On the Interaction between Verb Movement and Ellipsis: New Evidence from Hungarian[*]

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1. Introduction: can ellipsis bleed verb movement?

One of the many puzzles surrounding the construction known as sluicing concerns the fact that in languages with T-to-C-movement in *wh*-questions, the finite verb is necessarily absent in matrix sluicing (Merchant 2001:62-74). Consider the English example in (1).

(1) A: Max has invited someone.
     B: Who (*has)?

The obligatory absence of the auxiliary in B's reply is puzzling when we combine two fairly uncontroversial assumptions: (i) the auxiliary raises to C° in English *wh*-questions, and (ii) sluicing involves IP-ellipsis. Under such a view, *has* in (1)B should have moved out of the ellipsis site, and should hence be able to surface next to the *wh*-phrase, as is represented in (2).

(2) $[_{CP}$ Who $[_{C'}$ has $[_{IP}$ Max $[_{I'}$ t_{has} invited $]]]]$?

In principle there are various ways of solving this puzzle. We outline three possible accounts in (3)-(5). The first two have thus far not been proposed in the literature, the third one is one that has recently gained some popularity (cf. Lasnik 1999, Merchant 2001, Boeckx & Stjepanović 2001).

(3) A: Max has invited someone.
     B: $[_{CP}$ Who $[_{C'}$ has $[_{IP}$ Max $[_{I'}$ t_{has} invited $]]]]$?

(4) A: Max has invited someone.
     B: $[_{CP1}$ Who $[_{C1'}$ $C_1°$ $[_{CP2}$ $[_{C2'}$ has $[_{IP}$ Max $[_{I'}$ t_{has} invited $]]]]]$?

(5) A: Max has invited someone.
     B: $[_{CP}$ Who $[_{C'}$ C° $[_{IP}$ Max $[_{I'}$ has invited $]]]]$?
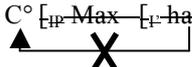
The first two proposals each target one or both of the assumptions that led to the puzzle outlined above. The analysis in (3) for example assumes that sluicing does not delete IP, but rather C'. As a result, an auxiliary that has raised to C° is contained in the ellipsis site and cannot surface under sluicing. The structure in (4) on the other hand challenges the idea that the verb movement involved in subject/aux-inversion targets the head of the projection the specifier of which is filled by the *wh*-phrase. Rather, the verb lands in (the head position of) a lower CP. If sluicing then deletes that lower CP-layer (cf. Van Craenenbroeck 2004), the *wh*-phrase survives sluicing but the verb does not. The third account differs from the previous two in that it assumes that there is a crucial difference between the syntax of

non-elliptical *wh*-questions and that of sluiced ones. In particular, the ellipsis involved in sluicing bleeds T-to-C-movement and it is due to this lack of verb movement that the auxiliary is absent in (1)B. This account was proposed for sluicing by Lasnik (1999) and Merchant (2001) and extended to (the lack of) *v*-to-V-movement in pseudogapping by Lasnik (1999) and Boeckx & Stjepanović (2001).

The main goal of this paper is to provide direct morphological evidence in favor of the hypothesis that ellipsis can bleed verb movement, thus lending strong support to the account outlined in (5) and against those in (3) and (4). The central data come from Hungarian and Turkish. The paper is organized as follows. In the next section we introduce two prerequisites for the argument: the syntax of the interrogative suffix in Hungarian and the existence of non-*wh*-sluicing in this language. Section three contains the main argument: we use the behavior of the Hungarian interrogative suffix under sluicing to test the predictions made by the three proposals outlined above, demonstrating that only the third one yields the correct results. In section four we present some further corroborating evidence for our account, while section five shows that Turkish sluicing presents additional morphological evidence for ellipsis bleeding verb movement. Section six contains a further extension of the analysis, showing that even some types of XP-movement can be bled by ellipsis (cf. also Baltin 2002), and section seven sums up and concludes.

2. Prerequisites for the argument

In this section we introduce two prerequisites for the argument developed in the next section. The first one concerns the syntactic behavior of the interrogative *e*-suffix in standard Hungarian, the second the cross-linguistic properties of sluicing.

2.1. The Hungarian interrogative e-suffix

In Hungarian embedded yes/no-questions are marked by adding the suffix –*e* to the finite verb. This suffix is obligatory.[1] A basic example is given in (6).

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

This suffix only shows up in yes/no-questions, i.e. it is not an all purpose question morpheme that shows up in all interrogatives. That explains why it is illicit in the *wh*-question in (7).

(7)   Kiváncsi   vagyok, hogy   ki   ment(***-e**)   el.
           curious   I.am   COMP   who   went(***-Q**)   PV
           'I wonder who left.'

A third property of this –*e* — and one that will become important in the next section — concerns its distribution. As the data in (8) show, this suffix can only attach to the verb.[2] Specifically, it cannot cliticize onto an argument, regardless of whether this argument is a topic (as in (8)a) or a focus (cf. (8)b). Instead, it has to appear on the verb (cf. (8)c).

(8) a. * Kiváncsi vagyok, hogy János-**e** elment.
        curious   I.am   COMP   János-**Q** PV.went
        intended: 'I wonder if János left.'

    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.'

    c.   Kiváncsi vagyok, hogy JÁNOS ment-**e** el.
        curious   I.am   COMP   János   went-**Q** PV
        intended: 'I wonder if it was János who left.'

We propose to analyze the *e*-suffix as occupying the left-peripheral focus head in Hungarian (compare Dimitrova-Vulchanova & Giusti 1998 for a similar analysis of Bulgarian *li*). In an unmarked yes\no-question, it triggers movement of the verb+preverb-complex to this position. This means that an example such as the one in (6) (repeated below as (9)) receives the schematic representation in (10).

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

(10)
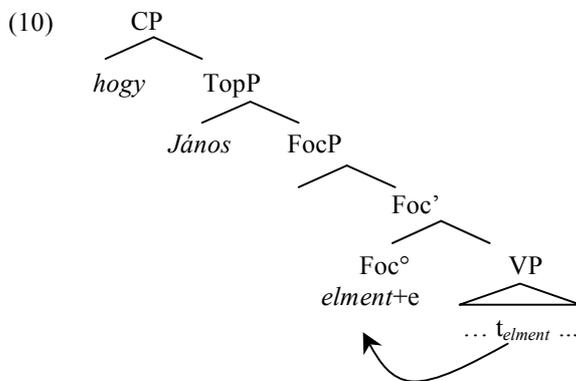
The idea behind this approach is that yes/no-questions in Hungarian involve the syntax of focusing, similar to *wh*-questions in this language (É. Kiss 1987). Yes/no-questions are in all respects built parallel to sentences where we find focus on the polarity of the clause: in both sentence types primary accent falls on the verb, which is fronted to the left periphery, maintaining the preverb⸺verb order. These parallel structures are illustrated in (11):

(11) a. Mondtam, hogy   János   ELMENT   iskolába
      I.said   COMP   János   PV.went   school-to
      'I said that János DID go to school.'

    b. Kérdeztem, hogy   János   ELMENT-*(E)   iskolába
      I.asked   COMP   János   PV.went   school-to
      'I asked if János went to school.'

Following Höhle (1991-92) and Han and Romero (2004) we assume that the focal stress on the verb in (11a) marks the presence of a conversational epistemic operator that applies to the proposition *p* to yield a proposition that is true if the speaker is certain that *p* should be accepted as true and added to the common ground. We believe the yes/no question in (11b) is the question equivalent of such a verum focus construction: it asks for the polarity of the proposition *p*.

Summing up, in this subsection we have introduced the interrogative suffix –*e* in Hungarian. We have shown that it only occurs in yes/no-questions and that it cannot attach to arguments. As far as its analysis is concerned, we proposed that it occupies the head of the left-peripheral FocP and that it triggers verb movement to this projection.

*2.2. The cross-linguistic syntax of sluicing*

At first sight, sluicing in Hungarian looks just like its English counterpart. Consider an example in (12).

(12) János   meghívott   egy lányt,   de nem   tudom   kit.
      John   invited   a girl   but not   know-1SG   who
      'John invited a girl, but I don't know who.'

As we have argued extensively elsewhere, however, this cannot be the whole story (cf. Van Craenenbroeck & Lipták 2005, 2006). In particular, it is well-known that while *wh*-phrases in English target specCP, in Hungarian they only move to specFocP (cf. Lipták 2001 and references mentioned there). We take this to mean that while English sluicing is deletion of IP, in Hungarian sluicing a smaller portion of the structure is elided, i.e. the complement of Foc°. In technical terms, sluicing in Hungarian is licensed by the [+Operator]-feature in Foc° (rather than by the [+wh,+Q]-features in C°, cf. the papers mentioned for more details). This line of analysis has a number of immediate consequences. First of all, it explains straightforwardly why in a sluicing example such as (12) the sluiced *wh*-phrase can be preceded by the complementizer *hogy* 'that' (cf. (13)). Secondly and more importantly for the present discussion, however, it predicts that non-*wh*-foci checking an operator feature in specFocP should also be able to trigger sluicing. Put more generally, Hungarian is predicted to have both *wh*- and non-*wh*-sluicing. As the example in (14) shows, this prediction is borne out.

(13) János   meghívott   egy lányt,   de nem   tudom   hogy   kit.
      János   invited   a girl   but not   know-1SG   that   who
      'János invited a girl, but I don't know who.'
(14) János   meghívott   valakit   és   azt   hiszem,   hogy   BÉLÁT.
      János   invited   someone   and   that   think-1SG   that   Béla
      'János invited someone and I think it was Béla whom he invited.'

Both types of sluicing receive the same analysis, as both of them involve the deletion of the complement of Foc° licensed by the operator feature that is checked by the element in specFocP. A partial derivation of these examples is given in (15).

(15)   ...   CP
             /   \
        hogy   FocP
               /   \
        Bélát/kit   Foc'
        [+Op]   /   \
                  Foc⁰   ~~XP~~
                  [+Op]   / \
                         /____\
                          ...
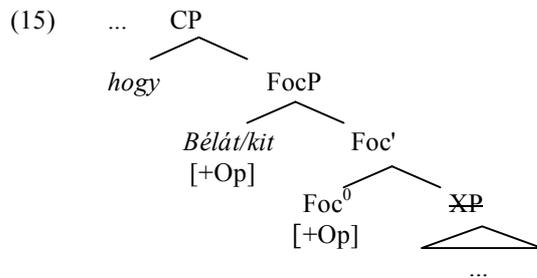
3. The argument: the *e*-suffix in Hungarian sluicing

All elements are now in place to test the predictions raised by the three accounts presented above. First of all, we have an ellipsis type (non-*wh*-sluicing) triggered by a head (Foc°) that attracts the verb in certain contexts (embedded yes/no-questions). Moreover, in those contexts this head is morphologically realized (as the *e*-suffix), thus giving us a straightforward means of detecting whether it is contained in the ellipsis site or not. Before going to the actual data, let us make explicit what predictions the various analyses introduced in section one make with respect to the *e*-suffix in non-*wh*-sluicing.

The first account assumed that what gets elided is not an XP, but rather a bar-level projection, in particular the sister of the specifier hosting the ellipsis remnant (here Foc'). This straightforwardly leads to the prediction that the *e*-suffix (which spells out Foc°) should be absent in non-*wh*-sluicing. The labeled bracketing in (16) further illustrates this. A similar prediction is raised by the second account. This one assumed that the head targeted by the verb is not identical to the one hosting the ellipsis remnant in its specifier (Foc°$_1$ and Foc°$_2$ resp. in the representation in (17)). This allows for the elision of the projection hosting the moved verb without affecting the ellipsis remnant. However, given that the verb is now in the same position as the *e*-suffix, the two get elided together.

(16)   [$_{CP}$ *hogy* [$_{FocP}$ XP-remnant [$_{Foc'}$ V+*e* [$_{VP}$ … t$_V$ …]]]]

(17)   [$_{CP}$ *hogy* [$_{FocP2}$ XP-remnant Foc°$_2$ [$_{FocP1}$ [$_{Foc1'}$ V+*e* [$_{VP}$ … t$_V$ …]]]]]

The third account, however, makes a different prediction. Given that ellipsis bleeds verb movement, the verb will remain inside the ellipsis site, but given that the *e*-suffix sits in Foc°, it should be outside of the ellipsis site. Put differently, the third account predicts that (non-*wh*-)sluicing examples should be the only context in which the *e*-suffix does not necessarily attach to the verb (or the predicate, cf. note 2). Rather, it should cliticize onto the XP-remnant in specFocP.

(18)   [$_{CP}$ *hogy* [$_{FocP}$ XP-remnant [$_{Foc°}$ -*e*] [$_{VP}$ … V …]]]

As the example in (19) shows, it is the third account that makes the correct predictions for non-*wh*-sluicing in yes/no-questions in Hungarian. A non-*wh*-sluice in a yes/no question obligatorily bears the *e*-suffix, without the verb being present, a configuration that is not allowed in full clauses (cf. (8)b-c). The fact that the *e*-suffix can attach to a non-verbal element only in elliptical contexts thus provides direct morphological evidence in support of the claim that ellipsis can bleed verb movement. The analysis of the example in (19) is given in (20).

(19)   János   meghívott   egy lányt,   de nem   tudom   hogy   ANNÁT*(-e).
        John   invited   a   girl   but not   I.know   that   Anna-Q
        'John invited a girl, but I don't know if it was Anna.'

(20)
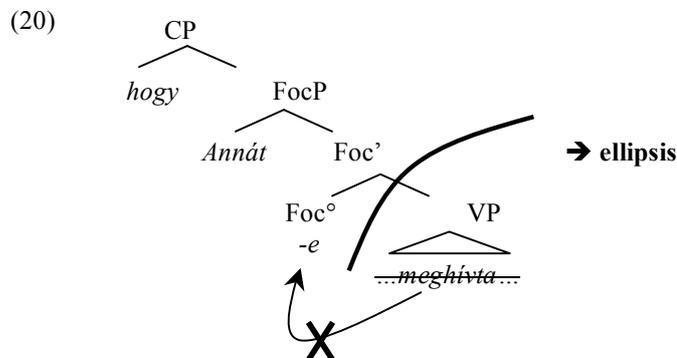
4. Corroborating evidence

Corroborating evidence for the bleeding analysis in (18) comes from further facts involving non-*wh*-sluicing in Hungarian. As van Craenenbroeck and Lipták (2006) point out, many Hungarian speakers allow non-*wh*-sluicing with one topic and one focus remnant, as the following examples shows:

(21)   Minden lány   meghívott   valakit,   de nem tudtam hogy   Mari   BÉLÁT.
        every girl   invited   someone   but not I.knew COMP   Mari   Béla
        'Every girl invited someone, but I didn't know that as for Mari, it was Béla who she invited.'

For these speakers, in the corresponding yes/no-sluice, the *e*-suffix can only be found on the second remnant that survives ellipsis. Crucially, it cannot occur on both remnants, nor can it occur on the higher, topicalized one. This is illustrated in (22).

(22) (Minden lány meghívott valakit.) Nem tudom hogy Mari(*-e) BÉLÁT*(-e).
       every girl invited someone not I.know COMP Mari(-Q) Béla*(-Q)
       lit. 'Every girl invited someone, but I don't know whether as for Mari, it was Béla who she
            invited.'

These facts are predicted by our analysis in (20), which applies to these cases in a similar fashion as to the case in (19) above. Since verb-to-Foc movement is bled in sluicing, the *e*-suffix on Foc° attaches to the focal remnant left behind in specFocP. The topic phrase on the other hand is too high for the *e*-suffix to cliticize onto. Moreover, given that there is only one Foc-head, it follows straightforwardly that there is only one *e*-suffixed remnant too.

5. An argument from Turkish sluicing

Similarly to Hungarian, Turkish also provides direct morphological evidence in favour of the hypothesis that verb movement, which is otherwise obligatory in full clauses, does not take place in sluicing. The relevant Turkish data concern the behaviour of right-peripheral tense and evidentiality morphemes under sluicing.

As Ince (2006, to appear) shows, sluiced *wh*-phrases in Turkish can be suffixed with a tense or an evidentiality morpheme. This is illustrated in (23) and (24) respectively.

(23) Dün biri sen-i ara-mış-tı, ama kim-**di** hatırla-mı-yor-um.
       yesterday someone$_{NOM}$ you$_{ACC}$ call-EVID-PST-3S but who-PST remember-NEG-PROG-1S
       'Yesterday someone called you, but I don't remember who.'
(24) A: Hasan hergün biri-ne para ver-iyor-muş. B: Kimey-**miş**?
         Hasan$_{NOM}$ everyday someone$_{DAT}$ money give-PROG-EVID-3S who$_{DAT}$-EVID
       'A: Reportedly, Hasan gives money to someone everyday. B: Who to?''

In non-elliptical clauses, however, the position of the tense/evidentiality markers changes. In these cases only the verb can be suffixed with such a morpheme. A *wh*-phrase cannot, as is shown in the following examples.

(25) Dün kim(*di) sen-i ara-mış-tı, hatırla-mı-yor-um.
       yesterday who$_{NOM}$-PST you$_{ACC}$ call-EVID-PST-3S remember-NEG-PROG-1S
       'I don't remember who called you yesterday.'
(26) Hasan hergün kimey-(*miş) para ver-iyor-**muş**?
       Hassan$_{NOM}$ everyday who$_{DAT}$-EVID money give-PROG-EVID-3S
       'Who does Hasan reportedly give money to every day?'

It is important to note that the elliptical examples in (23)-(24) are 'genuine' instances of *wh*-sluicing. In particular, they are derived from a regular embedded *wh*-question, and are not instances of reduced clefts (so-called pseudosluicing, cf. Merchant 1998). This is argued for extensively by Ince (2006) on the basis of a.o. the case morphology of sluiced and clefted *wh*-phrases, and preposition stranding facts.[3]

To account for the pattern outlined above, we start out by following Ince (2006) in the analysis of Turkish clause structure. He argues that in non-elliptical clauses the verbal head raises up to Evid°/T°, the functional head that hosts tense and evidentiality markers, like *-muş* above, and whose complement

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[3] Note that Ince nonetheless – yet somewhat misleadingly – calls the construction exemplified in (23)-(24) pseudosluicing. He uses this term to indicate that it is not IP that gets elided here, but rather some lower projection (AspP in his story, cf. infra). To avoid terminological confusion, though, we continue to refer to these data as sluicing.

is the AspP containing all other sentential material. Due to this verb movement, the tense/evidentiality markers show up on the verb in non-elliptical clauses (cf. (25)-(26)).

(27)

```
                    CP
                   /  \
           EvidP/TP     C
              /  \
               Evid'/T'
               /    \
          AspP      Evid°/T°
          /  \       -muş
    …ver-iyor…↗
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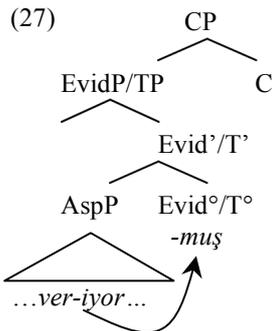
In sluicing contexts on the other hand, the distribution of the tense/evidentiality markers is different, as we noted above. We once again follow Ince (2006) in assuming that in this type of sluicing in Turkish what gets elided is AspP. This means that we have another configuration in which we can test if ellipsis can bleed head movement: there is an ellipsis process (AspP-sluicing in Turkish) triggered by a head (Evid°/T°) that is morphologically realized and to which the verb normally moves. Given that under ellipsis the head is morphologically realized, but the verb is not, is then a clear indication that ellipsis can bleed verb movement. The tree in (28) illustrates this for the example in (24).

(28)

```
                    CP
                   /  \
             Kimey_i    C'
                      /   \
              EvidP/TP      C°
                 /  \
                     Evid'/T'
                     /     \
   ellipsis ← AspP        Evid°/T°
            /  \           -muş
     … t_i … ver-iyor …
```
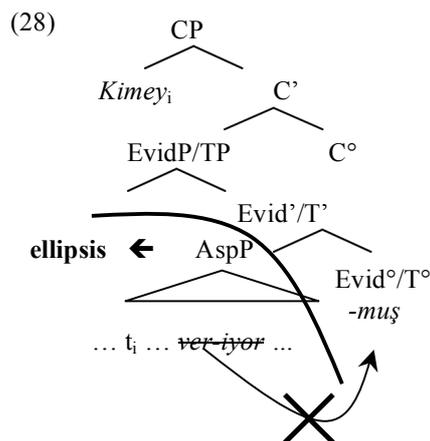
6. Further extension: ellipsis bleeding XP-movement

In this last section, we present an extension to the analysis offered above. So far we have discussed arguments pointing to the conclusion that ellipsis can bleed verb movement, a form of head movement. On closer inspection, however, this conclusion can be extended to (certain types of) phrasal movement. The argument to this effect comes from Hungarian again, from the domain of yes/no questions with non-verbal predicates.

In the absence of a finite verb, the *e*-suffix in Hungarian attaches to the non-verbal predicate. Such non-verbal predicates can be phrasal, like in the following example:

(29) Kiváncsi   vagyok, hogy   Mari   [_AP nagyon okos]*(-e).
      curious   I.am   COMP   Mari   very   smart(-Q)
      'I wonder if Mari is very smart.'

This suggests that the movement of the predicate triggered by *-e* to FocP in these examples is phrasal movement, not head movement:

(30)
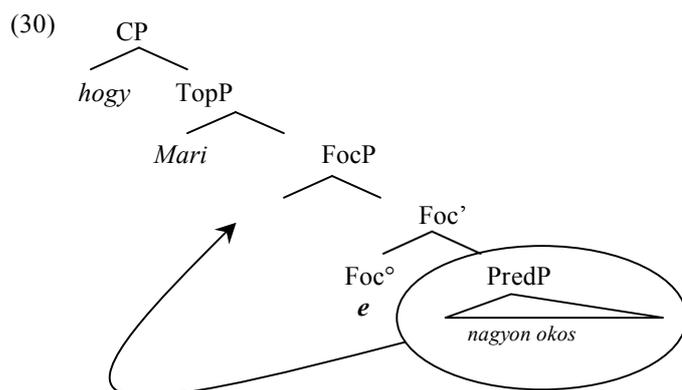
Interestingly, in yes/no-sluices the movement of PredP can also be bled by ellipsis, just like the movement of the verbal predicate. If a yes/no-question with a non-verbal predicate undergoes sluicing, the *e*-suffix shows up on the subject of predication:

(31) Valaki   az osztályból   nagyon okos.   Kiváncsi   vagyok, hogy   MARI*(-e).
      someone   the class.from   very clever   curious   I.am   COMP   Mari*(-Q)
      'Someone from the class is very clever. I wonder if it is Mari.'

Facts like this show that the XP-movement to specFocP illustrated in (30) does not take place under sluicing, thus leading to the conclusion that not only head movement, but also XP-movement can be bled by ellipsis (cf. also Baltin 2002).

7. Conclusion

This paper provided morphological evidence for the claim that ellipsis can bleed head movement. We adduced support for this from two unrelated languages: the syntax of the yes/no question marker in embedded clauses in Hungarian and that of tense/evidentiality markers in *wh*-clauses in Turkish. The position of these markers is crucially distinct in full clauses and sluicing contexts: while they obligatorily occur on the verb in the former case, they show up on the sluicing remnant in the latter. We have shown that this pattern provides the much needed empirical support for the Merchant/Lasnik-approach to ellipsis in which deletion blocks verb movement. Moreover, we have shown that certain cases of XP-movement can be bled by ellipsis as well.

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