

Some thoughts on phase extension to a single interface

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Abstract:

In this short note, I point out some potential problems of the way den Dikken (this volume) understands the mechanism and timing of spell-out. I then test the consequences of his understanding, but do not conclude anything on the basis of the presented English data. I then test the prediction on a case of NP internal predication in Slovenian and explain the problems they pose for the theory presented in den Dikken (this volume).

1. Some concerns regarding the mechanism of LF-phase extension*

Following the three premises given at the very beginning of his paper, den Dikken (this volume) develops a theory of phases that has a number of interesting properties, some very clear predictions, and substantial coverage. The three premises are the *Phase Impenetrability Condition* (Only the phase head H and the specifier of HP are accessible to operations (move and agree) outside HP.), *Inherent Phase* description (a predication is an inherent phase), and *Phase Extension* condition (if a phase head H moves up to head B, B inherits the phase properties of the phase H or in other words, phase H is extended to the head B). Thus a phase is every combination of a predicate and a subject both in small clauses and *v*Ps. Contrary to the standard understanding of phases, a CP is not an inherent phase according to den Dikken since it does not involve predication. It can only become a phase by extension, just like any other projection to which the phase head moves.

In the discussion of the difference between (1a-b) (his (28a-b)), den Dikken suggests that the universal quantifier cannot scope over the subject in (1b), because of the covert head movement of the head of the small clause, which results in an LF phase trapping of the subject of this small clause. After movement of the phase head, which is the head of the small clause ‘every congressman a fool’, to V and consequent phase extension, subject of the small clause, ‘every congressman’, is no longer located in the edge of the phase but becomes part of the complement of the (new) phase head. And since adjunction to VP is not allowed, the quantifier cannot raise out of the (extended) VP phase.

- (1) a. someone considers every congressman to be a fool $\exists > / < \forall$
b. someone considers every congressman a fool $\exists > / * < \forall$

According to den Dikken, covert head movement extends only the LF but not the PF phase, which means that the derivation results in a Non-simultaneous phase (cf. Marušič 2005), a situation where a portion of syntactic structure gets spelled-out to one but not to the other interface. Here, I would like to point out certain difficulties with the way he derives this result.

Den Dikken says that LF-only phases are created as a result of covert head movement of the phase head, since covert head movement does not extend the phase completely, but only its LF side. This makes sense, but den Dikken does not explain what covert head movement is or how it is achieved. My concern is the following. If there are phases, this means there is cyclic transfer from the syntax to both interfaces (or cyclic spell-out to both interfaces). For cyclic transfer, it is only natural to say that it happens simultaneously to both

* I would like to thank John Bailyn, Carlos de Cuba, Marcel den Dikken, Dan Finer, Richard Larson, Jon MacDonald, and Rok Žaucer for help with data and comments. Mistakes remain mine.

interfaces. When exactly the structure gets transferred is not so important at the present moment (either right away, thus resulting in Phase Impenetrability Condition, or when next higher phase is reached), but if spell-out is cyclic to both interfaces, then we cannot have covert movement from a spelled-out phase to some higher point in the structure that has not been spelled-out yet. If, on the other hand, at the point of spell-out, structure is only transferred to the PF component, then covert movement is obviously possible and it could indeed happen during the derivation in the post-spell-out LF component, on the way to the final LF structure (along the lines of Nissenbaum 2000). But in this case there is no need for cyclic spell-out to LF (Nissenbaum 2000 assumes spell-out only happens to the PF interface). So in order to allow post-spell-out covert movement, we need to say that LF spell-out is somehow delayed with respect to PF spell-out. This would mean that none of the phases discussed by den Dikken should be considered true PF and LF phases. Covert movement should be still possible out of them.

Now, this is something that we should in principle be able to test. We could test all the phases that were tested for overt extraction also for Quantifier Raising (QR)—given that QR is the prototypical covert movement. If QR is possible where overt extraction is not then the transfer to LF is somehow delayed, but if QR from the subject position of an inverted predicate is just as bad as overt extraction of the same subject, then whenever subject gets trapped in the complement of an extended phase, it gets trapped because it is sent to both interfaces simultaneously. If this is the case, covert head movement should not be allowed.

Den Dikken gives the examples in (2) (his (14b), (15b), (16b), and (17b)) to show that overt *wh*-extraction is not available out of the subject position of a small clause which underwent predicate inversion, (2a-c). In all three cases the raising of the small clause head results in phase extension and consequent trapping of the small-clause subject in the complement of the (new) phase head.

- (2) a. * which book do you think that the #1 best-seller in the country is *t*?
 b. * which book do you think that on the president's desk lay *t*?
 c. * which paper of yours do you think that you sent your students out *t*?
 d. which paper of yours do you think that you sent your students *t*?

As shown in (3), sentences comparable to (2) do not allow QR out of the subject position of the small clause. (3a) is unambiguous, that is, it only allows a narrow scope interpretation of the universal quantifier – there is only one table and all the books lay on it.¹ Similarly (3b) does not have an interpretation where the universal quantifier would scope over the indefinite ‘a professor’.

- (3) a. on a table lay every book by den Dikken $\exists > / * < \forall$
 b. a professor sent my students out every book by den Dikken $\exists > / * < \forall$

These results need some more thought. While the lack of ambiguity of (3a,b) is not what we said den Dikken's theory predicts, at least (3b) should not really matter, since (4), which allows *wh*-extraction, as shown in (2d), and should therefore also allow QR, is also not ambiguous—it does not have the interpretation 'I think that for every paper by den Dikken there's a professor that sent it to my students.' Therefore whatever prevents QR in (4) probably prevents it also in (3b).

- (4) a professor sent my students every paper by den Dikken $\exists > / * < \forall$

¹ Judgments for (3a) were not unanimous. Excluding a speaker with categorically different judgments, three out of four speakers found the sentences unambiguous.

Testing QR out of the subject position of a simple predicate sentence with predicate inversion is a bit more complicated. (5) is ok for some speakers and it is not clear whether the ungrammaticality for those not liking it, is somehow related to a potential Weak Cross Over violation or if it is related to the problems discussed so far.

(5) (*)his_i best selling novel is every author_i's first book

Similar examples to (5) can be constructed also for the other two cases of predicate inversion and not surprisingly, judgments are again not consistent. While (6a) is in general considered (marginally) acceptable, (6b) and (6c) are both considered ungrammatical. QR is thus generally not available out of the subject of an inverted predicate, yet it is still available in some cases.

- (6) a. ?on his_i table lays every author_i's first book
b. * I think that his_i own favorite is every author_i's first book
c. * some girl sent students in his_i class out every linguist_i's book

Since these tests are not spotless and results not conclusive, I cannot draw any conclusions based on them, which is why we will turn to predication inside nominal phrases for further tests and possibly a more conclusive result in the next section.

But hypothetically, if we accept that where overt extraction is blocked we also find blocking of QR, we can only conclude that both QR and overt extraction are blocked for the same reason. Covert and overt extraction is therefore blocked by a phase boundary. This would mean that the phase created by phase extension is a full phase involving simultaneous spell-out to both interfaces. With such a phase and simultaneous spell-out, there appears to be no way to derive covert head movement and with it partial phase extension. Following Marušič (2005), covert movement is *a result* of non-simultaneous spell-out to the two interfaces, while den Dikken suggests it is *the cause* of non-simultaneous spell-out.

Obviously, it is also possible that quantifiers were trapped in the subject position in examples (3)-(6) for some reason other than phase boundaries and that we should actually be looking at the examples that appear to allow QR from inside the subject position, such as (6a). If this is so, then LF spell-out (and transfer) *does* appear to be delayed in comparison to the PF spell-out, in which case covert movement could in principle be possible. As said, I will not take position at this point.

The issue of the timing of spell-out is of relevance also in simple cases of phase extension. The Phase Impenetrability Condition is sometimes considered a consequence of spell-out. Nothing in the complement of the phase head H is accessible to the operations outside of HP simply because the complement of the phase head H is spelled-out to the two interfaces. Den Dikken does not seem to accept this understanding of the working of phases. Step by step, the derivation looks like this: Phase head H is merged with XP → elements from inside XP (the complement of H) can migrate to the specifier positions of the phase projection → HP is projected and all those elements that needed to get out of XP had already moved out → XP is closed for all subsequent operations (possibly also spelled-out) → a new head Y merges with HP → the lower phase head H moves up and adjoins to Y → according to den Dikken this reopens XP since for him a phase can be extended even after the complement of the phase head became invisible. But if closing of a phase head complement is a consequence of spell-out, then reopening of the phase should not be possible. I will not go into this any further.

2. Predicate inversion in Slovenian

I will now turn to a case of Slovenian predication inside nominal phrases to see if we can get a clearer image with respect to the timing of the two spell-outs we have just discussed. The relevant construction is exemplified in (7). This construction seems parallel to the much discussed similar construction in other languages—such as the one in the English translations in (7)—which according to den Dikken (2006, and a host of literature cited there) involve predicate inversion.

- (7) a. *en konj od človeka* (Slo.)
one horse of man
'a horse of a man'
- b. *un cepec od tvojga brata* (Slo.)
that idiot of your brother
'that idiot of your brother'
- c. *un idiot od fašista od Janeza J.* (Slo.)
that idiot of fascist of Janeza J.
'that idiot of a fascist of Janez J.'

To see whether this truly involves predicate inversion, we can test this construction for subject extraction. As shown in (8), *wh*-extraction of the NP-internal subject is impossible. Note that the entire NP containing the predication can be fronted in a *wh*-question, it is just the *wh*-word (or rather, the 'of x'-PP, preposition stranding is not allowed in Slovenian) that cannot leave the NP ((9b) might actually not involve proper *wh*-fronting but rather scrambling or focus movement, but this is irrelevant for the present discussion).

- (8) **Od čigavega brata je uni cepec prišel?* (Slo.)
of whose brother aux that idiot came
'Whose brother did that idiot of *t* come?'
- (9) a. *Kateri konj od človeka je to naredil?* (Slo.)
which horse of man aux this made
'Which idiot of a man did this?'
- b. *Cepec od čigavega brata misliš, da je prišel?* (Slo.)
idiot of whose brother think that aux came
'An idiot of whose brother do you think that *t* came?'

Note also that *wh*-extraction of a PP complement is possible out of a nominal phrase, as shown in (10).

- (10) *Od čigavega strica je včeraj žena prišla na obisk?* (Slo.)
of whose uncle aux yesterday wife came on visit
'The wife of whose uncle did yesterday come for a visit?'

The fact that subject extraction out of such NP internal predicate inversion construction is out, as shown in (8), can be explained away, in den Dikken's model, with the phase extension mechanism. If predicate inversion in these constructions is possible because the RELATOR head moves to F (the next higher head), then the subject of these predications remains trapped in

the newly created phase and cannot move further (also assuming that adjunction to meaningless categories is disallowed (his (18)). As discussed above, when a phase is completed structure gets spelled-out, but the question is whether this happens simultaneously to the two interfaces or initially only to PF.

If spell-out is simultaneous, then whenever overt *wh*-extraction is banned we should also find lack of covert QR. If, on the other hand, QR is available where overt extraction is not, spell-out to the two interfaces is not simultaneous (and covert phase extension allowed). We can now test this on the Slovenian NP internal predication.

The relevant data is given in (11)-(13). As shown in (11), inverse scope constructions are available in Slovenian. Regardless of what the final position of the QRed quantifier is, it seems to allow QR out of the NP. So for example, (11) means that for every politician, I know at least one of his brothers. (12) is a bit more complicated. I want to construct an example which will be comparable to the example with predicate inversion nominals. The available inverse scope interpretation is something like ‘for all mafia families it is true that I’ve seen a close relative of the boss of that family.’

(11) Poznam vsaj enega brata od vsakega politika (Slo.)
 know at least one brother from every politician
 ‘I know at least one brother of every politician.’

(12) V svojem življenju sem že videl bližnjega sorodnika mafijških šefov (Slo.)
 in my life aux already seen close relative mafia bosses
 vseh mafijških družin.
 all mafia families
 ‘In my life, I’ve already seen a close relative of bosses of all mafia families.’

Using the same kind of internal noun phrase as in (12) in a noun phrase with predicate inversion, it seems that inverse scope is not available. (13) does not have a reading that for all mafia families it is true that I’ve already seen a swine of a relative of the boss of that family.’

(13) V svojem življenju sem že videl svinjo od bližnjega sorodnika mafijških šefov (Slo.)
 in my life aux already seen swine of close relative mafia bosses
 vseh mafijških družin.
 all mafia families
 ‘In my life, I’ve already seen a swine of a close relative of bosses of all families.’

Since (13) does not allow QR of the internal DP to a position higher than the indefinite,² this suggests that QR is blocked which further means that the phase blocking overt extraction blocks also covert movement. This in turn suggests Spell-out is simultaneous when it happens and that covert head movement could not possibly derive LF-only phases as suggested by den Dikken. Of course there is always the alternative to say that these Slovenian constructions aren’t true predicate inversion constructions. Or that QR is blocked in these cases by something else. I will leave these two and a bunch of other options open.

References

² Following Sauerland (2005) (and Marušič 2005) the scope position of the QNP with an inverse scope is outside of the DP, so in the case of (13), the Inverted QNP could not take scope position internal to the subject of the inverted predication, because there is no scope position there for it.

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