

Some notes on cyclic linearization *

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1. Cyclic linearization

Fox and Pesetsky (this issue, henceforth F&P) argue that the “edge effects” derived by stipulation within standard phase theory can be explained in their version, where a phase crucially triggers linearization of its constituents. Later phases may add ordering statements to an *ordering table* in a monotonic fashion, but no information can be erased or altered once it has entered the ordering table. Suppose a phase *A* contains the constituents *x, y, z*, and that they are linearized in that order. Then movement within the next phase can’t result in reordering of *x, y, z*. So *x*, being the leftmost element, can move leftwards freely within the next phase, while *y* can only move leftwards provided that *x* moves even further leftwards. This is, in essence their explanation of Holmberg’s Generalization (Holmberg, 1986, 1999) (HG). To see this, imagine that *y* in our setup is an object trying to shift, and that *x* is the verb. They also show that, if *y* moves to the left edge of *A* prior to its linearization, this may end up blocking leftwards movement of *x* in what they term the ‘inverse Holmberg’s Generalization’, and they have empirical support for the existence of that pattern. This gives a version of phase theory where phases are not entirely opaque to outside syntactic probing. Their proposal is highly innovative and elegant, and it succeeds in deriving an impressive range of facts. The following paragraphs present some relatively minor empirical problems with their treatment of HG which unfortunately seem to conspire to uncover a major one.

2. Do phases explain HG?

As F&P discuss, they sometimes need to resort to phase-internal movement to establish the required order prior to linearization, so that later movements won’t create ordering contradictions. In other cases, such as Scandinavian Object Shift (OS), they need such movement to the left edge *not* to occur. As they put it, “[o]ur proposals say nothing in themselves, however, about the circumstances under which movement to these left-edge positions is allowed or prohibited.” Constraints on phase-internal movement, it would seem, then, can’t themselves be reduced to phases. I will argue that this raises non-trivial problems for F&P’s explanation of HG. OS-related phenomena will require some rather complex phase-internal operations, which, unless appropriately constrained, would overgenerate.¹ A rather trivial example (which won’t be

*This squib is a comment on Fox and Pesetsky’s paper, both to appear in a special issue of *Theoretical Linguistics* on Object Shift edited by Katalin É. Kiss.

¹See Nilsen (2003b) for an attempt to formulate such constraints with respect to HG which do not depend

discussed further here) is that of object topicalization. Such topicalization would, as F&P explain, have to proceed cyclically, through the edge of VP/vP, so that O precedes V at the VP/vP phase. But then what prevents OS from doing the same? That would produce the ordering statement $O > V$ in the first phase, and (wrongly) allow OS across the verb. Another example of the same sort is quantifier movement (QM). Since QM in Norwegian obeys HG, while in the rest of Scandinavian, it obeys the inverse HG, it seems to follow that, for F&P, Norwegian QM can't proceed cyclically, while in, say, Icelandic, it must. Icelandic QM, proceeding cyclically, will first move to the left edge of the first phase, thus yielding $Q > V$. This will then block V-to-C, unless Q moves further to spec-CP. Hence Icelandic QM can only take place when V-to-C does not. Norwegian QM, on the other hand, patterns with regular OS, i.e. it can only take place when V-to-C *does* take place. Hence Norwegian QM (and OS more generally) can't move through the left edge of the first phase, while Icelandic QM must do so. What governs this variation in phase-internal syntax? Do we find similar variation with respect to OS of weak pronouns?

These complications are not devastating for F&P. They merely highlight the fact that we need to be able to distinguish between the phase internal correlate of topicalization, which is obligatory, and that of OS, which is impossible. Similar remarks hold of the difference between Icelandic and Norwegian QM. As we shall see, however, there are less trivial cases of phase internal movement forced upon us by considering OS and HG by themselves. The problem seems to be that the phases can limit the orders in the right way only when presented with the right order to begin with.

2.1 S-V inversion and S-O blocking

In order to handle subject-verb inversion in Mainland Scandinavian (MSc) V2 contexts, Fox and Pesetsky (F&P) suggest that the subject is outside of the linearization domain (phase) responsible for HG. Hence, subjects are allowed to invert with V in the higher phase because they do not occur in the lower phase, so there is no ordering statement concerning the two from that phase creating potential conflict with the ordering statement given by the higher phase. This proposal runs into problems once we realize that OS can't cross subjects, just as it can't cross verbs and indirect objects. F&P allude to long OS in Swedish (Fox, p.c.), where OS *does* cross a subject, and conclude on that basis that subjects quite generally don't block OS. But, as is well known, long OS is limited to cases where the object bears visible case (pronouns that are syncretic along the nominative-objective dimension can't undergo long OS), and, additionally, to a small group of main verbs (the cognate of the main verb *like* allows it, while those of a.o. *kill*, *buy*, *eat*, . . . don't). Furthermore, long OS is strictly ungrammatical in Norwegian and Danish, so it seems that it would be problematic to treat the Swedish exceptions as the general case. Finally, even in Swedish, shifting of both IO and DO around S is always impossible, further supporting the view that S should be internal to the relevant phase, and that long OS should be handled by some extra mechanism which is licensed in but a few cases. In fact, one can find exceptions to virtually every

on phases (but are not a priori incompatible with them). Here and throughout, I use the notion of a 'phase' in F&P's sense. Hence, I am not claiming that there couldn't be an alternative conception of 'phases' which would avoid the problems to be discussed. Such an alternative remains to be formulated, however.

part of HG in different dialects, some to be discussed below, but concluding on that basis that nothing at all blocks OS seems a bit rash.

The problem with S-V inversion, then, is that V and O must be in the same phase (V blocks O); S and O must be in the same phase, too (S blocks O). By transitivity of identity, we have that S and V must be in the same phase, but then their account of S-V inversion can't be right. Müller (2004); Nilsen (2002, 2003b) argue independently that S-V inversion must take place low in V2 languages. For example, Norwegian has obligatory S-V inversion even when the verb follows sentential adverbs (v2 violations). This is triggered by the presence of focus particles associating with the verb (see Nilsen (2003b) for discussion).²

(1) Norwegian

- a. Meg vanligvis bare svarte ikke **Jens**.
me usually just answered not J
"Jens usually just didn't answer me."
- b. Meg vanligvis bare svarte **Jens** ikke.
- c. *Meg vanligvis bare **Jens** svarte ikke.
- d. *Meg vanligvis **Jens** bare svarte ikke.
- e. *Meg **Jens** vanligvis bare svarte ikke.

Low S-V inversion could be adopted by F&P. If inversion takes place within a low phase, all of V, O and S can be in that phase. The pattern in (1) would then follow on F&P's account because S-V inversion has taken place in the first phase, yielding the ordering statement $V > S$, so the subject would have to continue to follow V in later phases. Thus, the pattern in (1) can be taken as independent evidence that S is in the first phase and that S-V inversion must have a vP/VP-internal correlate. Scandinavian would then be closer to Korean, as F&P discuss it in their section 5. The difference with Korean, which gives rise to a sort of inverse HG effect with S and O (scrambling of O across S blocks later scrambling of S across O), would come from the assumption F&P make that Scandinavian OS is not cyclic, i.e. it doesn't proceed via the edge of vP/VP, while Korean scrambling is. They could then try to handle the Swedish exceptions (long OS) by explaining why, in precisely the relevant cases, S is outside of the low phase or, alternatively, why O is allowed to shift phase-internally to the left of S. This would amount to adopting a somewhat different clause structure than what F&P do, however, and it would involve reworking their proposal to capture lack of inversion with main verbs in English.³ Moreover, working out the details of this would necessarily involve explaining the (phase-internal) ordering possibilities of S/V and S/O, thus taking care of that part of HG without resorting to phases.

2.2 IO-DO reordering and V-IO blocking

As noted in Taraldsen (2000), the order $DO > IO$ is impossible in Norwegian, unless IO and DO are weak pronouns followed by an adverb.

²Unless there is specific indication to the contrary, all examples are Norwegian.

³In the handout version of their paper, they suggest that English subjects (but not Scandinavian ones) are within the lower phase, thus disallowing S-mainV inversion in English. The discussion in the text indicates that this picture is too simple.

- (2) a. Hvorfor fortalte du meg det?
 why told you me it
 “Why did you tell me it?”
 b. Hvorfor fortalte du det meg *(ikke)?
 why told you it me *(not)

Any adverb will do. If the restriction to IO>DO follows from the low phase these arguments start out from, it becomes mysterious that adverbs can have this effect. I see no easy way out for F&P here. If the phase is extended to include the adverbs, we lose the account for ordinary OS, which isn’t sensitive to adverbs. If we leave the adverb outside the relevant phase, it should have no effect on the ordering possibilities within it. Suppose, on the other hand, that we consider different positions of IO with respect to the first phase. If IO is outside of it (comparable to F&P’s problematic treatment of subjects and long OS), we run into a contradiction: V (and S) blocks IO-shift, hence they are in the same phase as IO. V (and S) also blocks O-shift, so these must also be in the same phase as O, and, by transitivity, IO and DO are in the same phase, which contradicts our assumption that they are not. Thus this seems to be a particularly nasty problem for the empirical use to which F&P put their theory. Whatever their solution would be – perhaps a VP/vP internal DO-position that needs licensing from a VP/vP external adverb – it is likely to involve syntactic operations internal to the first phase, allowing DO an “escape hatch” in just the relevant cases. Explicating it would seem to suffice to explain the part of HG which restricts the ordering of IO and DO, again independently of phases. See Taraldsen (2000) for an account of this pattern in terms of remnant movement, and Anagnostopoulou (2002, 2004) for discussion of it in a somewhat different context.

2.3 Remnant VP-topicalization

F&P suggest that cases like (3a), where a VP lacking a pronoun has been topicalized conform to their system, because the pronoun must be extracted from the right edge of the VP prior to VP-fronting. Thus, (3b) is bad because the order inside the VP prior to extraction of the pronoun and fronting of the participle has the pronoun preceding the embedded verb (‘give talk’), see (3c), while the surface order of (3b) has reversed this order.⁴

- (3) Swedish (Holmberg, 1999)
 a. [_{VP} Kysst t_i] har jag henne_i inte t_{VP}.
 kissed have I her not
 “I haven’t kissed her”
 b. * [_{VP} Hört t_i hålla föredrag] har jag henne_i inte t_{VP}.
 heard give talk have I her never
 c. Jag har inte hört henne hålla föredrag.
 I have not heard her give talk

⁴To my ears, the Norwegian (i) where the infinitival verb is unergative is much better than (3b). This recalls the fact noted by Kayne and Pollock (2001), that French ‘stylistic inversion’ is subject to the constraint that the fronted IP (in their analysis) can’t contain an overt argument.

(i) [Hørt t_i synge]_j har jeg henne_i aldri t_j.
 [heard sing] have I her never

To see how this works, consider the VP of (3a) prior to OS:

[_{VP} kissed her]

Linearizing this, we get the singleton linearization set {⟨kissed,her⟩}. We now merge the negation and shift the object, yielding:

[_{IP} her_i not [_{VP} kissed t_i]]

Finally, the auxiliary *have* moves to C (for simplicity, we disregard its base position as well as the introduction of the subject), and the VP topicalizes:

[_{CP} [_{VP} kissed t_i] C+have [_{IP} I her_i not t_{VP}]]

When the CP is linearized, we still have that V precedes O, so no ordering contradiction ensues. In (3b), on the other hand, there is VP-internal material *following* the pronoun in the first phase. In particular the ECM predicate *give talk* follows it, so linearization of the first phase gives (simplifying somewhat): {⟨heard,her⟩, ⟨her,give-talk⟩}. But after linearizing the CP in this case, we have that *give talk* linearly *precedes* the pronoun, thus contradicting the information from the first phase. In other words, remnant VP-topicalization with OS is predicted to occur only when the shifted object would have been at the *right edge* of the VP if it hadn't shifted.

Examples like the following show that things aren't this simple.⁵

(4) Norwegian

- a. % [_{VP} Lagt t_i på bordet] har jeg dem_i aldri.
put on the-table have I them never
- b. Jeg har aldri lagt dem på bordet.
I have never put them on the-table
- c. *Jeg har aldri lagt på bordet dem.
I have never put on the table them

Here we have a VP-internal PP which should create the same kind of ordering contradiction as the ECM-clause in (3b). But the sentence is perfectly grammatical, apparently showing that the "right edge" isn't the relevant notion. F&P might try to handle this by saying that the weak pronoun must undergo heavy NP shift internal to the low phase prior to linearization (this was suggested to me by Norvin Richards, p.c.). That would get the pronoun to the right-edge of the first phase as required. One might find it slightly odd to have *weak* pronouns undergo HNPS, but I suggest we set such qualms aside for the sake of the argument. With HNPS, (4a) would be derived as follows. The VP starts out as:

[_{VP} put it on the table]

and after HNPS of the weak pronoun, we have:

[_{VP1} [_{VP2} put t_i on the table] it_i]

⁵Some speakers don't allow remnant VP-topicalization at all, hence the % in front of the relevant examples.

Linearizing this, we have that VP2, hence the PP contained in it, precedes the pronoun. We can now proceed to topicalize VP2 and shift the pronoun leftwards, yielding (4a) without any ordering contradiction. This would actually make sense of the contrast between (3b) and (4a), if ECM subjects can't undergo HNPS to begin with (but see footnote 4). It would also be supported by the fact that such remnant VP topics sometimes give rise to obligatory parasitic gaps: HNPS also gives rise to obligatory parasitic gaps as seen in (5c), although less strongly so than remnant VPs; "Ordinary" OS doesn't license parasitic gaps in MSc, as illustrated in (5d), further supporting the idea that something is going on in the remnant cases which isn't going on in the "normal" cases.

- (5) a. % [Kysset t_i uten å danse med pg først] har jeg henne_i aldri t_{VP} .
 kissed without to dance with first have I her never
 b. * [Kysset t_i uten å danse med henne først] har jeg henne_i aldri t_{VP} .
 kissed without to dance with her first have I her never
 c. Jeg kysset t_i uten å danse med (??henne) først [den jenta du
 I kissed without to dance with (??her) first [the girl you
 snakket om]_i
 talked about]
 d. Jeg kysset henne_i aldri t_i uten å danse med *(henne) først.
 I kissed her never without to dance with *(her) first

So, despite its initial implausibility, Richards' HNPS idea has something to speak for it. But given the ungrammaticality of (4c), such HNPS of weak pronouns must be restricted to cases where the remnant VP subsequently topicalizes. Unless this restriction somehow follows from the spell-out cycles this looks like sneaking a notion of HG back into the theory, which is what F&P set out to derive: HNPS of a weak pronoun requires another movement, namely VP-topicalization, and such conditioning of one rule application on the application of another is precisely what HG is about. We may dub this version of HG the *backwards* HG. It's hard to see how the backwards HG *could* be made to follow from F&P's phases, because the relevant operations must take place within the first phase in order for the solution to work.⁶

Backwards HG is also operative with datives. They generally can't undergo HNPS, so, if the account under consideration is on the right track, the following sentence should be ungrammatical, contrary to fact.⁷

- (6) % [_{VP} Gitt t_i t_j tilbake] har han henne_i den_j nok ikke t_{VP} .
 given back has he her it probably not

⁶F&P would seem to expect a backwards HG when (non-cyclic) rightwards movement targets a phase-external position, as well as an *inverse backwards* HG, i.e. cases where rightward movement of y blocks rightwards movement of z . I have no idea whether these expectations are substantiated.

⁷Another fact which would look rather mysterious on an HNPS account is that full (heavy) DPs can't give rise to such remnant VPs. F&P, citing Holmberg do give some cases of stranded epithets which are reasonably OK, but regular DPs, including indefinites, are ungrammatical. This made me propose that the relevant operation is more like clitic climbing of the Romance sort (Nilsen, 2003a). That idea isn't easy to fit in with F&P's notion of phases, however.

(i) * Lagt på bordet har jeg (ikke) den boka (jeg kjøpte igår) (ikke)
 put on-the-table have I (not) that book (I bought yesterday) (not)

Irrespective of the latter point, if HNPS is the relevant mechanism, the case of HPNS of a weak dative pronoun would require later HPNS of the direct object in addition to later VP-topicalization. Furthermore, the PP ('on the table') and the adjunct-like expression 'for free' does not induce such "blocking behavior" on HNPS of weak pronouns, further strengthening the similarity with the usual "forward" HG, which quite generally disregards adjuncts.

- (7) a. * [_{VP} Gitt t_i den gratis] har jeg henne_i ikke t_{VP}.
 given it for.free have I her not
 b. % [_{VP} Gitt henne t_i gratis] har jeg den_i ikke t_{VP}.
 given her for.free have I it not

To reiterate, it seems that F&P are going to need extensive movement to take place within their phases. These movements, in turn, will need to be constrained to apply in the right cases. These constraints (whatever their right formulation turns out to be) do not seem reducible to F&P-style phases, since the movements are internal to the relevant phases. Suppose we had such an account that told us when an (indirect) object can move phase-internally. In F&P's setup, that account would inevitably have to explain when VP-internal material can reorder and when it can't, hence it would be a phase-independent account of HG, including its empirical wrinkles. But if so, while the system of phases may be *consistent* with the facts of HG, it can't really be said to *derive* it, nor can HG be said to provide empirical support for such phases.

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