically c-commanded by the subject
→ the subject in SpecTP is a phase by the definition in (8), hence subextraction from it is illegal

- the opacity of subjects of finite clauses is not derivable along these lines from a bottom-up derivation-by-phase model that espouses feature inheritance
- → if T can only probe the subject after C has been merged and C's features have been transferred to T under feature inheritance, when the subject is probed for the first time, C has already been merged
- → this entails that the first available opportunity for *wh*-subextraction from the subject should present itself when the subject is still in its *v*P-internal position (asymmetrically c-commanded by C–T)
- → subextraction from the subject should be legitimate at this point, and subsequent movement of the remnant subject to SpecTP should be unproblematic — *quod non*

- my account of the Subject Condition is straightforwardly available in a **top-down left-to-right** structure building model
- → such a model projects a CP with a *wh*-expression in its specifier, and subsequently constructs a TP in the complement of C
- → for structures in which the C–T probe is endowed with EPP on its phi-features, this TP has a DP in its specifier position
- → the presence of a gap inside the subject leads immediately to an attempt to construct a dependency between the *wh*-phrase in SpecCP and the gap, subject to evaluation based on the principles of locality — including the requirement that a successful *wh*-dependency have no phase boundary separating the filler from the gap
- → with the subject in SpecTP, the phasehood of the subject–DP cannot be extended up to CP: no asymmetric c-command between the C–T probe and the subject in SpecTP
- → the establishment of a *wh*-dependency between the *wh*-expression in SpecCP and the gap inside the subject–DP fails at this point, and a derivation in which the subject–DP occupies SpecTP is rejected[1]

3 Bottom-up or top-down?

Q how is 'phase extension' compatible with a derivation-by-phase model?

- 'phase extension' fits in much more naturally with a **top-down left-to-right** approach to syntactic derivation than with the bottom-up approach advocated by standard minimalism

3.1 The promise of bottom-up derivation by phase

- Chomsky seeks to derive the need for Spell-Out to proceed cyclically from the assumption that uninterpretable features are inherently unvalued, and that valuation immediately makes them indistinguishable from interpretable ones
- → uninterpretable features can only be recognised at the phase level at which they are valued if the computation allows for lookback to the derivational stage at which these features were still unvalued
- → Epstein & Seely (2002): such lookback cannot be limited in a way that is in keeping with the PIC
- → in *what do you think that Bill ate?*, the *wh*-constituent should be spelled out in the specifier position of the matrix CP; but it had its case feature valued in the *v*P of the subordinate clause
- → if the only uninterpretable feature of a *wh*-constituent like *what* is its case feature, we need to reconstruct the derivation all the way down to the *v*P of the embedded clause to find *what*'s case feature in an unvalued state
- → that would mean looking back into the bowels of the embedded CP, which is supposed to have been spelled out *in toto* by the completion of the matrix *v*P

1 Whether the grammar literally abandons further construction of the tree beyond this point depends on how best to analyse parasitic gap constructions such as *who do friends of ec admire ec?*, where the gap inside the subject is saved thanks to the presence of a gap further downstream. I will return to this question in section 3.3, below.

- the PIC does allow for the construction of long *wh*-dependencies across CPs and *v*Ps if phases can be **extended** as a result of an Agree relation between a lower phase and the next-higher phase head
→ but such 'phase extension' would seem to fundamentally undermine the idea that the syntax interfaces with the interpretive components early and frequently, thereby jeopardising the presumed computational efficiency of the derivation-by-phase model
→ 'phase extension' as such is compatible with (13)

(13) 'Ph_1 is interpreted/evaluated at the next relevant phase Ph_2' (Chomsky 2001:13)

→ but this process of pushing upward the decision regarding the phasehood of phrases can in principle repeat itself indefinitely, all the way up to the merger of the very highest probe in the complex syntactic structure

3.2 'Phase extension' and top-down structure building

- a top-down left-to-right structure-building model eliminates this 'waiting game', turning the process on its head and allowing for immediate and definitive decisions to be taken at every step along the way, once we know that an Agree relation is (not) established between a probe and a potential goal

(14) a. mit gondol-*sz* (hogy S) (Hungarian)
what-ACC think-2SG.INDEF that
b. mit gondol-*od* *(hogy S)
what-ACC think-2SG.DEF that

→ (14a) with the *hogy* clause included must involve either *wh*-scope marking or resumptive prolepsis; there is no possibility for (14a) to give rise to a structure in which *mit* binds a trace inside the complement–CP: such a hypothesis is immediately abandoned as soon as it is discovered that the verb has indefinite agreement
→ in (14b), definiteness agreement inflection on the verb tells us that *v* is not in an Agree relation with *mit*, and that, therefore, there must be something else that *v* is Agreeing with — the complement–CP
→ this entails that CP in (14b) is not a phase; and this means that we must postpone Spell-Out of the spine of the structure at least until we run into the next probe and establish what this probe is Agreeing with
→ the fact that *mit* does not Agree with *v* means that it is not a dependent of *v*, and should hence find and bind a gap inside the CP — which is facilitated by the fact that the Agreeing CP is not a phase, hence not opaque

(15) a. ?hány lány-t gondol-sz, hogy elment? (cf. (5b)) (Hungarian)
how.many girl-ACC want-2SG.INDEF that PV-go.PST(3SG)
b. %hány lány-t gondol-sz, hogy elment-ek? (cf. (5c))
how.many girl-ACC want-2SG.INDEF that PV-go.PST-3PL

- in a top-down model, we encounter some constituent α and discover whether it is in an Agree relation with the head of the phase that it is a part of
→ if α is an Agree-goal asymmetrically c-commanded by the entire probe, this constituent is immediately declared a non-phase
→ there really is no 'phase extension' in a top-down model
→ rather, we have something like '*phase pre-emption*': α is declared a phase unless it is an Agree-goal asymmetrically c-commanded by the higher probe

3.3 On selection

- in the top-down model, working with lexical subarrays that are defined as the ingredients of an extended projection of a lexical category at first sight makes it hard to take care of lexical selection
- → in order to account for a sentence like *John likes* {*the top-down model/that the top-down model works well*}, we have to enable the verb *like* to select an object (because it is obligatorily transitive)
- → that object, the DP *the top-down model* or the CP *that the top-down model works well*, is itself the maximal extended projection of a lexical category
- → so if we want phases to be constructed out of single lexical subarrays LA_i and if we want LA_i to contain all and only the ingredients belonging to the extended projection of a lexical category, the D or C of the verb's complement cannot be included in the lexical subarray LA_i for this verb's phase
- → if we want to work with lexical subarrays defined in terms of extended projections of a lexical category in the top-down model, we hence have to make some sort of decision regarding the workings of complement selection

- TWO OPTIONS

(a) complement selection is registered within the lexical head of the subarray, in the form of some ingredient of the lexical head itself: [$_V$ *like* ___]

(b) all thematic dependents of lexical categories are specifiers (which, thanks to the fact that they occupy left-branch positions, can never be mistaken for being part of the extended projection of the lexical category that defines the phase)

re: (a) '___' inside the representation of the lexical head is probably an incorporated element — a lexical element that forms a compound with the selector

→ advantage for complementation of nominal constituents: verbs do not select for determiners but for nouns

re: (b) Larson (1988), Hale & Keyser (1993): direct objects of verbs are sometimes projected as specifiers of inner VP shells

→ stronger hypothesis: *all* thematic dependents of a verbal root are systematically base-generated in specifier positions; the complement-of-V position can only be occupied by athematic material — including secondary predicates, perhaps certain adverbial modifiers, and probably also non-factive clausal complements

- objects are usually taken to be introduced as complements of the lexical categories that select them
- → but Larson (1988) and Hale & Keyser (1993) sometimes introduce objects in specifier positions — specifiers of 'inner VPs' in a VP-shell structure (cf. also Bowers 2010)
- → I believe that a predicational approach to the 'object of' relation is very generally correct, and holds even for simple transitive clauses such as *John bought a book*
- → the structure of a simple transitive clause involves two predication relations: the minimal VP (containing just the verb) is predicated of the object of the clause; and the constituent formed by this predication structure is subsequently predicated of the subject of the clause

- the semi-cleft construction in (17a), found in some of the Romance languages alongside the pseudo-cleft construction illustrated in (17b), serves as my central argument to this effect
  [semi-clefts have been attested in both European and Brazilian Portuguese and also in Caribbean Spanish (Colombian, Dominican, Ecuadorian, Panamanian, Venezuelan), though not in Iberian Spanish; see *i.a.* Wheeler 1982, Toribio 1992, 2002, Bosque 1999, Costa & Duarte 2001, Camacho 2006, Kato 1996, 2010, Mioto 2006a,b, 2008, Kato & Mioto 2012, Méndez Vallejo 2009, forthc.]

→ the syntax of the semi-cleft supports our proposal that the object is introduced into the structure as the subject of the VP predicate, as in (18) (lexified for (17a) as in (21), below), and it also affirms the role played by copulas in the establishment of predication relations and the inversion of a predicate around its subject

(16) o João comprou um livro
the João bought a book

(17) a. o João comprou *foi* um livro
the João bought was a book
b. *o que* o João comprou *foi* um livro
the what the João bought was a book

(18) $[_{vP}$ SUBJECT $[_{v'}\ v\ [_{RP}$ OBJECT $[_{R'}$ RELATOR $[_{VP}$ V (...)]]]]]

• in the simplest cases, the copula spells out the RELATOR (in the sense of Den Dikken 2006) of the predicate and its subject, and everything stays *in situ*

→ in (4b), *na Portela* 'in the Portela' is predicated of the VP headed by *dançou* 'danced' (the dancing happened at the Portela); the RELATOR is spelled out as the copula (see (5))

(19) a. o João dançou na Portela
the João danced in.the Portela
b. o João dançou *foi* na Portela
the João danced was in.the Portela
'João danced at the PORTELA (and not somewhere else)'

(20) $[_{TP}$ *o João*$_i$ $[_{T'}$ T $[_{vP}$ t_i $[_{v'}$ *v* $[_{RP}$ $[_{VP}$ *dançou*] $[_{R'}$ RELATOR={∅/*foi*} $[_{PP}$ *na Portela*]]]]]

• (17a) can be explained if we take a predicational approach to the 'object of' relation

(21) $[_{vP}$ *o João* $[_{v'}$ *v* $[_{RP}$ *um livro* $[_{R'}$ RELATOR $[_{VP}$ *comprou*]]]]]

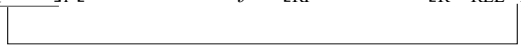
→ in (21), spelling out the RELATOR as *foi* 'was' and leaving the structure intact does not yield a grammatical output: (22)

→ the finite verb *comprou* must amalgamate with *v*, hence must raise up to *v* in the course of the derivation, moving through the RELATOR head; with V raising up to *v*, through the RELATOR, the latter position is occupied by a trace (or silent copy) of V, hence cannot be spelled out as the copula

(22) *o João um livro *foi* comprou
the João a book was bought

• but (21) does feed the derivation of the grammatical semi-cleft in (17a), derived via Predicate Inversion applied to the VP: (23)

(23) $[_{vP}$ *o João* $[_{v'}$ *v* $[_{FP}$ $[_{VP}$ *comprou*]$_i$ [F+RELATOR=*foi* $[_{RP}$ *um livro* $[_{R'}$ t_{REL} t_i]]]]]]



→ whenever the VP inverts with its subject, a copula *must* show up and the object *must* be focused; when no Predicate Inversion takes place, V raises up to the RELATOR in (21) and further on to *v*, which gives rise to the simple VO output in (16)

- (18) base-generates OV order, with VO order derived via raising of the verb to *v*

- for languages in which *v* and V are spelled out by discrete free-standing words, (18) delivers the surface word order of so-called *take* serial verb constructions directly: (24)

(24) a. mo *mú* ìwé *wá* ilé (Yorùbá; Stahlke 1970)
I took book came house
'I brought a book home'
b. $[_{vP}$ *mo* $[_{v'}$ *v=mú* $[_{RP}$ *ìwé* $[_{R'}$ RELATOR=∅ $[_{VP}$ V=*wá* $[_{PP}$ $P_{∅}$ *ilé*]]]]]]

- SUMMARY

(i) all 'argument of' relations involving verbs are structurally represented as predication
(ii) the verbal predicate of the object can invert with the object, giving rise to the emergence of a copular element; this is how semi-clefts with object foci come about
(iii) OV order is base-generated; VO order results from raising of V to *v*
(iv) *take* serial verb constructions are base-generated, with the *take*-verb spelling out *v*

4 Conclusion

- the combination of 'derivation by phase' with Chomsky's Phase Impenetrability Condition presents a double misnomer
- a strengthened version of the PIC does not exempt the head and the edge of the phase from Spell-Out at the phase level
- Agree between a potential phase and the next probe up the tree 'extends' the lower phase up to the projection of the higher probe
- 'phase extension' provides a simple perspective on strong islands
- it fits naturally into a top-down left-to-right structure-building model for syntactic computation (close to the one developed in Chesi 2004, 2007)
- a top-down left-to-right structure-building model using the notion of extended projection as the hallmark of a phase presents a *rapprochement* between mainstream Chomskyan syntactic theory and other generative models (in particular, HPSG and TAG), and is also more readily compatible with theories of on-line sentence processing than the mainstream bottom-to-top, right-to-left approach
- a top-down left-to-right structure-building model using the notion of extended projection as the hallmark of a phase optimally accounts for selection by treating all selected dependents of a predicate head as specifiers, and analysing all selection (including the 'object of') as predication
- the predicational approach to selection emphasises the role of predication in syntax, and provides an explanatory account of semi-clefts, the OV/VO-alternation, and *take*-serial verb constructions

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Selected References

Baker, Mark. 1988. *Incorporation*. Chicago: University of Chicago Press.

Bruening, Benjamin. 2006. Differences between the *wh*-scope-marking and *wh*-copy constructions in Passamaquoddy. *Linguistic Inquiry* 37. 25–49.

Chesi, Cristiano. 2004. *Phases and cartography in linguistic computation: Toward a cognitively motivated computational model of linguistic competence*. Ph.D. dissertation, University of Siena.

Chesi, Cristiano. 2007. Five reasons for building phrase structures top-down from left to right. *Nanzan Linguistics: Special Issue* X:3. 71–105.

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

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by phase. In Michael Kenstowicz (ed.), *Ken Hale. A life in language*. Cambridge, MA: MIT Press. 2–52.

Csirmaz, Anikó. 2006. Accusative case and aspect. In Katalin É. Kiss (ed.), *Event structure and the left periphery*. Dordrecht: Springer. 159–200.

Dayal, Veneeta. 1994. Scope marking as indirect wh-dependency. *Natural Language Semantics* 2. 137–70.

Dékány, Éva. 2011. *A profile of the Hungarian DP. The interaction of lexicalization, agreement and linearization with the functional sequence*. Ph.D. dissertation, University of Tromsø.

Dikken, Marcel den. 2006a. *Relators and linkers. The syntax of predication, predicate inversion, and copulas*. Cambridge, MA: MIT Press.

Dikken, Marcel den. 2006b. A reappraisal of *v*P being phasal — A reply to Legate. Ms., CUNY Graduate Center; available on-line at: http://web.gc.cuny.edu/dept/lingu/dendikken/docs/legate_reply.pdf

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

Dikken, Marcel den. 2007b. Phase extension: A reply. *Theoretical Linguistics* 33. 133–63.

Dikken, Marcel den. 2009. On the nature and distribution of successive cyclicity: Adjunction, resumption, and scope marking as the roads to success in long-distance relation building. Paper presented at the conference on Minimalist Approaches to Syntactic Locality, Budapest; ms., CUNY Graduate Center. Abridged version to appear as 'On the strategories for forming long A′–dependencies: Evidence from Hungarian' in B. Surányi (ed.), [title tbd] (volume of papers from the conference on Minimalist Approaches to Syntactic Locality). Cambridge: Cambridge University Press.

Dikken, Marcel den. 2010. Arguments for successive-cyclic movement through SpecCP: A critical review. *Linguistic Variation Yearbook* 9. 89–126.

Epstein, Samuel & T. Daniel Seely. 2002. Rule application as cycles in a level-free syntax. In Samuel Epstein & T. Daniel Seely (eds), *Derivation and explanation in the minimalist program*. London: Blackwell. 65–89.

Fong, Sandiway. 2005. Computation with probes and goals: A parsing perspective. In Anna-Maria Di Sciullo & R. Delmonte (eds), *UG and external systems*. Amsterdam: John Benjamins. 311–34.

Fox, Danny & David Pesetsky. 2005. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31. 1–45.

Hale, Ken & S. Jay Keyser. 1993. On argument structure and the lexical expression of syntactic relations. In Kenneth Hale & Samuel Jay Keyser (eds), *The view from Building 20*. Cambridge, MA: MIT Press. 53–104.

Horvath, Julia. 2000. On the syntax of 'wh-scope marker' constructions: Some comparative evidence. In Lutz, Uli, Gereon Müller & Arnim von Stechow (eds), *Wh-scope marking*. Amsterdam: John Benjamins.. 271–316.

Larson, Richard. 1988. On the double object construction. *Linguistic Inquiry* 19. 335–91.

Mulder, René & Marcel den Dikken. 1992. Tough parasitic gaps. *Proceedings of NELS 22*. Amherst: GLSA

Rackowski, Andrea & Norvin Richards. 2005. Phase edge and extraction: a Tagalog case study. *Linguistic Inquiry* 36. 565–99.

Ramchand, Gillian. 2008. *Verb meaning and the lexicon: A first phase syntax*. Cambridge: CUP.

Resenes, Mariana & Marcel den Dikken. 2012. Semi-clefts as a window on the syntax of predication, modification, and complementation. Paper presented at the 48th annual meeting of the Chicago Linguistic Society; ms., University of São Paulo & CUNY Graduate Center.

Roberts, Ian. 2010. *Agreement and head movement: Clitics, incorporation, and defective goals*. Cambridge, MA: MIT Press.

Truswell, Robert. 2011. *Events, phrases, and questions*. Oxford: Oxford University Press.

Williams, Edwin. 2003. *Representation theory*. Cambridge, MA: MIT Press.