

Strong Islands and Phases at the Interfaces

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1 Some distinct conceptions of, and motivations for, the “phase” and “cyclic Spell-Out”

- (1) a. ‘Phases are “propositional”: verbal phrases with full argument structure and CP with force indicators, but not TP alone or “weak” verbal configurations lacking external arguments (passive, unaccusative).’ (Chomsky 2001:12)
- b. ‘The choice of phases has independent support: these are reconstruction sites, and they have a degree of phonetic independence.’ (Chomsky 2001:12)
- (2) a. ‘Cyclic Spell-Out... takes place at the strong phase level.’ (Chomsky 2001:12)
- b. ‘The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations.’ (Chomsky 2001:14)

1.1 Successive-cyclic movement

Fox and Pesetsky (2004): phases are sites at which information concerning linear precedence among pairs of terminals is determined. The information must monotonically increase at each phase. Therefore, a prerequisite for further (leftward) movement of a given element within a phase is that any overt material to its left must also move, preserving order among terminals in that phase.

- (3) a. [_{CP1} To whom will he [_{VP1} t say [_{CP2} t that Mary [_{VP2} t gave the book t]]]]?
 - b. to whom < gave < the book
to whom < that < Mary < VP2
to whom < say < CP2
to whom < will < he < VP1 (cf. Fox and Pesetsky 2004:6–7)
- c. ?? [_{CP1} To whom will he [_{VP1} t say [_{CP2} whether Mary [_{VP2} t gave the book t]]]]?
- d. to whom < gave < the book
whether < Mary < **VP2**
to whom < say < CP2
to whom < will < he < VP1

1.2 Strong islands

Uriagereka (1999): Spell-Out triggered by sisterhood of two phrases (see also Nunes and Uriagereka 2000, Fukui and Takano 1998, Sabel 2002, Johnson 2002). ‘When Spell-out applies to [a phrasal constituent], the computational system no longer has access to its constituents and, therefore, no element can be extracted out of it.’ (Nunes and Uriagereka 2000:5)

- (4) a. * [_{CP} [Which politician] did [_{IP} [pictures of t] upset the voters]]
- b. * [_{CP} [Which paper] did [_{IP} you read *Don Quixote* [_{PP} before filing t]]] (Nunes and Uriagereka 2000:2)

1.3 A ≠ B

- (5) a. Definitions of “phases” (or, alternatively, cyclic Spell-Out) which are centred on successive-cyclic movement and deriving weak islands define C, *v* (Fox 1999), maybe D (Chomsky 2001), maybe aspectual/auxiliary heads (Butler 2004) as phase heads.
- b. Definitions of “cyclic Spell-Out” aiming to explain strong island effects define any non-projecting phrasal sister of a phrasal constituent (i.e. subjects, adjuncts, and moved XPs, among others) as a phase.
- (6) The two are not extensionally equivalent:
 - a. CP is standardly either the root node or the complement of V; *v*P is standardly the complement of T/Asp/Aux. In the usual case, then, CP and *v*P are “phases” from the point of view of successive-cyclic movement/reconstruction, but not from the point of view of strong islands.
 - b. Any adjunct headed by a preposition, or prepositional complementiser, is a strong island, but is not generally of the correct category to fit the successive-cyclic-movement-based definition of *phase*.
- (7) a. In that case, we may look for evidence of a dissociation between whatever derives these two conditions.
- b. What, if anything, do the two factors have in common?

2 Weak and Strong Islands

2.1 Successive-cyclic movement and weak islands

A’ movement is generally successive-cyclic:

- (8) Hayi o’son -ña si Carmen [t pära u -kuentusi t]?
Who? WH[OBL],bored -AGR Carmen FUT WH[OBJ].AGR -speak.to
‘Who is Carmen bored with talking to?’ (Chung 1994:18)

But long *Wh*-movement of (referential) arguments is possible:

- (9) a. Hafa na patti gi atumobit malago' -mu [t u -mafa' maolik t]?
 What? L part LOC car WH[OBL].WANT -AGR WH[NOM].AGR -be.fixed
 'Which part in the car do you want to be fixed?'
 b. Hafa na patti gi atumobit malägu' hao [u -mafa' maolik t]?
 What? L part LOC car AGR.want you WH[NOM].AGR -be.fixed
 'Which part in the car do you want to be fixed?' (Chung 1994:18)

Weak islands (roughly) are created by the presence of one of a set of A' operators: *Wh*, *Neg*, etc. As weak islands are islands for A'-movement, they are handled naturally by Relativized Minimality (Rizzi 1990):

- (10) X α -governs Y only if there is no Z such that
 a. Z is a typical potential α -governor for Y, and
 b. Z c-commands Y and does not c-command X.

Extraction from a Weak Island is possible, but with a distinct interpretation (Pesetsky 1987, Starke 2001).

- (11) a. #What do you wonder whether Belgamore discovered?

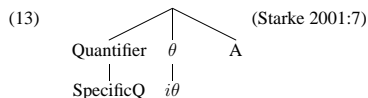
Belgamore and Belfedore lost their dog, and have been unsuccessfully looking for it for 3 days. On the fourth day, Belgamore decides to go out again and continue looking for any clue. Belfedore, tired and despaired, gives up and stays at home. In the evening, Belgamore comes back very excited and...

Joey interrupts you as above but now says: 'I wonder what Belga found! Could it be...?' and stops in the middle of the sentence, looking at you starry-eyed. Again, you stop reading and ask:

- b. So? what do you wonder whether Belgamore discovered? (Starke 2001:11–13)

- (12) '[Strong phase] Ph_1 is interpreted/evaluated at [the next highest strong phase] ph_2 '. (Chomsky 2001:14)

Branches on the feature tree of Starke (2001) have two levels:



Starke's feature geometry leads us to expect that something with a [SpecificQ] feature can extract over arbitrarily many [Quantifier] features:

- (14) So? What do you wonder whether I wonder whether Belfedore wonders whether Belgamore discovered?

If weak islands and extraction from them are plausibly reducible to Relativised Minimality/MLC (Starke 2001), they are not necessarily derived by cyclic Spell-Out.

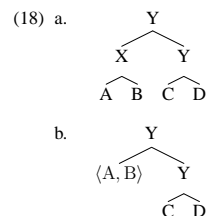
- (15) Phase heads may have edge positions, but do not necessarily trigger cyclic Spell-Out.

2.2 Strong islands

Strong islands are determined by the structural configuration of two constituents.

- (16) A *strong island* is the non-projecting phrasal sister of a phrasal constituent.

- (17) a. $\{Y, \{X, \{A, B\}\}\{Y, \{C, D\}\}\}$
 b. $\{Y, \{\{A, B\}, \{Y, \{C, D\}\}\}\}$



Strong islands are generally taken to be more or less absolute (*cf.* Nunes and Uriagereka 2000: extraction from strong islands is only possible through sideways movement in parasitic gap constructions).

- (19) a. 'An adjunct is a phrase whose sister is also a phrase and whose mother is not its projection'. (Johnson 2002:1)
 b. 'If XP is in an adjunct position, nothing may move out of it'. (Johnson 2002:1)
 (20) a. *Who did [a friend of t] visit you yesterday?
 b. *What did John talk to Mary [while most people were watching t]?
 c. *Who did you say [which picture of t] Mary bought? (Johnson 2002:2)

BUT:

Extraction of an Accusative-marked complement from within English adjuncts:

- (21) a. What did John arrive [whistling t]? (Borgonovo and Neeleman 2000:200)
 b. Who did John build his house [for t]?
 c. ?What did John fall asleep [while most people were watching t]?

AND:

Extraction of a possessor from within a subject DP:

- (22) a. **Chamorro** (Chung 1991:110):
 Hayi ti man-mäguf famagon-ña t
 Who? not Infl(p)-happy children-Agr(3s)
 Whose children are unhappy?
- b. **Hungarian** (Kriszta Szendrői, p.c.):
 Kinek gondolod hogy jól néz ki a kalapja
 Who-dat think-2sg that well looks prt the hat-agr
 Whose hat do you think looks good?
- c. **Russian** (Aglaya Snetkov, p.c.):
 Chiia ty dumaesh sobbaka pokusala Mariiu?
 Who(f) you think dog(f) bit(f) Mary
 Whose dog do you think bit Mary?

Given these two cases, strong islands do not *absolutely* block extraction, even if they severely restrict it.

- (23) a. [_{CP} Who did John build his house [_{PP} t' for t]]
 b. [_{CP} Who did John build his house [_{PP} for t]]

No clear evidence for an edge position. And Abels (2003:96–100) bars movement from complement of X to [Spec,X], as no new structural relation can be established in this way. In that case, edge positions in these PPs, at least, are also conceptually undesirable. So:

- (24) Strong islands trigger cyclic Spell-Out, but do not necessarily have an edge position.

So the *phase heads* C, v, D (etc.) determine landing sites, while strong islands impose conditions on null elements within them, and the two are not related.

2.2.1 Strong islands and PF

Assume that strong islands are related to the need to establish order among two phrasal sisters: cf. Uriagereka (1999) reinterpreting the LCA, or Johnson (2002)'s *numerphology* principle, whereby non-projecting phrasal sisters of phrases get *renumerated* as elements with 'their syntax to phonology mapping values fixed' (Johnson 2002:17). This suggests the following:

- (25) Strong islands are constituents which have had their hierarchical structure mapped to linear order, in accordance with the syntax→PF mapping procedure.
- (26) A terminal in a strong island must be *recoverable* at PF.
- (27) An item is *recoverable at PF* if:
- It has phonological content; or
 - It is licensed by a relation determined in the syntax→PF mapping.

Two subcases of (27b) to be discussed here are adjacency and determination of inflectional morphology (both also used to account for interactions between derivational cascades /cyclic Spell-Out domains in Uriagereka 1999).

2.2.2 English Accusative Case is licensed under adjacency.

(Almost) nothing can intervene between the verb and accusative object:

- (28) a. John merrily sang Christmas carols.
 b. * John sang merrily Christmas carols.

Adjacency can only be defined at PF, as Chomsky (1995) assumes that syntactic structures are hierarchical, but unordered, and so it is only during the syntax→PF mapping that linear order, and so linear adjacency, becomes a meaningful notion.

⇒ Extraction of English accusative-marked DPs from adjuncts (21).

2.2.3 Extraction accompanied by overt agreement

All the cases of possessor extraction from subjects in (22) are accompanied by inflection on the possessum. See Bobaljik (2005) for the claim that morphological inflection is determined in the syntax→PF mapping, although Uriagereka (1999) and Chomsky (2001) already seem to be moving the same way:

- (29) 'Structural Case is not a feature of the probes (T, v), but it is assigned a value under agreement, then removed by Spell-Out from the narrow syntax'. (Chomsky 2001:6).

⇒ Possessor extraction with overt agreement in Chamorro, Hungarian and Russian (22).

2.3 Extensions

The double dissociation between factors determining successive-cyclic movement and factors determining strong islands suggests that we should be able to have constituents with both, and constituents with neither, factors:

2.3.1 Constituents with neither

Any complement XP whose head is not a phase head should have neither property. E.g. VP: successive-cyclic movement does not move through VP (by assumption), and extraction from VP is generally possible.

2.3.2 Constituents with both: subjects?

Subjects are strong islands. And DP is often assumed to be associated with an edge position. If so, extraction from a DP subject will be restricted to those elements which can occupy that edge position.

The edge position of DP, in certain languages (English, Hungarian), is a "possessor" position, so extraction from DP will be restricted to possessors (this is impossible in English as further movement from [Spec,D] would strand the possessive clitic D⁰ '-s (Chomsky 1995)).

So extraction from a subject DP (or a DP in an adjunct) requires: (i) movement through a "possessor" edge position, (ii) PF-recoverability (≈ overt Spec-head agreement in this case), (iii) a non-clitic D⁰. As in (22) above.

3 Conclusion

- (30) Phases (in the sense of Chomsky 2001) \neq domains of application of cyclic Spell-Out (in the sense of Nunes and Uriagereka 2000).
- (31) Strong islands are not absolute barriers to movement, but the distribution of traces within strong islands is highly restricted by PF-related factors.
- (32) Weak islands are plausibly reducible to Relativised Minimality, and so are not related to cyclic Spell-Out.
- (33) Strong islands do not necessarily have an edge position; weak islands do not necessarily trigger cyclic Spell-Out.
- (34) To a first degree of approximation:

		Cyclic Spell-Out	
		+	-
Edge	+	Subjects	Objects
Position	-	Adjuncts	Other

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