The Typology of Head Movement and Ellipsis: a reply to Lipták and Saab

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1 Introduction

Certain languages have been argued to exhibit the so-called X-stranding pattern in ellipsis contexts, such that some head X avoids ellipsis of its maximal projection (and perhaps a higher dominating category) by moving out of that constituent. Representative examples of V-stranding VPE in Hebrew and Irish Gaelic are below (Goldberg 2005:1-2; see also Gribanova 2013):

(1) a. Q: Šalaxt   etmol   et ha-yeladim le-beit-ha-sefer?
         send.PST.2S.F yesterday ACC the-children to-house-the-book
         'Did you send the children to school yesterday?'
       A: Šalaxti   … [$_{VP}$ $t_{salaxti}$ …].
         send.PST.1SG
         'I did.' (*lit.:* 'Sent.')
   b. Dúirt mé go gceannóinn   é agus cheannaigh … [$_{VP}$ $t_{cheannaigh}$ …].
      said I C buy.COND.1SG it and buy.PST
      'I said that I would buy it and I did (*lit:* ...and bought).'

In a recent paper, Lipták and Saab (to appear) (henceforth "L&S") set out to define the necessary conditions for a language to exhibit the X-stranding XP-ellipsis pattern.[1] For a language to exhibit this pattern, L&S argue, it must independently have both X-movement[2] and XP-ellipsis ("XPE"). L&S state this as a bidirectional implication in the form of two *Conditions on X-stranding XPE* – their (11) – which I henceforth refer to as the "CXPE":

(2) **Conditions on X-stranding XP-ellipsis (CXPE; L&S version)**
    A language has X-stranding XP-ellipsis *iff*:

    (i) the language has XP-ellipsis and
    (ii) the language has X-movement out of XP.

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[1] Although L&S's arguments are primarily based in the nominal domain, the vast majority of work in X-stranding XPE concerns the verbal domain: see Goldberg (2005) and references therein.

[2] L&S use the term "X-raising", but I use the more theoretically-neutral term *X-movement* throughout. As L&S note, their conditions (and accompanying diagnostic) have nothing to say about X-movement within XP. Since XP-internal movement will not be relevant for us either, I use the term X-movement strictly to refer to movement of X to a position outside of XP.

L&S's main goal is to use the CXPE to develop a diagnostic for X-movement. Specifically, L&S argue that the <u>absence</u> of X-movement can be positively established for a language if that language has XPE but lacks the X-stranding XPE pattern. Thus, L&S's diagnostic is actually based on the contrapositive of an implication entailed by (2). I represent their reasoning below in (3):

(3) **L&S's head movement diagnostic**
     A language lacks X-movement out of XP if:
     (i)   the language has XP-ellipsis but
     (ii) the language lacks X-stranding XP-ellipsis.

I argue that the CXPE as it is stated in (2) is not restrictive enough: it predicts that the X-stranding XPE pattern ought to be attested in a wider set of languages than it actually is. Moreover, because L&S's diagnostic in (3) is derived from a flawed version of the CXPE, it fails to reliably diagnose the absence of X-movement out of XP.

   Below, I present a natural class of exceptions to the CXPE in (2): namely, a class of languages that exhibit XPE and X-movement independently, yet lack the X-stranding XPE pattern. Given such exceptions, the CXPE as L&S state it cannot be correct. In its place, I propose a revised version of the CXPE—one that is not amenable to a negative diagnostic such as that in (3). With the revised CXPE in place, the complete typology of interactions between head movement and ellipsis is properly accounted for. The very existence of such interactions represents a fundamental challenge to PF-based approaches to head movement, and in favor of approaches in which head movement takes place within the narrow syntax, as we will see.

2   Diagnosing non-movement in the Spanish nominal domain

L&S take up (2) in order to examine the structure of the Spanish nominal domain, with an eye toward determining whether Spanish has N-movement out of NP, as some have claimed. The authors approach this question using their negative diagnostic, stated above in (3).

   First, L&S show (citing earlier sources) that Spanish has NP ellipsis:

(4) Juan habló con tres estudiantes de física   y   yo hablé con dos
     Juan talked with three students   of physics and I   talked with two
     [~~NP estudiantes de física~~].
          students   of physics
     'Juan talked to three students of physics and I talked to two.'

This confirms that Spanish satisfies condition (i) of (3), at least within its nominal domain.

   To investigate whether condition (ii) holds of Spanish, as has been claimed in the literature, L&S look for evidence of N-stranding NPE. On the basis of (2), they predict that the N-stranding pattern should arise if the language truly has N-movement out of NP. However, they show that N-stranding is <u>not</u> available: Spanish sentences with an N-stranding surface profile fail to receive an elliptical interpretation (indicated with the # symbol).

(5) Juan habló con tres estudiantes de física   y   yo hablé con dos estudiantes.
     Juan talked with three students   of physics and I   talked with two students
     a.   'Juan talked to three students of physics and I talked to two students (of some sort).'

b. #'Juan talked to three students of physics and I talked to two students of physics.'

The only interpretation for Spanish sentences such as (5) is one in which nothing is missing, indicating that the language must lack the N-stranding NPE pattern. This satisfies condition (ii) of their diagnostic in (3).

Since both conditions of (3) hold for the Spanish nominal domain, L&S conclude that Spanish lacks movement of N to a position outside of NP.[3] Going back to the CXPE, then, Spanish apparently lacks N-stranding NPE because it fails to satisfy the X-movement condition of (2).

This small case study demonstrates L&S's use of the CXPE to arrive at a negative diagnostic for head movement. Thus, the validity of L&S's diagnostic depends entirely on the well-formedness of the CXPE as they state it in (2). If the CXPE were to require revision for some reason, then the above results would be called into question. In the next section, I present data that pose a challenge for the CXPE; then, I suggest a revision to sustain it. Afterward, I reexamine L&S's conclusions about the status of N-movement in Spanish.

3 A challenge: on the interaction of verb-second and VPE

For at least one group of languages, conditions (i) and (ii) of L&S's diagnostic in (3) both hold, and yet the consequent of (3) does not hold: that is, there are languages with XP-ellipsis that lack the X-stranding pattern, and yet these languages otherwise <u>do</u> have X-movement out of XP. This stands in direct exception to L&S's reasoning, and, as I argue below, reflects a deeper problem with the CXPE as L&S state it.

As mentioned above, L&S's diagnostic is stated in category-neutral terms; so, while their primary argument is based on data from the nominal domain, any X(P) potentially falls within the diagnostic's purview. The data that concern us here involve head movement and ellipsis in the <u>verbal</u> domain—specifically, the interaction of verb-second (V2) V-movement and VPE in the East Scandinavian subfamily, which includes Danish, Norwegian, and Swedish.

To illustrate the exceptional nature of these languages with respect to L&S's diagnostic reasoning in (3), I begin by establishing their satisfaction of relevant conditions (in the verbal domain). First, I show that these languages have VPE, in satisfaction of condition (i); then, I show that they lack the V-stranding VPE pattern, in satisfaction of condition (ii). L&S's diagnostic leads us to expect that these languages should therefore lack V-movement out of VP; however, at the end of this section, we will see that this expectation is not met.

3.1 East Scandinavian has VPE

Concerning condition (i) of (3), prior work has confirmed the availability of VPE in these languages: see, for example, Sailor (2009:§4.2.2), Houser et al. (2011), Thoms (2012), and Sailor (2013), a.o. Representative examples are below:

(6) a. Mona og Jasper havde   vask-et   bilen,   eller rettere Mona havde.
         Mona and Jasper have.PAST wash-PART car.DEF or   rather Mona have.PAST
         'Mona and Jasper had washed the car, or rather Mona had.'   *Danish*

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[3]As noted in fn. 2, L&S's diagnostic has nothing to say about X-movement <u>within</u> XP, so it is left aside there and here.

    b.   Johan har lest *Lolita*, men Kalle har ikke.
        Johan has read *Lolita*, but   Carl has not
        'Johan has read *Lolita*, but Carl hasn't.'   *Norwegian*

    c.   Johan har inte läst *Lolita*, men Kalle har.
        Johan has not read *Lolita* but   Kalle has
        'Johan hasn't read *Lolita*, but Kalle has.'   *Swedish*

Thus, condition (i) of (3) is met.[4]

3.2   East Scandinavian does not have V-stranding VPE

We now turn to condition (ii) of (3). Note that the above examples all involve auxiliary-stranding VPE; the question now is whether these languages <u>disallow</u> the V-stranding variety, in satisfaction of condition (ii).

    Indeed, the V-stranding VPE pattern is unattested in these languages. This was originally noted in Sailor (2009:§4.2.2) for Danish, but the same can be shown for Norwegian and Swedish as well (Thoms 2012):

(7)   a. *Mona og Jasper vaskede   bilen, eller rettere Mona vaskede.
          Mona and Jasper wash.PAST car.DEF or   rather Mona wash.PAST
          Intended: 'Mona and Jasper washed the car, or rather Mona did.'   *Danish*

      b. *Johan leste   ikke *Lolita*, men Marie leste.
          Johan read.PAST not *Lolita*, but Marie read.PAST
          Intended: 'Johan didn't read *Lolita*, but Marie did.'   *Norwegian*

      c. *Johan läste   inte *Lolita*, men Kalle läste.
          Johan read.PAST not *Lolita* but   Kalle read.PAST
          Intended: 'Johan didn't read *Lolita*, but Kalle did.'   *Swedish*

In cases such as these, where no modal or auxiliary material is higher than the ellipsis clause's main verb, a dummy auxiliary verb is stranded by VPE instead – see Houser et al. (2011) for extensive discussion of "*gøre*-support" in Danish, and Platzack (2012) for a cross-Germanic perspective on this element:[5]

(8)   a. Mona og Jasper vaskede   bilen, eller rettere Mona **gjorde**.
          Mona and Jasper wash-PART car.DEF or   rather Mona do.PART
          'Mona and Jasper washed the car, or rather Mona did.'   *Danish*

      b. Johan leste   ikke *Lolita*, men Marie **gjorde**.
          Johan read.PAST not *Lolita*, but Marie do.PAST
          'Johan didn't read *Lolita*, but Marie did.'   *Norwegian*

      c. Maria körde   inte bilen, men Johan **gjorde** det.
          Maria drive.PAST not car.DEF but   Johan do.PAST *det*
          'Maria didn't drive the car, but Johan did.'   *Swedish*

The V-stranding VPE pattern is therefore unavailable in these languages, satisfying condition (ii) of (3).

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[4]See Thoms (2012) for more details on the status of VPE across the Scandinavian language family.

[5]On the status of *det* in (8c), see Houser et al. (2008) and Platzack (2012).

3.3 East Scandinavian <u>does</u> have V-movement out of VP

As we have seen, the East Scandinavian verbal domain satisfies both conditions of L&S's diagnostic as they employ it. According to their reasoning, then, we should conclude that these East Scandinavian languages lack V-movement out of VP. However, decades of scholarship on these languages suggest that this conclusion is faulty.

As is well known, these Scandinavian languages belong to the family of verb-second (V2) languages, such that the second position of finite matrix clauses must be occupied by verbal material by the end of the derivation (den Besten 1977, Vikner 1995, and many others). In the absence of higher auxiliaries such as *havde/har* 'have' in (6), the main verb moves into the relevant high position, yielding V2 order. This movement can be detected by looking at the relative position of the auxiliary/verb with respect to negation and/or adverbials (Danish examples taken from Vikner 1995:§3.3.1):

(9)   a.   Peter <u>har</u> **ofte** <u>drukket</u> kaffe   om morgenen
            Peter has often drunk   coffee in   the.morning
            'Peter has often drunk coffee in the morning.'
   b.   Peter <u>drikker</u> **ofte** kaffe   om morgenen
            Peter drinks often coffee in   the.morning
            'Peter often drinks coffee in the morning.'

As Vikner and others have argued extensively, the V2 pattern is derived by movement of the highest verbal element out of the VP complex into a high position in the clause, typically taken to be the C head (cf. Zwart 1997:ch. 6).[6]

The conclusion to be drawn from these data represents a general consensus in the literature: declarative main clauses in these languages do, in fact, involve V-movement out of the VP, to a position well outside that domain. This is in conflict with the consequent of L&S's diagnostic in (3), as we have seen, and therefore poses an important problem for their main argument. I argue below that this reflects a fundamental flaw with the version of the CXPE in (2) that L&S's diagnostic is built upon. However, the CXPE should not be abandoned in the face of this challenge; instead, it should be revised. I lay the groundwork for such a revision in the next section by sketching the sorts of environments that will consistently produce exceptions to L&S's diagnostic. Later, in §5, I propose a revised version of the CXPE that is sensitive to such environments, but which calls into question the viability of a negative head movement diagnostic of the sort in (3).

4   The relative timing of ellipsis and V-movement in East Scandinavian

In what follows, I argue that the CXPE can be maintained if the nature of the operations in question – specifically, their derivational triggers – are taken into consideration.

I argue that East Scandinavian lacks the V-stranding VPE pattern, despite having the two necessary ingredients (VPE and V-movement to a predicate-external position), because ellipsis

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[6]While the diagnostic results in (9) are also compatible with simple V-movement to T, there are numerous reasons to believe that V moves much higher in East Scandinavian: see Vikner (1995) and some discussion below.

<u>bleeds</u> the main verb's V2-driven movement.[7] In other words, application of VPE is derivationally prior to the application of V2-driven movement, leading to a configuration in which the former operation destroys the input environment for the latter operation (by way of eliding the main verb inside the predicate). A rough sketch of the analysis is provided here; a refinement is further below.[8]

(10)   ...eller rettere [$_{CP}$ Mona C$_{[V*]}$ [$_{TP}$ T$_{[E]}$ ~~[$_{VP}$ vaskede …]~~]]   *Danish; cf. (7a)*

This bleeding effect is not the result of an ad-hoc extrinsic ordering of rules; rather, I argue that it falls out from established derivational properties of each operation. Specifically, it arises because the head that triggers VPE, T$_{[E]}$ (where [E] is a feature associated with the licensing and identity of ellipsis; see below), is merged earlier in the derivation than the head that triggers V-movement in East Scandinavian, C$_{[V*]}$ (where [V*] is shorthand for a "strong" feature that attracts the nearest verb).

   In order for this argument to go through, I must first establish that ellipsis is capable of bleeding movement. This is not at all obvious, since there are several varieties of ellipsis that are in fact defined by the variety of material that has moved out of the deletion site (e.g. sluicing; see also the V-stranding VPE pattern discussed at length in Goldberg 2005 a.o.). It is therefore clear that movement out of an ellipsis site, including head movement, is indeed possible, and thus not bled in several configurations in which it might be. A significant question for the present proposal, then, is whether ellipsis is <u>ever</u> capable of bleeding movement. I show in §4.1 that it is.

   Note also that the bleeding pattern I am arguing for in (10) crucially relies on the timing of V2-driven movement as well: bleeding would not arise if V-movement were triggered by a head lower than the ellipsis trigger.[9] A hypothetical derivation of this sort is sketched below in two steps, with some head Y above VP triggering V-movement prior to merger of T, the ellipsis licenser (see Aelbrecht 2010 on non-local licensing of ellipsis):

(11)   **Step 1:**   [$_{YP}$ Y$_{[V*]}$ [$_{VP}$ V *Obj*]]

   Step 2: [$_{TP}$ T$_{[E]}$ [$_{YP}$ V+Y ~~[$_{VP}$ t_V Obj]~~]]

Thus, the configuration in (10) fails to generate the V-stranding VPE pattern, but the structure in (11) succeeds. Indeed, the derivation in (11) is very similar to what Goldberg (2005) and others have argued is the source of the V-stranding VPE pattern in Hebrew, Irish, and other languages (see §4.3 below). It is therefore crucial to this analysis that the East Scandinavian V remains within VP until C is merged; otherwise, the V-stranding VPE pattern ought to emerge. I take this

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[7]L&S provide a conceptual argument against such a bleeding effect in their discussion of the Spanish nominal domain; I address this in §4.3. L&S also claim that similar timing-based accounts of Merchant's (2001:62) Sluicing-COMP Generalization are not counterexamples to their CXPE; I return to this in §5.

[8]The analysis I propose here represents just one possible explanation for the absence of V-stranding VPE in East Scandinavian. While other possible explanations for this absence could be pursued – for example, those based on theories of ellipsis licensing that do not make use of [E], such as Thoms's (2010) movement-based theory – the present approach has the advantage of straightforwardly reconciling several ellipsis-independent facts about East Scandinavian syntax. See below for further discussion.

[9]See §4.3 on derivations in which single head is responsible for triggering both X-movement and XP-ellipsis.

up later in §4.2.

4.1 The timing of ellipsis: Aelbrecht (2010) on [E]

Merchant (2001) argues that well-known conditions on ellipsis, e.g. identity and licensing, should be represented in the lexicon as a morphosyntactic feature, [E], that must be merged with a particular head in order to be satisfied (i.e. the family of ellipsis-licensing heads: see Lobeck 1995). Like any feature, [E] is subject to interface conditions, and satisfaction of [E] has the effect of triggering the PF non-realization of a particular local constituent; see e.g. Merchant (2001, 2004), Toosarvandani (2009), van Craenenbroeck (2010), Aelbrecht (2010), a.o. for discussion and various implementations of [E].[10] A direct consequence of this feature-based approach is that ellipsis is triggered during the derivation, not post-syntactically, since feature satisfaction is derivational under standard Minimalist assumptions (Chomsky 2001). A prediction that follows, then, is that ellipsis should be capable of interacting with other derivational operations, such as movement.

To explore this prediction, Aelbrecht (2010:§3.2) refines the [E]-based approach to ellipsis licensing and identity by focusing on the precise stage of the derivation at which this feature is satisfied; i.e., the stage at which a given constituent is elided. For VPE in particular, she shows that ellipsis is triggered upon merger of T, the head traditionally taken to be the licenser of VPE (Lobeck 1995): upon being merged, T satisfies a particular subfeatural property of [E], which in turn triggers ellipsis of the main predicate (see Aelbrecht 2010:§4.2.3 for precise details I leave aside here). As Aelbrecht argues at length, the triggering of ellipsis happens during the syntax and has clear syntactic consequences, by way of rendering the elided constituent inaccessible to subsequent operations.[11]

As evidence that ellipsis takes place immediately upon checking of the ellipsis licenser's [E] feature (as opposed to, say, at the higher CP phase), Aelbrecht (2010:§3.4) discusses a variety of predicate ellipsis in Dutch, namely modal complement ellipsis (MCE), which exhibits interesting constraints on extraction from its ellipsis site. Specifically, as exemplified below, arguments originating within MCE ellipsis sites are subject to an extraction asymmetry, in that subjects of raising predicates (e.g. modals) can escape the ellipsis site while objects cannot (Aelbrecht 2010:127):[12]

(12) a. Ik wil   wel een brood meebrengen, maar **ik** kan niet { ~~t_{ik} een brood meebrengen~~ }.
          I   want PRT a   bread along.bring   but   I   can not
          'I do want to bring you a loaf of bread, but I can't.'
      b. *Ik weet niet wie Thomas MOET uitnodigen t_{wie}, maar ik weet wel **wie** hij niet
          I   know not who Thomas must invite   but   I   know AFF who he not

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[10] See Thoms (2010) for an alternative approach to ellipsis licensing.

[11] Aelbrecht (2010) argues that this inaccessibility arises because satisfaction of [E] triggers immediate Spell-Out of the elided constituent: in essence, it is rendered as a phase shipped off to the interfaces, meaning its internal structure cannot be further manipulated by elements higher in the structure. Aelbrecht is careful to note that this shipping-off to the interfaces of the elided constituent is a consequence of [E], and does not necessarily require that the constituent in question have phasal status independent of ellipsis. These details are not critical to the present discussion; see Aelbrecht (2010:§3.2).

[12] See *op. cit.* for the raising status of modals in Dutch. Note that adjuncts also cannot extract from MCE sites (Aelbrecht 2010:§3.4); I leave this aside. Finally, as Aelbrecht notes, the acceptability of MCE in Dutch is subject to dialectal variation. The judgments given here are those reported by Aelbrecht.

MAG   [~~uitnodigen~~ $t_{\overline{\text{wie}}}$].
is.allowed   to.invite
Intended: 'I don't know who Thomas HAS to invite, but I do know who he isn't AL-
LOWED to.'

Aelbrecht argues that this sort of pattern exemplifies a bleeding interaction of ellipsis and move-
ment, providing support for her assertion that ellipsis occurs upon merger of the licensing head
(by way of satisfying [E]). In a nutshell, she claims that Dutch subjects are able to escape the MCE
site because they have moved out of it by the time the MCE licensing head (the modals, e.g. *mag*
'may') is merged; on the other hand, objects such as the wh- phrase *wie* 'who' in (12b) have no
reason to move out of the elided domain until much later in the derivation (i.e. upon merger of
$C_{[+wh]}$), at which point they have been elided.[13]

    The analytical details of MCE are not crucial here, so I leave them aside; for extensive dis-
cussion, see Aelbrecht (2010:§3.4). What matters for present purposes is only that MCE provides
evidence that ellipsis of an XP takes place upon merger of the XPE licenser; it does not wait until
the the end of the phase (or, for that matter, the end of the derivation): if it did, there would be
no way of explaining the asymmetry in (12).

    Thus, MCE represents independent support for the claim that ellipsis can bleed movement if
the trigger for XP-ellipsis is merged at an earlier stage in the derivation than the trigger for move-
ment of some element out of XP. While this effect is reminiscent of rule ordering in early theories
of phonology and transformational syntax, no such rule ordering is involved here; instead, the
interaction (or non-interaction) of any operations triggered during the derivation – as movement
and ellipsis are – is determined solely by independent principles of syntax, e.g. selection. See van
Craenenbroeck and Lipták (2008:§6) for additional examples of ellipsis bleeding XP-movement,
and see Johnson (2013) for evidence that ellipsis can also bleed non-movement operations such
as agreement licensing.

    What remains to be shown at this point is that the variety of movement we are concerned
with in East Scandinavian – namely, V2-driven movement of V to C – is triggered later in the
derivation than VPE is. In the next subsection, I argue that this V2-driven movement is not trig-
gered until C, putting it on par with the illicit object wh- movement out of an MCE site seen
above.

4.2   The timing of verb movement

Simply put, if T in East Scandinavian is a trigger for V-movement, then the analysis I put forth
here is untenable: in that case, satisfaction of T's features (specifically [V*]) would force the verb
to move out of the VPE site prior to its omission, meaning East Scandinavian would be like He-
brew, Irish, etc.[14] in exhibiting the V-stranding VPE pattern sketched above in (11) (albeit with a
second-position stranded V). However, if T is <u>not</u> a trigger for V-movement in East Scandinavian,
as I claim, then the present position is tenable: in that case, the verb would only be prompted

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[13]Aelbrecht (2010:ch. 4) notes that the wh- phrase undergoes intermediate movement to its phase's edge to satisfy its
    edge features, but this is irrelevant here: the MCE ellipsis site properly includes this phase.

[14]There are of course languages with independent V-to-T that lack the V-stranding VPE pattern, e.g. French; however,
    French lacks a VPE operation entirely (Lobeck 1995). This is even true within the larger Scandinavian family: for
    instance, Vikner (1995:ch. 5) argues that Icelandic has V-to-T independent of V2; however, Icelandic happens to
    lack VPE entirely as well. I am not aware of any V2 language that also has independent productive V-to-T <u>and</u> VPE.

to leave VP upon being probed by C, merger of which would take place after the VP had already been elided (in the context of VPE), as sketched above in (10). In such an event, if the verb moves through T at all, it is only to satisfy locality constraints on head movement (i.e. the head movement constraint), not to satisfy any featural demands of T. In other words, it is crucial for the present proposal that the East Scandinavian verb remains in situ until C is merged and its features are checked.

This is precisely the state of affairs argued for at length by Vikner (1995:ch. 5), who shows, for example, that V-to-T does not take place in East Scandinavian when V2 is blocked, i.e. when C is filled, as in most embedded clauses. The logic of this argument is that if V-to-T were independently motivated in the language, then it should take place even when movement to C (for V2) is not available. Vikner demonstrates that V-to-T does not take place in East Scandinavian using several diagnostics which I will not repeat here; the Danish example below involving a traditional test for V-to-T – the position of the verb relative to certain adverbials (which adjoin to VP) – should suffice to make the general point, which holds for Swedish and Norwegian as well (Vikner 1995:142; example taken from *op. cit.*:40):

(13) a. Jeg tror   ikke at   Peter **ofte** <u>spiser</u> tomater
          I   think not that Peter often eats   tomatoes
          'I don't think that Peter often eats tomatoes.'
      b. *Jeg tror   ikke at   Peter <u>spiser</u> **ofte**   tomater
          I   think not that Peter eats   often tomatoes
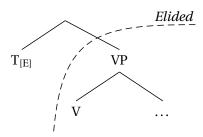   *Intended (lit.):* 'I don't think that Peter eats often tomatoes.'

If East Scandinavian had V-to-T independent of V2-movement to C, then we would expect the verb to move across the adverb in non-V2 environments such as (13b), contrary to fact. Thus, V-movement in these languages only takes place in satisfaction of a feature on C; movement through T only occurs incidentally as a by-product of locality in V2 contexts. For additional arguments, see Vikner (1995:§5.3.2).

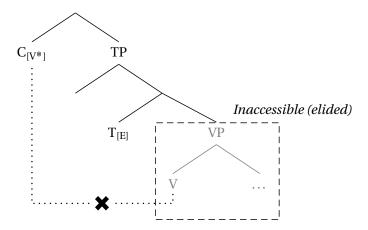## 4.3   Putting things together: how ellipsis can bleed head movement

We are now in a position to consider the details of the present proposal, which is that languages such as those in the East Scandinavian subfamily have the correct ingredients to generate the V-stranding VPE pattern, yet the order in which those ingredients are added to the derivational recipe results in a bleeding configuration instead. The result is a class of languages that L&S's head movement diagnostic predicts to have an X-stranding XPE pattern, contrary to fact.

A stepwise, bottom-up illustration of the derivation leading to this bleeding effect is below, depicted here as applying within the verbal domain as it does in East Scandinavian:

(14)   a.   **Step 1:** Merger of $T_{[E]}$ triggers VPE; VP becomes inaccessible for later operations

   b.   **Step 2:** Merger of $C_{[V*]}$ looks for a verb to attract, but is unable to probe inside the elided VP (see fn. 11)

At this point in the derivation, the [V*] feature on C demands that a verb move up to occupy that position, but $C_{[V*]}$ is unable to probe into the elided VP: the application of ellipsis triggered by merger of $T_{[E]}$ has rendered its contents inaccessible for further operations (Aelbrecht 2010:§3.2.3). Thus, the only VPE derivations that will converge in East Scandinavian are those in which C is able to attract a verbal element that is already outside of the elided VP, e.g. an auxiliary or modal in T, as in *har* 'have' in (9a), or a pleonastic verb inserted in T as a last resort (or which is perhaps always available: see Schütze 2004), as in *gjorde* 'do.PART' in (8a).
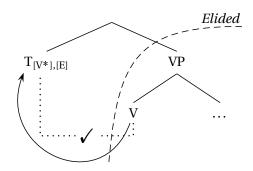
Importantly, this state of affairs need not be limited to patterns of VPE in East Scandinavian.[15] Indeed, the present proposal predicts that this bleeding pattern can, in principle, arise in any language, relative to any elidable XP out of which some head X must move, so long as the trigger for ellipsis of that XP is merged earlier than the trigger for movement of that X. In other words, I have described a restrictive, category-neutral class of exceptions to L&S's X-movement diagnostic, illustrated here via V-movement for expository purposes.

Now, in principle, a language might allow a single head to bear both the XP-ellipsis trigger, [E], as well as the X-movement trigger, [X*]. In such a case, a bleeding pattern would <u>not</u> arise: the two features would be satisfied in parallel (Chomsky 2008:fn. 48), and X would escape ellipsis

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[15]See §5 for treatment of prior claims regarding the bleeding of head movement by ellipsis.

of XP.[16] Indeed, this is precisely what is assumed to be the case for e.g. Hebrew, which Doron (1999), Goldberg (2005), and others have argued has independent V-movement to T, along with VPE licensed by T. The derivation of the Hebrew V-stranding VPE pattern seen below in (15) (taken from Goldberg 2005:2) is depicted in (16):

(15) a. Q: Šalaxt   etmol   et ha-yeladim le-beit-ha-sefer?
             send.PST.2S.F yesterday ACC the-children to-house-the-book
             'Did you send the children to school yesterday?'
          A: Šalaxti.
             send.PST.1SG
             'I did.' (*lit.:* 'Sent.')

(16) **Step 1 (of 1):** Merger of $T_{[V*],[E]}$ triggers V-movement and VPE simultaneously

Thus, the simultaneous triggering of X-movement and XPE will generate the X-stranding XPE pattern. Recall, though, that it is by no means necessary that the two operations be triggered simultaneously in order for the X-stranding XPE pattern to emerge. If X-movement out of the ellipsis site is triggered prior to ellipsis, as sketched earlier in (11), the same end result will obtain.

Before moving on, I must address a conceptual argument posed by L&S (§5.3) against the basic analytical approach taken here. Specifically, they argue that if head movement can be bled by ellipsis in some cases, then it should always be bled, contrary to fact, given the existence of V-stranding VPE in Hebrew and other languages. L&S note that any attempt to explain why XPE could bleed X-movement in some cases but not others would "force us to introduce a non-desirable distinction into the typology of movement" (*op. cit.*:§5.3). However, this criticism does not apply to the analysis proposed here: rather than stipulating a novel distinction in the typology of head movement, I have appealed to an existing distinction within that typology – namely, a distinction between types of head movement triggers. The distinction between local versus long-distance triggers of head movement has ample motivation independent of matters concerning ellipsis (see e.g. discussion in the previous subsection). Thus, rather than adding to the typology of movement, the present analysis exploits an existing component of it. This is, in fact, an advantage of this proposal: it reconciles both typologies – that of head movement and ellipsis – via derivational timing, a factor shared by the two independently.

I discuss further predictions and extensions of this analysis later. First, I turn to the matter of

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[16]See discussion of the Sluicing-COMP Generalization in §5 below.

revising the CXPE.

5 Revising the Conditions on X-stranding XPE

The analysis above explains the curious absence of V-stranding VPE in East Scandinavian, a language subfamily that otherwise requires movement of the main verb to C in non-VPE main clause contexts. However, while this absence is no longer a mystery, it still stands in exception to L&S's diagnostic in (3), and more broadly to the CXPE as L&S state it in (2). As mentioned above, the state of affairs described in §4 characterizes a hypothetical natural class of exceptions that necessitates revision of the CXPE. The revision in question can only properly capture this class if it includes statements about the relative timing of each operation, X-movement and XPE.

I provide such a revision here. Let the notation "[X*]" refer to a strong feature that attracts category X, on par with the earlier category-specific use of [V*].

(17) **Conditions on X-stranding XP-ellipsis (Revised version)**
A language L has X-stranding XP-ellipsis iff:

(i) L has X-movement out of XP triggered by a feature [X*] on a head α;
(ii) L has XP-ellipsis triggered by merger of a head β bearing [E]; and,
(iii) Satisfaction of [X*] on α is derivationally prior to merger of β, or $\alpha = \beta$.

This revised version of the CXPE properly accommodates well-known patterns of X-stranding XPE in the verbal domains of languages such as Irish and Hebrew, but it also properly excludes the challenging case posed by the East Scandinavian verbal domain. Specifically, East Scandinavian fails to meet condition (iii) of (17) with respect to VPE, thereby capturing the absence of the V-stranding pattern in that group of languages.

The claim that ellipsis can bleed movement is not new; this was discussed in §4.1 with regard to phrasal movement, for example. However, there are also existing claims in the literature that ellipsis can bleed head movement in certain circumstances, akin to the central focus of this article. Given that the revised CXPE I propose here defines the environments in which such bleeding can and cannot take place, it is important to reconcile these prior claims with (17). Focusing on two such claims in particular,[17] I take up this task in the remainder of this section.

5.1 T-to-C movement in English sluicing

Merchant (2001:§2.2.2) observes that elements which would otherwise be pronounced in C are blocked in the context of sluicing, a fact he states as the Sluicing-COMP Generalization.[18] For example, the elements of English that would normally undergo T-to-C movement in non-subject questions cannot appear alongside a sluiced wh- phrase (e.g. *A: Mary has bought something. B: What (*has)?*). Merchant suggests that one way of interpreting these facts is to assume that sluicing is ellipsis of TP, and that TP ellipsis bleeds the T-to-C movement normally triggered by C. This conflicts with the analysis I propose here: under Merchant's analysis of sluicing, C is also the

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[17]Beyond these two, I know of only one other claim of ellipsis bleeding head movement: that of V-to-v movement in pseudogapping (Lasnik 1999, Boeckx and Stjepanović 2001). As that particular analysis also bears on the question of whether head movement takes place in the narrow syntax or at PF, I delay treatment of it to §7.

[18]To wit: "In sluicing, no non-operator material may appear in COMP" (Merchant 2001:62). See also *op. cit.*:81-2 on a counterexample from Hungarian.

trigger for ellipsis (by way of bearing [E]). According to condition (iii) of the revised CXPE in (17), X-movement should <u>not</u> be bled by XPE when the two operations are triggered simultaneously, as in the case of T-to-C and Merchant's analysis of TPE in sluicing. Altering this component of the CXPE to allow bleeding of T-to-C in sluicing would incorrectly rule out V-stranding VPE in languages such as Hebrew, as noted above.

However, there are reasons to dismiss a bleeding approach to that component of the Sluicing-COMP Generalization. As L&S (and others) point out, the bleeding approach to Sluicing-COMP effects is undermined by the fact that it only accounts for half of the facts: even if ellipsis did bleed English T-to-C movement in sluicing, it would have nothing to say about the obligatory absence under sluicing of elements normally base-generated in C (e.g. complementizers: Merchant 2001:§2.2.2.2). In such cases, there is no movement for ellipsis to bleed. It would seem, then, that a unified analysis of Sluicing-COMP effects is called for – one that generally blocks exponence of C in the context of sluicing (bearing in mind well-known exceptions, e.g. Hungarian). There are no advantages to adopting a bleeding account of e.g. the absence of T-to-C in English sluicing, and concerns of parsimony and preservation of the revised CXPE provide reasons enough to reject it.

I will not attempt to formulate an analysis of the Sluicing-COMP Generalization here, though I will mention that there are several alternatives which would be consistent with the revised CXPE in (17). For example, T-to-C would indeed be bled if TPE were triggered by some intermediate head situated between CP and TP (assuming C remains the trigger for T-movement); though, again, such an approach would only capture a fraction of the data covered by the Generalization. On the other hand, the bleeding question is irrelevant if sluicing does not involve TPE at all, but rather ellipsis of a larger constituent – one that properly includes the landing site for auxiliary inversion in English questions (as well as elements base-generated there in other languages), but which excludes the surface position of initial wh- phrases. For an approach along these lines that avoids undesirable deletion of an intermediate (i.e. bar-level) constituent (cf. Merchant 2001:81), see van Craenenbroeck (2010:ch. 4) and Aelbrecht (2010:§4.1). Any one of these options would be compatible with the revised CXPE, and therefore preferred, given the sluicing-independent support for the CXPE established above.

5.2 V-movement in Hungarian sluicing

In earlier work, Lipták has argued that ellipsis has the capacity to bleed head movement, citing V-movement in Hungarian sluicing as a specific example (van Craenenbroeck and Lipták 2008). However, that work does not attempt to provide a set of conditions on when such bleeding does and does not take place, raising questions about how e.g. the V-stranding VPE pattern – a non-bleeding configuration – would be properly derived. I begin discussion of this argument by assuming that the facts van Craenenbroeck and Lipták (2008) describe do indeed represent an instance of ellipsis bleeding V-movement, and I will lay out the attendant predictions the revised CXPE makes regarding the syntax of Hungarian V-movement. At the end of this subsection, though, I consider the possibility that the Hungarian phenomenon the authors describe does not involve head movement being bled at all, but rather phrasal (remnant VP) movement.

As exemplified below, van Craenenbroeck and Lipták (2008) argue that embedded polar questions in Hungarian involve a Q(uestion)-suffix, *-e*, generated in a low left-peripheral Foc(us) position. In the absence of ellipsis, this suffix obligatorily attaches to the embedded finite verb; van

Craenenbroeck and Lipták take this to indicate that the verb has undergone V-movement to Foc (their (6)):

(18) Kiváncsi vagyok, hogy János elment*(-**e**) iskolába.
      curious I.am   COMP János PV.went*(-Q) school-to
      'I wonder if János left for school.'

As the authors show, the only circumstance in which this *-e* suffix can attach to anything other than the finite verb is when sluicing of a somewhat unfamiliar sort – one that involves a non-wh-remainder – has applied, rendering the finite verb unpronounced. In only these cases, the suffix obligatorily surfaces on the non-wh- remainder instead:

(19) a. János meghívott egy lányt, de nem tudom hogy ANNÁT*(-**e**).
          János invited   a girl but not I.know COMP Annát*(-Q)
          'János invited a girl, but I don't know if it was Annát.'
      b. *Kiváncsi vagyok, hogy JÁNOS-**e** ment el.
          curious I.am   COMP János-Q went PV
          Intended: 'I wonder if it was János who left.'

On the basis of these facts, van Craenenbroeck and Lipták argue that V-movement has been bled by sluicing, leaving the *-e* Foc suffix with no other choice but to attach to the non-wh- remainder to its left, which itself is in SpecFocP.

Importantly, the authors assume that the elided constituent in Hungarian sluicing is the complement of Foc.[19] The predictions made by the revised CXPE in (17) should now be clear: if a single head triggers both ellipsis of XP and head movement out of XP, then we expect to see a head-stranding pattern. This is at odds with van Craenenbroeck and Lipták's analysis of the above facts. To derive the bleeding pattern these data seem to reflect, ellipsis must be triggered prior to V-movement out of the sluiced constituent. To preserve the CXPE, these facts must be reanalyzed.

One possible alternative was described in the previous subsection for the Sluicing-COMP Generalization: if V-movement is truly being bled here, then sluicing in Hungarian must be triggered by some head below the base position of *-e* (assuming *-e* is the trigger for V-movement). If *-e* is in Foc, then it cannot be the case that Hungarian sluicing involves ellipsis of Foc's complement; rather, Foc would select some YP whose head, $Y_{[E]}$, would take the elided constituent as its complement. This would derive the bleeding of V-movement suggested by the data above.[20]

It is also possible – perhaps likely – that the phenomenon van Craenenbroeck and Lipták (2008) characterize as bleeding of V-movement is in fact bleeding of remnant VP-movement. That Hungarian verbs move via remnant VP-movement and not head movement has been supported elsewhere, in particular by Koopman and Szabolcsi (2000); however, additional evidence comes from facts presented by van Craenenbroeck and Lipták, themselves. That is, in their §6, they show that Hungarian non-verbal predicates behave like Hungarian verbs in apparently

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[19]The category of this complement is unclear in van Craenenbroeck and Lipták (2008); however, in a more recent article, the same authors argue that it is in fact TP (van Craenenbroeck and Lipták 2013).

[20]The drawback to this sort of approach is that it gives up the Spec-Head relationship that exists between the sluicing remainder and the sluicing licenser—a relationship that forms the foundation of the sluicing typology developed in van Craenenbroeck and Lipták (2013). However, this relationship may still hold in Hungarian if the sluicing remainder moves through the specifier of $Y_{[E]}$ on its way to SpecFocP. These predictions remain to be explored.

moving to FocP to take *-e*, a movement the authors acknowledge must be phrasal. Moreover, this phrasal movement of non-verbal predicates in Hungarian is bled by ellipsis in just the same way that the apparent V-movement described above is (their (29) and (31)):

(20) a. Kiváncsi vagyok, hogy Mari [AP nagyon okos]*(-**e**).
          curious I.am   COMP Mari [very   smart]*(-Q)
          'I wonder if Mari is very smart.'
      b. Valaki   az osztályból nagyon okos.   Kiváncsi vagyok, hogy MARI*(-**e**).
          someone the class.from very   smart   curious I.am   COMP Mari*(-Q)
          'Someone from the class if very smart. I wonder if it is Mari.'

Given the similarities in the behavior of verbs and non-verbal predicates in Hungarian, on top of the extensive arguments in favor of remnant VP-movement rather than V-movement in the language, the most parsimonious position to take with respect to the ellipsis data is that the ellipsis operation discussed in van Craenenbroeck and Lipták (2008) consistently bleeds phrasal movement, but not head movement, since the verb in fact never undergoes head movement of the sort that could be bled (i.e., out of the extended projection of the predicate).[21]

While it seems reasonable to assume that bleeding of head movement and bleeding of phrasal movement would be subject to the same conditions, the present discussion has focused only on refining the former, as formalized in (17). I leave it to future work to determine what the precise conditions on bleeding of phrasal movement are, and whether they can account for the Hungarian facts depicted above in a way that treats the interaction of sluicing with verbs versus non-verbal predicates uniformly.

Having discussed prior claims of ellipsis bleeding head movement, we are now in a position to return to the main discussion. The revision to the CXPE I propose above has direct implications for L&S's head movement diagnostic, as the latter is built on the former. I explore these implications in the next section.

6   Revisiting Lipták and Saab's head movement diagnostic

Recall the logic underlying L&S's head movement diagnostic, as demonstrated above in §2: if we know the conditions that yield the X-stranding XPE pattern, then we can reverse-engineer a diagnostic for the absence of head movement. As I argue below, the addition of condition (iii) to the CXPE in (17) renders this logic unworkable.

The reasons are straightforward: under the revised CXPE, there are now at least two means by which a language with XPE might lack the X-stranding pattern: either that language lacks X-movement out of XP (condition (i)), or that language does have X-movement out of XP, only <u>not at the relevant derivational stage</u> (condition (iii)). Simply observing that a language with XPE lacks the X-stranding pattern is insufficient for distinguishing between these two possibilities, undermining the diagnostic utility of this observation. At best, all we might determine from this is that the language in question either fails to meet condition (i) of the CXPE (consistent with L&S's original diagnostic) or condition (iii), but this is not a particularly informative result, and therefore not a useful diagnostic. Thus, while the CXPE revisions motivated above properly

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[21]This is not to say that ellipsis cannot bleed head movement in Hungarian *in principle*; rather, there is simply no evidence of it in the data discussed by van Craenenbroeck and Lipták (2008).

capture the full set of X-stranding XPE languages, they fundamentally preclude a negative head movement diagnostic of the sort proposed by L&S.[22]

We return now to L&S's discussion of Spanish, and their conclusion that Spanish lacks N-movement out of NP. Since the revised CXPE allows languages with both XPE and X-movement out of XP to nevertheless lack the X-stranding pattern, it is therefore possible, in principle, that Spanish <u>does</u> have N-movement out of NP—the opposite of L&S's diagnostic conclusions. That is, if Spanish NP-ellipsis is triggered early enough in the derivation such that it precedes the hypothetical trigger for N-movement out of NP, then the resulting state of affairs in the Spanish nominal domain would be equivalent to the East Scandinavian verbal domain: N-movement out of NP would be bled by an earlier application of NPE, blocking the N-stranding pattern.

Thus, at the very least, the absence of N-stranding NPE in Spanish tells us nothing about the presence or absence of N-movement out of NP in that language. Therefore, in principle, it remains a possibility that Spanish <u>does</u> have N-movement out of NP, contrary to L&S's claims. This remains an open empirical question, and I will not attempt to explore it here; rather, I suggest that diagnosing the presence or absence of such movements should be done independent of ellipsis, unless the complications described above can be properly controlled for.

7   Consequences for the theory of head movement

While the preceding proposal is mechanically rather simple, the observation it is meant to capture – that XPE bleeds X-movement in particular configurations – has significant consequences for the theory of head movement. That is, the decidedly derivational nature of the interaction between head movement and ellipsis licensing demands that head movement be situated squarely within the narrow syntax. This poses a fundamental challenge for recent claims that head movement takes place only post-syntactically, at PF (Chomsky 2001, Boeckx and Stjepanović 2001, a.o.).[23]

The challenge posed by the findings presented here is straightforward: if head movement takes place at PF rather than in the narrow syntax, then we would predict that a syntactic operation such as ellipsis (see §4.1) should simply have no interactions with head movement whatsoever. Operations that apply during the course of the derivation should be inherently incapable of bleeding post-syntactic processes taking place at PF.

It comes as some surprise, then, that there are at least two places in the literature where ellipsis has actually been used as an argument in <u>support</u> of the PF approach to head movement: one concerned with the Sluicing-Comp Generalization (see above) and one involving the Verbal Identity Requirement in V-stranding VPE (Goldberg 2005:§4.1). I discuss these in turn below, arguing that neither case provides convincing evidence of a PF approach to head movement, and indeed that each case represents part of a basic challenge to that approach.[24]

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[22]I note in passing that an affirmative version of L&S's proposed head movement diagnostic is untenable as well, by way of being circular: that is, we cannot use the presence of X-stranding XPE to diagnose X-movement in a language, since even distinguishing X-stranding XPE from superficially similar-looking phenomena involving omission of a smaller element (e.g. argument drop in ostensible V-stranding contexts) requires independent evidence of X-movement out of XP. See Goldberg (2005) for extensive discussion.

[23]L&S take no firm stance on the ongoing head movement debate.

[24]See Hartman (2011) for additional arguments from ellipsis that head movement takes place in the narrow syntax.

7.1 On Boeckx and Stjepanović (2001)

Boeckx and Stjepanović (2001) discuss a particular approach to pseudogapping – that of Lasnik (1999) – involving an instance of VPE that bleeds V-to-v head movement, but not phrasal object movement out of VP, resulting in ellipsis of just the verb. A rough sketch is below:

(21)   Debbie ate the chocolate, and Kazuko did [$_{vP}$ v [$_{XP}$ the cookie ~~[$_{VP}$ ate t~~$_{\text{the cookie}}$ ~~]~~]]

The authors argue that the reason one movement type is bled and not the other stems from the fact that head movement occurs post-syntactically at PF, while phrasal movement always occurs within the derivation. A crucial assumption underpinning Boeckx and Stjepanović's proposal is that ellipsis is also a post-syntactic PF operation. If both ellipsis and head movement take place at PF, they argue, the two can be ordered freely with respect to each other,[25] yielding in English either the usual V-to-v movement (and vacuous VPE), or pseudogapping with bled V-to-v movement.

This analysis has several drawbacks, though we will only concern ourselves with those that bear on the PF-based approach to head movement. As detailed in §4.1, there are important reasons for thinking that ellipsis is <u>not</u> a post-syntactic PF operation, but rather a normal syntactic operation triggered by feature satisfaction during the derivation. However, even if ellipsis were post-syntactic, it is unclear how the facts described above could be captured.

Assume VPE and V-movement are both PF operations and can arise in either order, as Boeckx and Stjepanović (2001) suggest. This predicts that languages such as Hebrew should optionally allow ordering of VPE before V-movement, bleeding the V-to-T operation that derives the V-stranding pattern in (15), perhaps leading to the appearance of a pleonastic verb to host the stranded tense affix. This prediction is not confirmed, however: the V-stranding pattern is the only variety of VPE attested with Hebrew simplex predicates.[26] This shows that VPE can never be ordered before V-movement in V-stranding VPE languages such as Hebrew, contrary to Boeckx and Stjepanović's (2001) predictions.

The situation only gets worse for their proposal when we look back at the East Scandinavian languages. If VPE and V-movement can be freely ordered, as Boeckx and Stjepanović claim, then we predict that ordering V-movement first (for V2) should be possible, yielding the V-stranding VPE pattern. As I argued at length in §3.2, the East Scandinavian languages strictly prohibit that pattern, thus providing clear evidence against X-movement preceding XPE, the opposite state of affairs as that seen above in Hebrew.

In sum, if we are to maintain Boeckx and Stjepanović's (2001) position that both head movement and ellipsis are PF operations, then it is unclear how any of the aforementioned data can be coherently explained. The relative order of head movement and ellipsis cannot be free: such reordering is not attested in languages such as Hebrew, since ellipsis cannot precede head movement, nor is it attested in languages such as those in East Scandinavian, since head movement

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[25]As Boeckx and Stjepanović (2001:352) put it, "...not being syntactically driven, head movement and ellipsis (both PF operations, we assume) compete, the choice between them being determined by independent factors".

[26]Landau (2006) suggests that Hebrew has V-stranding VPE precisely because it happens to lack a pleonastic verb equivalent to English *do*. This cannot be correct, however: Welsh has a *do*-support operation that can arise in VPE contexts, but it also allows V-stranding VPE in some contexts (Rouveret 2005). If anything, then, Welsh would be the best candidate for the free ordering of VPE and V-movement predicted in Boeckx and Stjepanović (2001), but then the existence of Hebrew and other strictly V-stranding VPE languages militates against this. See Rouveret (2005) for additional arguments that V-movement takes place in the narrow syntax.

cannot precede ellipsis. Therefore, the only conceivable way to maintain the claim that both operations occur at PF would be to impose an extrinsic ordering between them on a language-specific basis. This is just the sort of costly stipulation that Boeckx and Stjepanović seek to avoid.

7.2   On Schoorlemmer and Temmerman (2012)

In her treatment of V-stranding VPE languages, Goldberg (2005:ch. 4) observes that verbs stranded by ellipsis must be identical to their counterpart in the antecedent clause in at least their root and derivational morphology. She labels this generalization the Verbal Identity Requirement and suggests that it might be best understood as obligatory reconstruction of all moved verbs at LF (*op. cit.*:180). This approach exploits the fact that ellipsis is already subject to an identity requirement, and the stranded verbs behave as though they are still inside VP with respect to the assessment of ellipsis identity. Assuming obligatory reconstruction, the identity requirement will be satisfied by comparing VPs whose heads have not moved away at the relevant level of representation.

Recently, Schoorlemmer and Temmerman (2012) have reinterpreted the existence of the Verbal Identity Requirement as an argument in support of a PF approach to head movement. Specifically, they claim (following a suggestion from Goldberg 2005:181) that this requirement would fall out automatically if these verbs never underwent syntactic movement in the first place: regardless of when ellipsis identity is calculated, there is no need for reconstruction if head movement were not syntactic. Indeed, if these verbs only move at PF, then it should not matter whether the ellipsis identity condition itself is syntactic or semantic in nature (on this debate, see Merchant 2013), since, in any case, it is not phonological in nature. For all purposes except pronunciation, the verbs in question occupy their base positions within VP according to Schoorlemmer and Temmerman, deriving the Verbal Identity Requirement without further comment.

To support their PF-based approach, the authors note that phrasal movement out of ellipsis sites are not subject to an equivalent identity requirement. For them, this follows from the fact that phrasal movement takes place in the narrow syntax, while head movement does not. However, as mentioned above, phrasal movement and head movement <u>do</u> pattern alike with respect to ellipsis is at least one significant way: they can both be bled by it. The previous subsection argues that this effect for head movement in particular cannot be captured under a PF-based approach, especially given the decidedly derivational nature of ellipsis licensing (which Schoorlemmer and Temmerman 2012 also assume). In short, their approach fails for the same reason that Boeckx and Stjepanović's (2001) does: it fails to capture the ability of head movement to interact with another syntactic operation, ellipsis, generating the bleeding pattern. In the case of Schoorlemmer and Temmerman (2012), a PF movement account of V-stranding VPE might capture the Verbal Identity Requirement facts, but with no greater empirical coverage than Goldberg's (2005) reconstruction-based account, and in fact with far worse empirical coverage, once the bleeding facts stemming from the revised CXPE are considered (which Goldberg's account is compatible with). Again, parsimony demands rejection of PF-based approaches to head movement, at least those whose argumentation is built on evidence from ellipsis.

Schoorlemmer and Temmerman (2012:239) express concern that Goldberg's approach fails to provide an explanation for why head movement should behave differently than phrasal movement with respect to reconstruction (since, for Goldberg, head movement reconstructs obligatorily, which is not the case for phrasal movement, the latter not being subject to an identity

requirement even when reconstruction applies). However, Schoorlemmer and Temmerman's own analysis fails on similar grounds: there is no reason given for why (or indeed, *how*) head movement takes place exceptionally at PF when phrasal movement does not. We have known that head movement often (but not always) behaves differently than phrasal movement since the distinction was first posited. The challenge is in providing an account for that distinction in a restrictive way. While addressing this in any depth ranges well beyond the scope of this article, doing so adequately will require taking stock of what the syntactic evidence tells us. The evidence I discuss above tells us that the problem cannot be dealt with by simply evicting head movement from the domain of syntax.

8 Conclusion

I have argued that a revision to Lipták and Saab's (to appear) Conditions on X-stranding XP-Ellipsis (CXPE) are necessary if exceptional data from East Scandinavian are to be accounted for. The CXPE must be sensitive to the derivational timing of the operations it concerns: if the trigger for X-movement is merged after XP-ellipsis has already taken place (i.e. upon satisfaction of [E]: Aelbrecht 2010), then that movement cannot occur: it is bled. This can only be understood as an interaction of <u>syntactic</u> operations; there is no way to accommodate the facts under a PF-based approach to head movement. This explains why languages that otherwise have the necessary ingredients to generate the X-stranding XP-ellipsis pattern – namely, languages with both XP-ellipsis and X-movement out of XP independently – clearly fail to exhibit that pattern. The complete typology of interactions between head movement and ellipsis can only be captured once the theory is made sensitive to the derivational triggers of those syntactic operations.

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