

The cross-linguistic syntax of sluicing: evidence from Hungarian relatives

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Abstract

This paper deals with an elliptical construction in Hungarian that to our knowledge has not received any attention in the theoretical literature so far. It involves the deletion of a relative clause with the exclusion of the relative pronoun and one more remaining constituent. We show that this construction should be analysed as an instance of sluicing. The theoretical approach we provide for these sentences is an adapted version of Merchant's (2001) implementation of sluicing in terms of an [E]-feature that is responsible for the deletion process. Our extension of this proposal involves the modification of the syntactic subcontent of this [E]-feature. We show that languages where question words are found in the operator domain of the left periphery use a version of [E]-feature that attaches to heads whose specifier is occupied by an *operator*. This predicts that sluicing not only occurs with *wh*-remnants but more widely with operator remnants as well. With this proposal we lay the foundation for a cross-linguistic taxonomy of sluicing constructions, and open new avenues for explaining root/embedded asymmetries in some as yet ill-understood elliptical phenomena in English.

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word count: 10.797

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1 Introduction

The focus of this paper is a Hungarian elliptical construction in which the bulk of a relative clause is elided. As a result of this deletion process, everything but the relative pronoun and one more constituent is missing in the relative clause. We henceforth refer to this construction as relative deletion (or RD for short). A representative example is given in (1).¹

- (1) Kornél AZT A LÁNYT hívta meg, akit ZOLTÁN [e].
Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán
'The girl who Kornél invited was the one who Zoltán did.'

The non-elliptical version of this example is also well-formed:

- (2) Kornél AZT A LÁNYT hívta meg, akit ZOLTÁN hívott meg.
Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán invited PV
'The girl who Kornél invited was the one who Zoltán did.'

Our goal in this paper is to provide an analysis for the construction in (1), in which only the relative pronoun and one more constituent survive the deletion process. The paper is organised as follows. In the second section we introduce and illustrate RD somewhat further, as well as point out some restrictions on it. In section three we try to identify the type of ellipsis that is at work in RD. After having discarded VP-ellipsis and gapping as possible

culprits, we introduce the hypothesis that RD is an instance of sluicing. Section four lays the theoretical groundwork for the analysis. We start out from Merchant's (2001) implementation of sluicing in terms of the [E]-feature. We then modify the syntactic content of that feature by relativizing it across language types. As such, our account can be seen as a first step towards a cross-linguistic taxonomy of sluicing constructions. Section five contains the actual analysis of relative deletion in Hungarian, and section six discusses some of the predictions our account makes, as well as a possible extension of our proposal. Section seven sums up and concludes.

2 Hungarian relative deletion: the basic data

RD can leave behind remnants of any category and any grammatical function. The following examples illustrate non-subject remnants:

- (3) AZ A FIÚ hívta meg Esztert, aki KATIT [e].

that the boy invited PV Eszter-ACC REL-who Kati-ACC

'The boy who invited Eszter was the one who invited Kati.'

- (4) Péternek AZT A FOTÓT mutattam meg, amit ANNÁNAK [e].

Péter-DAT that-ACC the photo-ACC showed PV REL-what-ACC Anna-DAT

'The photo I showed to Péter was the one that I showed to Anna.'

- (5) AZT A FIÚT hívtam meg, aki Marival lakik,

that-ACC the boy-ACC invited PV REL-who Mari-WITH lives,

s nem AZT, aki OLGÁVAL [e].

and not that-ACC REL-who Olga-WITH

'It was the boy who lives with Mari that I invited and not the one who lives with Olga.'

As is clear from the translations of the above sentences, as well as the syntax of the matrix clause, in all these examples we find the head of the relative clause (*azt a lányt* 'that girl' in (1), *az(t) a fiú(t)* 'that boy' in (3)/(5) and *azt a fotót* 'that photo' in (5)) in the (contrastive) focus position in the matrix clause. Syntactically this is indicated by verb-preverb inversion: Hungarian contrastive focus is always adjacent to the verbal head, forcing the preverb to follow that verbal head.²

RD can also occur in sentences without focus on the relative head, however. Unlike the examples with focus above, which are accepted by everyone, focusless examples show some variation among speakers. A small percentage of more liberal speakers find the focusless versions just as good as the focused ones. The large majority of speakers on the other hand finds focusless examples degraded to some (sometimes varying) degree, with judgements ranging from ? to ?*. These speakers prefer to spell out *is* 'also, even' after the remnant in the relative clause to make the sentence fully grammatical. The addition of such an item is perfectly fine for every native speaker, also for the liberal ones who do not require this item. The importance of *is* 'also, even' is an issue we return to in section five.³

- (6) Kornél meghívta azt a lányt, akit Zoltán %(is) [e].

Kornél PV-invited that-ACC the girl-ACC REL-who-ACC Zoltán also

'Kornél invited the girl who Zoltán did (too).'

- (7) Az a fiú meghívta Esztert, aki Katit %(is) [e].

that the boy PV-invited Eszter-ACC REL-who Kati-ACC also

'The boy who invited Eszter was the one who invited Kati (too).'

(8) Péternek megmutattam azt a fotót, amit Annának [%](is) [e].

Péter-DAT PV-showed that-ACC the photo-ACC REL-what Anna-DAT also

'The photo I showed to Péter was the one that I showed to Anna (too).'

RD can occur in answer patterns to questions. (Structurally, since an answer to a *wh*-question always supplies the questioned constituent as syntactic focus, these examples are like (1)/(3)-(4) above, in that they involve focus on the head of the relative clause.)

(9) A: Kit hívtál meg?

who-ACC invited-2SG PV

'Who did you invite?'

B: Azt, akit BÉLA [e].

that-ACC REL-who-ACC Béla

'The one who Béla did.'

The examples we have discussed so far might give the impression that Hungarian RD is restricted to ACD-contexts. Specifically, in (1)/(3)-(5) the deletion process takes place in a relative clause that is itself contained inside the antecedent of the deleted structure. Moreover, on the assumption that in B's reply in (9) ellipsis of the matrix clause "I invited" has taken place (cf. Merchant 2005), that example too would contain an (albeit concealed) ACD-configuration. As the example in (10) shows, however, RD is also licensed in a non-ACD context.⁴

- (10) Nem ismerem azt, akit Zsuzsa meghívott, de ismerem azt,
 not know-1SG that-ACC whom-ACC Zsuzsa invited but know-1SG that-ACC
 akit MARI[e].
 REL-whom-ACC Mari

'I do not know the person who Zsuzsa invited, but I know the person who Mary did.'

In this sentence the elided relative clause is not contained inside its own antecedent. Instead, that antecedent is itself contained in a different sentence (in this case the first conjunct).

Summing up, in this first section we have shown that although Hungarian relative deletion mainly occurs in ACD-contexts, it is by no means restricted to such environments. Moreover, for most speakers either the head of the relative clause has to be focused, or the remnant to the right of the relative pronoun has to be modified by the particle *is* 'also, even'. As pointed out above, this is an issue we return to at length in section five. In the next section we try to identify the type of ellipsis process that is responsible for RD.

3 What kind of ellipsis is it?

3.1 Introduction

Given that the construction we are focusing on in this paper has to our knowledge not yet been discussed in the linguistic literature, it seems fair to ask whether RD represents a type of ellipsis that is *sui generis* and hence should be added to the taxonomy of elliptical constructions, or whether it can be reduced to one of the more well-known ellipsis processes. In this section we argue for the latter position. In particular, we will claim that RD is a

subtype of Hungarian sluicing. Before doing so, however, we first discard two other possible analyses.

3.2 *It is not VPE*

The most obvious elliptical category to associate RD with is without doubt VP-ellipsis.⁵ Specifically, the contexts where RD occurs are a subset of those that in English allow for VPE (cf. also the English translations of some of our RD-examples). Moreover, given that Hungarian is a language in which the main verb does not (necessarily) raise out of VP, VPE-examples are expected to look more or less like RD does: only one remnant (the subject) remains, but no verbal element does. Things change, however, as soon as auxiliaries are taken into account. Given that they occupy a VP-external head position in the clausal middle field (say, T°), they should survive the ellipsis process that is characteristic of VPE. Consider in this respect the examples in (11) and (12).

(11) Kornél meg szokta hívni azt a lányt, akit Zoltán [e].

Kornél PV HABIT invite that-ACC the girl REL-who-ACC Zoltán

'Kornél usually invites the same girl that Zoltán does.'

(12) Kornél meg szokta hívni azt a lányt, akit Zoltán szokott [e].

Kornél PV HABIT invite that-ACC the girl REL-who-ACC Zoltán HABIT

'Kornél usually invites the same girl that Zoltán does.'

In these examples we have used the habitual auxiliary *szokott*. What is interesting to note, is that this element *can* (cf. (12)) but *need not* (cf. (11)) be overtly present in the clause. In light of these data, one can take (at least) two positions. One would be to claim that both these

examples involve VPE, but that for some yet to be determined reason the auxiliary has also been elided in (11). This is the position taken by Szczegielniak (2004) when analysing similar data from Polish and Russian (cf. note 5), but it is not a hypothesis that we wish to pursue. Instead, we will argue that these two examples illustrate two independent ellipsis phenomena. Specifically, while (12) is a run-of-the-mill case of VPE, in the example in (11) a larger portion of the clausal structure has been elided, one that includes the projection headed by the habitual auxiliary. In other words, what we take these data to show is that Hungarian RD is not an instance of VPE.

A fairly straightforward argument in support of this claim comes from the fact (discussed in section one and re-illustrated below) that the remnant to the right of the relative pronoun in RD does not have to be the subject of the relative clause.

- (13) Péternek AZT A FOTÓT mutattam meg, amit ANNÁNAK [e].
 Péter-DAT that-ACC the photo-ACC showed PV REL-what-ACC Anna-DAT
 'The photo I showed to Péter was the one that I showed to Anna.'

From a VPE-perspective, this is an unexpected state of affairs. In particular, the reason why the subject does but the object does not surface in a run-of-the-mill VPE-example such as *Bill likes candy, but Mary doesn't* is because the projection that hosts the subject (say, TP) is not contained in the ellipsis site, whereas the one hosting the object is. In RD, however, virtually any XP can surface to the right of the relative pronoun. This suggests that this remnant does not survive ellipsis by virtue of being in its canonical position, but rather by virtue of moving to a high left-peripheral projection that is not contained in the ellipsis site. This too suggests that Hungarian RD deletes a larger chunk of the clausal structure than merely VP.⁶

Another indication that RD deletes more structure than does VPE concerns adverbial modification. Consider the contrast in (14)/(15).

- (14) ?? Kornél fel szokta hívni azt a lányt,
 Kornél PV HABIT invite that-ACC the girl-ACC
 akit Zoltán is naponta [e].
 REL-who-ACC Zoltán also daily
 'Kornél usually calls the girl whom Zoltán calls daily.'

- (15) Kornél fel szokta hívni azt a lányt, akit Zoltán is
 Kornél PV HABIT invite that-ACC the girl-ACC REL-who-ACC Zoltán also
 <naponta> fel szokott <naponta> [e].
 daily PV HABIT daily
 'Kornél usually calls the girl whom Zoltán calls daily.'

What these data show is that while the VPE-example (i.e. the one containing an auxiliary) can be freely combined with a frequency adverb such as *naponta* 'daily' (irrespective of whether it precedes or follows the auxiliary), such adverbial modification is dispreferred in RD. If one wishes to maintain that both these examples should be analysed as VPE, then the contrast in (14)/(15) becomes difficult to account for. Not only does one then have to assume that VPE can optionally delete not just the auxiliary but also an adverb, but on top of that, the deletion of the adverb seems to be dependent on the deletion of the auxiliary. Under the assumption that RD deletes a larger portion of the clausal structure than merely VP, however, the data in (14)/(15) follow naturally. The reason why a frequency adverb is disallowed in

(14) is because the position normally occupied by such adverbs is contained in the ellipsis site.⁷

A third argument in favour of the hypothesis that examples such as those in (11) and (12) differ in the amount of structure that is elided comes from the contrast in (16)/(17).

(16) Kornél AZT A LÁNYT hívta meg, akit Zoltán fog [e].

Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán FUT

'The girl who Kornél invited was the one who Zoltán will.'

(17) Kornél AZT A LÁNYT fogja meghívni, akit Zoltán (??fog) [e].

Kornél that-ACC the girl-ACC FUT invite-PV REL-who-ACC Zoltán FUT

'The girl who Kornél will invite is the one who Zoltán will.'

In (16) the antecedent clause and the elliptical clause differ in tense specification. In particular, while the former is past, the latter expresses future tense. In (17) on the other hand, both clauses are future. Interestingly, in this latter case the presence of the future auxiliary *fog* is slightly degraded in the elliptical relative clause.⁸ Put differently, when there is no tense contrast between the antecedent clause and the elliptical clause, RD is preferred over VPE. This is very reminiscent of a set of data discussed by Merchant (to appear) and illustrated in (18).

(18) a. They studied a Balkan language, but I don't know which [e].

b. ??They studied a Balkan language, but I don't know which they did [e].

The example in (18)a is an instance of sluicing, while (18)b represents VPE. Just as in (17), however, the auxiliary in the VPE-case does not express any contrastive information.

Merchant suggests that the deviance of (18)b is due to the fact that ellipsis tends to delete the largest possible part of the clausal structure. As a result, given that the IP-domain does not contain any contrastive (i.e. non-elidable) material in this example, it is sluicing, and not VPE that applies. It should be clear that this line of reasoning also provides strong support in favour of our hypothesis that RD deletes a larger chunk of the clausal structure than VPE does. In particular, given that in (17) the auxiliary in the elliptical relative clause does not express any contrastive information, it can be elided. This implies that an ellipsis process that deletes a larger chunk of the clausal structure is preferred over VPE here.⁹

The final argument we want to present in order to distinguish RD from VPE concerns strict and sloppy identity. As is well-known, elided VPs in English very readily allow for both strict and sloppy readings. The example in (30) shows that this also holds for Hungarian.

- (19) János szokott mesélni az anyjának arról a lányról,
 János HABIT tell-INF the mother-DAT that-ABOUT the girl-ABOUT
 akiről Béla is szokott [*e*].
 REL-who-ABOUT Béla also HABIT

- (a) 'János usually tells his mother about the girl, whom Béla also tells about to John's mother.'
 (b) 'János usually tells his mother about the girl, whom Béla also tells about to Béla's mother.'

As indicated in the English translation, the elided relative clause allows both for a reading where Béla tells János' mother (strict identity) and for one where Béla tells his own mother (sloppy identity). Interestingly, though, this does not hold for RD:

(20) János szokott mesélni az anyjának arról a lányról,

János HABIT tell-INF the mother-DAT that-ABOUT the girl-ABOUT

akiről Béla is [e].

REL-who-ABOUT Béla also

(a) 'János usually tells his mother about the girl, whom Béla also tells about to John's mother.'

(b) ??'János usually tells his mother about the girl, whom Béla also tells about to Béla's mother.'

This example differs from the one in (19) only in the absence of the habitual auxiliary in the elliptical relative clause. However, this turns out to have an effect on the interpretive options of the example. Specifically, while the strict reading is still fine, the sloppy one seems slightly degraded.¹⁰ As such, these data constitute yet another empirical difference between RD and VPE.¹¹

Summing up, it seems unlikely that RD should be analysed as an instance of VPE. First of all, there are several indications that RD deletes a larger part of the clausal structure than merely VP (adverb placement, preference for deletion of non-contrastive auxiliaries, the non-subject status of the remnant). Secondly, the two behave differently when it comes to strict and sloppy identity, and thirdly, the assumption that RD is an instance of VPE would force one to claim that VPE in Hungarian can optionally delete the auxiliary, an unwelcome result.¹² In the next subsection we discard another possible analysis for RD, i.e. gapping.

3.3 *It is not gapping*

In this section we briefly explore the hypothesis that RD is an instance of gapping. Consider the RD-example in (21) and the gapping example in (23).

(21) Kornél AZT A LÁNYT hívta meg, akit ZOLTÁN [e].

Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán

'The girl who Kornél invited was the one who Zoltán did.'

(22) János a kolbászt szereti és Mari a sajtot.

János the salami-ACC likes and Mari the cheese-ACC

'János likes salami and Mari cheese.'

In both these examples, there is an ellipsis site in the second clause which is flanked by two remnants (the relative pronoun and the subject in (21) and the subject and the object in (22)). As such, one could arguably raise the hypothesis that RD should be analysed as an instance of gapping. In spite of this parallel, however, there are also two substantial differences between the two constructions (see Bánréti 1985, 1994 for Hungarian gapping in general). The first one concerns their distribution. Consider the example in (23).

(23) ??János a kolbászt szereti és Anna azt állítja,

János the salami-ACC likes and Anna that-ACC claims

hogy Mari a sajtot.

that Mari the cheese-ACC

'It's salami that János likes and Anna claims it's cheese that Mari does.'

The example in (23) also shows that the strict locality restrictions found in English gapping (cf. Johnson 2003) are also true of Hungarian, albeit to a slightly lesser degree. English gapping is restricted to coordinated main clauses and is disallowed in subclauses. The Hungarian counterpart can to some degree occur in a variety of subclauses, but with a

degradation of grammaticality only. This makes it less plausible that RD is an instance of gapping, as we find a clear grammaticality contrast between the degraded (23) on the one hand, and the fully grammatical (21) on the other.

Secondly, the two remnants in gapping always express contrastive information with respect to two parallel XPs in the antecedent clause. For example, in (22) *János* contrasts with *Mari* and *a kolbászt* 'the salami' contrasts with *a sajtot* 'the cheese'. In RD on the other hand, the situation is different. While *Zoltán* can be said to contrast with *Kornél*, this is clearly not the case for the relative pronoun. Rather than contrasting with *azt a lányt* 'that girl', the two are coreferential. This too renders the hypothesis entertained in this section rather implausible.

Summing up, it is clear that RD is not an instance of gapping. Even though the two constructions share some superficial similarities, the general differences between them are too substantial to be ignored. In the next subsection we introduce the hypothesis that we will defend in the rest of the paper, i.e. that RD is an instance of sluicing.

3.4 *Is it sluicing?*

The hypothesis that RD is an instance of sluicing might at first sight seem as unlikely – if not more – than the one investigated in the previous subsection. Consider again a basic RD-example in (24), and compare it with the sluicing example in (25).

(24) Kornél AZT A LÁNYT hívta meg, akit ZOLTÁN [e].

Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán

'The girl who Kornél invited was the one who Zoltán did.'

(25) János meghívott egy lányt, de nem tudom kit [e].

John invited a girl-ACC but not know-1SG who-ACC

'John invited a girl, but I don't know who.'

There are two very noticeable differences between these two examples. The first one concerns the morphology of the DP-remnant next to the ellipsis site. In the sluicing case it is a [+wh]-phrase, while in the RD-example it is a proper name. The second difference concerns the distribution of these two constructions. As was pointed out by Lobeck (1995:54-62) and Merchant (2001:54-61) sluicing can only delete the IP-complement of an interrogative [+wh]-complementizer.¹³ This means that sluicing is disallowed in relative clauses (cf. in particular Lobeck 1995:57). Given that RD per definition occurs exclusively in relative clauses, the hypothesis that it can be reduced to sluicing will clearly require some extra motivation. In the remainder of this paper we provide precisely such motivation. In particular, we will argue that the type of sluicing found in a language is dependent on the type of wh-movement it exhibits. Given that the literature on sluicing has so far focused almost entirely on English,¹⁴ the general view on this construction is biased and in need of revision. As a first indication of this, consider the Romanian examples in (26) and (27) (from Hoyt & Theodorescu to appear). Hoyt & Theodorescu (to appear) discuss sluicing in Romanian, and they show that unlike in English, Romanian sluicing allows for non-wh-remnants (cf. (27)).

(26) Cineva mi-a mâncat prăjiturile, dar nu știu cine [e].

someone CL-1SG-PAST.3SG eaten cookies-the but not know.1SG who

'Someone ate my cookies, but I don't know who.'

(27) Am aflat că cineva a plecat, dar nu știu
 past.1SG learned that someone past.3SG left but not know.1SG
 dacă Ion [e].
 if Ion
 'I found out that someone left, but I don't know if it was Ion.'

If Hoyt & Theodorescu (to appear) are correct in arguing that the example in (27) represents an instance of sluicing, then it is clear that the traditional characterisation of this construction needs to be refined. Specifically, it is not the case that sluicing only deletes the IP-complement of interrogative [+wh]-complementizers, or that it only has wh-phrases as remnants. In the next section we try to arrive at a new, typologically more accurate theoretical characterisation of sluicing.

4 The theory: towards a sluicing-typology

4.1 Introduction

In this section we proceed in two steps. First, in subsection 4.2, we introduce and discuss Merchant's (2001, 2005) characterisation of sluicing in terms of the [E]-feature. In subsection 4.3 we present a modified version of this theory, which aims to capture the cross-linguistic variation found in sluicing constructions. In the next section we then apply this new theory to Hungarian RD, showing that this construction can indeed be analysed as an instance of sluicing.

4.2 Merchant (2001, 2005) and the [E]-feature

Merchant (2001:55-61, 2005:670-673) argues that the ellipsis process characteristic of sluicing should be implemented by means of a syntactic feature, which he dubs [E]. This feature is merged with the C^0 -head whose complement is to be elided, and it represents all the relevant properties which distinguish elliptical structures from their non-elliptical counterparts. This approach allows Merchant to directly link the licensing and identification requirements on ellipsis with the phonological effect of non-pronunciation. In order to see why this is the case, consider the syntactic, phonological and semantic properties of the [E]-feature in (28) (Merchant 2005:670-673; in (28)b ' ϕ_{IP} ' is the phonological representation of the IP node).¹⁵

- (28) a. the syntax of [E]: $E_{[uwh^*, uQ^*]}$
 b. the phonology of [E]: $\phi_{IP} \rightarrow \emptyset / E \text{ ___}$
 c. the semantics of [E]: $[[E]] = \lambda p : e\text{-GIVEN}(p) [p]$

The formula in (28)a represents the licensing requirements on sluicing. As was pointed out above (cf. also note 13), only the null C^0 of constituent questions allows its complement to be elided by sluicing in English. The specification in (28)a captures this intuition by stating that [E] is itself endowed with $[+wh, +Q]$ -features. Moreover, these features are marked as uninterpretable (i.e. in need of checking) and strong (marked by the asterisk), which means that they have to be checked in a local relationship, not by means of a long-distance checking mechanism such as Agree. As a result, [E] can only occur on the null C^0 of constituent questions, which in turn ensures that only the complement of this C^0 can be elided. The phonological properties of [E] are represented in (28)b. It instructs PF not to parse its

complement (or rather, the complement of the head on which it resides).¹⁶ The semantics of [E] in (28)c encodes the identification or recoverability requirement on the elided phrase. Roughly, an expression is e-GIVEN when it has an appropriate antecedent (cf. Merchant 2001:23-37 for more detailed discussion of e-GIVENness). What the formula in (28)c says, then, is that semantic composition cannot proceed if the complement of [E] is not e-GIVEN. In other words, only phrases that have an appropriate antecedent (i.e. whose content is recoverable from this antecedent) can be elided.

This concludes our introduction into Merchant's (2001, 2005) theory of sluicing. In the next subsection we propose a modification of the syntactic requirements of the [E]-feature, so as to allow for the cross-linguistic diversity found in sluicing constructions.

4.3 *Modifying the [E]-feature*

We want to argue that Hungarian sluicing differs from its English counterpart in that it is licensed in a different set of syntactic environments. It is clear that if we want to implement this variation in terms of the [E]-feature, it is the syntactic properties of this feature we will have to focus on. Specifically, there are no differences between the two languages when it comes to the phonological or semantic properties of sluicing. In both cases sluiced clauses are not pronounced and require a salient antecedent. In order to prevent our modification of Merchant's theory from becoming a pure technicality, however, it would be desirable if we could link the different syntactic specifications the [E]-feature will have in Hungarian and English respectively to independent properties of these two languages. In this respect we want to propose the following correlation:

(29) **THE WH/SLUICING-CORRELATION**

The syntactic features that the $[E]$ -feature has to check in a certain language are identical to the strong features a wh-phrase has to check in a regular constituent question in that language.

Let us consider what the consequences of this correlation are for English and Hungarian. For English, nothing much changes. Under the – fairly uncontroversial – assumption that a wh-phrase in a regular constituent question has to check strong $[+wh,+Q]$ -features (say, operator and clause typing features, cf. Van Craenenbroeck 2004:31-51 for detailed discussion), the WH/Sluicing-correlation predicts that the syntactic requirements of $[E]$ should be exactly as outlined in (28)a. For Hungarian, however, the situation is quite different. As is well-known, Hungarian wh-movement does not target specCP, but rather a focus position in the high middle field of the clause (specFocP) (cf. É. Kiss 1987; Bródy 1995). This means that the only strong feature a wh-phrase checks in a Hungarian constituent question is $[+focus]$, or more generally $[+Op(erator)]$. Accordingly, the syntactic requirement of $[E]$ in Hungarian should not be as in (28)a, but rather as in (30).

(30) the syntax of $[E]$ in Hungarian: $E_{[uOp*]}$

This implies that in Hungarian $[E]$ is not only fully licensed when it resides on a head the specifier of which is occupied by a moved wh-phrase (as in English), but rather in every syntactic context where an operator/variable-dependency is created. In the next section we show how this claim can account for the fact that Hungarian does, but English does not allow for RD, but as a first illustration of a prediction made by the formula in (30), consider the example in (31).

- (31) János meghívott valakit és azt hiszem hogy BÉLÁT [e].
 János invited someone-ACC and that-ACC think-1SG that Béla-ACC
 'János invited someone and I think it was Béla he invited.'

In this example the ellipsis of IP is licensed not by a wh-phrase, but rather by a non-wh focus (cf. also the Romanian example in (27)). Given that such an element checks an operator feature in specFocP, the formula in (30) correctly predicts that the complement of Foc^0 can be elided. The fact that such non-wh sluicing is not allowed in English is due to the fact that the [E]-feature has more stringent syntactic requirements in this language, requirements that can only be checked by a wh-phrase in a constituent question.

4.4 *The bigger picture: three types of sluicing*

In the previous subsection we have argued that there is a correlation between the type of wh-movement attested in a language and the type of sluicing it exhibits. If we extrapolate this hypothesis to a wider range of languages, we arrive at the following tentative typology of sluicing constructions.

(32) **Typology of wh-movement and sluicing constructions**

type of wh-movement	syntactic properties of the [E]-feature	sample languages
movement to specCP	$E_{[u_{wh}^*, u_Q^*]}$	English, Dutch, German
movement to specFocP	$E_{[u_{Op}^*]}$	Hungarian, Spanish, Basque, Greek, Polish, Russian
wh-in-situ	(no sluicing)	Korean, Japanese, Chinese

In this taxonomy there are three types of languages. The first two (exemplified by English and Hungarian) have already been discussed above. The third one concerns *wh-in-situ* languages. In these languages a *wh*-phrase in a constituent question does not check any strong features. Accordingly, it is not possible to determine the syntactic requirements of the [E]-feature in these languages and sluicing is predicted not to occur. This conclusion accords nicely with the growing body of literature on sluicing-like constructions in languages like Japanese and Korean, which claims that these constructions are in fact derived from clefts, not from *wh*-questions (cf. esp. Fukaya & Hoji 1999 for discussion).

It should be clear that the classification in (32) represents a research program the scope of which extends well beyond this paper. In particular, each language should be classified according to the type of *wh*-movement it exhibits and this classification should be cross-referenced against the types of (clausal) ellipsis attested in these languages. Interestingly, our first preliminary explorations suggest that the general approach is on the right track.¹⁷ Not only do the East-Asian *wh-in-situ* languages fit in nicely, Polish and Russian seem to pattern like Hungarian. In particular, both these languages display *wh*-movement to a clause-internal focus position, and both of them have an elliptical construction that is to a remarkable extent similar to Hungarian RD.¹⁸ In this respect, it is particularly interesting to see that Grebanyova (to appear) when discussing sluicing in Russian independently from the present paper arrives at the conclusion “that not only an interrogative C° can license IP-deletion, but a focus head (Foc°) can do it as well (...). Thus, not only CP occupants can survive this deletion process.” As pointed out above, though, we leave the further fleshing out of this research program as a topic for future work.¹⁹

5 The analysis: RD as sluicing

5.1 *The syntax of sluicing in Hungarian*

According to our proposal, Hungarian sluicing can occur in every syntactic context where an operator/variable-dependency is created, due to the [μ Op*] specification of the [E]-feature in this language. This specification results in two important differences between English sluicing on the one hand and Hungarian sluicing on the other.

Firstly, from this hypothesis it follows that complements of functional heads whose specifier hosts operators can freely undergo sluicing in Hungarian. There are two types of functional projections that host operators in the left periphery: the unique FocP projection, which either hosts a contrastive focus or a wh-item, and DistPs, which host distributive quantifiers. This means that sluicing is predicted to occur not only in constituent questions, leaving behind a question word as remnant, but also in indicative clauses, leaving behind a focused phrase or distributive quantificational items. Example (31) from section 4.3 (repeated below as (33)a) provides an example with a focused remnant, and (33)b with a quantificational one:

(33) a. János meghívott valakit és azt hiszem, hogy BÉLÁT [e].

János invited someone-ACC and that-ACC think-1SG that Béla-ACC

'János invited someone and I think it was Béla whom he invited.'

b. Tudtam, hogy János meghívott néhány embert,

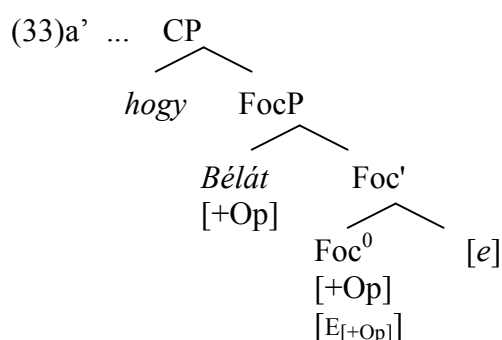
knew-1SG that János PV-invited some people-ACC

de nem tudtam, hogy mindenkit [e].

but not knew-1SG that everyone-ACC

'I knew that János invited some people, but I didn't know that he invited everyone.'

The specification of the [E]-feature as [*uOp**] can account for these examples in the required manner. To illustrate, take (33)a. The uninterpretable and strong operator feature on [E] requires that [E] attaches to the head that entertains a local relationship with an operator constituent (the focused item), namely *Foc*⁰. As a result of [E] merging here, the complement of *Foc*⁰ is PF-deleted, and the only surviving phonological material in the elliptical clause is the complementizer *hogy* 'that' and the focus *Bélát* 'Béla-ACC'. The derivation of this example can be represented as in (33)a':



The same configuration can be found in (33)b, with *DistP* taking the place of *FocP*.

The second consequence of our proposal concerns the amount of structure contained in the ellipsis site. The difference with English here follows from the syntactic properties of left

peripheral functional projections in Hungarian. Since complementizers in Hungarian do not have strong operator features (i.e. they do not host overt operators in their specifier, see É.Kiss 1987, Bródy 1995 among others), the [E]-feature does not relate to the complementizer layer in this language in any way. This results in the fact that Hungarian sluicing affects a lower section of the left periphery, the section which is embedded under the complementizer layer. This is why the remnant in Hungarian can be preceded by an overt complementizer, as was the case for example in (33)a,b.

Even more importantly from our present perspective, the fact that the complementizer layer is not involved in the mechanism of sluicing also means that sluicing is not restricted to just the sole clause type where questions can occur, but that it can be found in other types of clauses as well. This, we want to claim, is exactly what gives rise to RD: in RD we have sluicing in a non-argumental embedded clause, i.e. a relative clause. The complementizer layer of relative clauses only differs from that of argumental embedded clauses in that it contains a relative pronoun instead of a finite complementizer. This, however, is immaterial to whether sluicing can succeed, as sluicing is completely ‘blind’ to the complementizer layer in Hungarian. Relative clauses, just like argumental clauses, contain FocP and DistP operator positions in the left periphery (Kenesei 1994), and thus can license sluicing of the complements of these projections. The feature specification of [E] introduced in (30) thus captures the facts of RD as well, without any extra assumption. In the following two subsections, we show in more detail how.

5.2 *RD with focused remnants*

Let us start our analysis with the cases of RD in which the head of the relative clause is focused, as in (1), repeated here as (34):

(34) Kornél AZT A LÁNYT hívta meg, akit ZOLTÁN [*e*].

Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán

'The girl who Kornél invited was the one who Zoltán did.'

As we indicate through the use of small caps, the remnant item (*Zoltán*) in this RD construction is focused (cf. also note 2). That the remnant is a focused item can not only be seen from the fact that it necessarily receives focal stress/pitch accent, characteristic of preverbal focus, but also from the fact that the non-elliptical version of the same sentence (which has the same interpretation as (34)) obligatorily contains preverb-verb inversion in the relative clause, a syntactic indicator of focusing:

(35) Kornél AZT A LÁNYT hívta meg,

Kornél that-ACC the girl-ACC invited PV

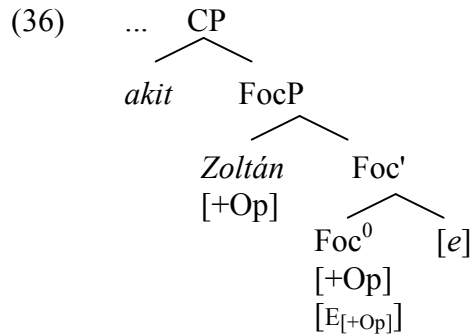
akit ZOLTÁN hívott meg / *meghívott.

REL-who-ACC Zoltán invited PV / PV-invited

'The girl who Kornél invited was the one who Zoltán did.'

Our analysis accommodates the focused nature of the remnant here in the same way as it did in the case of (33)a. The focused remnant (*Zoltán*) is an operator constituent, which is left behind when sluicing applies to the relative clause as a result of [E] merging with the Foc^0

head that hosts the remnant in its specifier. The structure of this sentence, which is shown in (36), is exactly the same as the one in (33)a'. The only difference we find concerns the lexical content of the CP domain: in (36) we have a relative pronoun instead of a finite complementizer.



As we indicated in section two, if the remnant occurs on its own, unadorned with the particle *is* 'also, even', the majority of speakers requires that the relative clause head in the matrix clause be focused as well. Without focus on the relative clause head, these speakers find the sentence degraded or unacceptable:

- (37) %Kornél meghívta azt a lányt, akit ZOLTÁN [e].
 Kornél PV-invited that-ACC the girl-ACC REL-who-ACC Zoltán
 'Kornél invited the girl who Zoltán did.'

We believe this follows from our treatment of (35) as well, most notably from the fact that we assign focus status to the remnant constituent. To see why this is the case, we need to step back from sluicing for a minute and introduce the phenomenon of *focus percolation* that characterizes Hungarian relative clauses in general, both headed and headless ones. What we refer to as focus percolation boils down to the fact that the interpretation and syntactic distribution of Hungarian relative clauses is sensitive to whether they *contain* a focused

constituent or not. If a relative clause contains a focus element, the relative clause as whole (in case of free relatives) or the modified head (in case of headed relatives), strongly prefers to be focused as well. We illustrate this phenomenon with a headed relative in (38).

- (38) a. ??János megette azt a levest amit MARI készített el.
 János PV-ate that-ACC the soup-ACC REL-what-ACC Mari prepared PV
 'János ate the soup that MARI prepared.'
- b. János AZT A LEVEST ette meg amit MARI készített el.
 János that-ACC the soup-ACC ate PV REL-what-ACC Mari prepared PV
 'It was the soup that MARI prepared that János ate.'

As can be seen in these examples, the presence of focus on *Mari* within the relative clause forces the presence of focus *on the head of the relative clause* as well: the fully grammatical example has *azt a levest* 'that soup' in the focus position in (38)b, interpreted as contrastive focus as well. Without focus on the head of the relative, the sentence becomes considerably degraded, as (38)a shows.²⁰

Returning to the analysis of RD, focus percolation now provides an explanation for the pattern in (3)-(5) and that in (34): it is focus on the remnant element that forces the obligatory focus on the relative clause head as well in these examples. The remnant is required to be focused, because sluicing/the [E]-feature is licensed only in operator-variable constructions, and in these examples it is a focused remnant that provides the licensing operator for sluicing. The focused nature of the remnant is then passed on to the whole relative clause via the standard mechanism of focus percolation, which explains why the head of the relative also behaves as syntactic and semantic focus itself.

Focus percolation, we contend, also underlies the subtle speaker variation that we found in the domain of RD. The minority of speakers who accept unadorned remnants without focusing the head of the relative clause (i.e. for whom (37) is a grammatical example), tend to be the speakers who allow for the relaxation of focus percolation. For this set of speakers, the presence of a focus internal to the relative clause does not strongly entail that the head of the relative clause also be focused: these speakers judge examples like (38)a grammatical in many contexts. As a result, these speakers can accommodate focused remnants in RD in relative clauses that are found in neutral clauses as well.

In this section we accounted for examples of RD with an unadorned remnant. We argued that such remnants are always focused items and license sluicing, as predicted by our analysis, given that focus is an operator-variable construction. We also explained why for the majority of speakers these examples involve focus on the head of the relative, too, linking this to the independent phenomenon of focus percolation that exists in Hungarian relative clauses. In the next subsection we turn our attention to the RD with remnants that are followed by an *is* 'also, even' particle.

5.2. RD with *is* 'also, even'-marked remnants

As (6)-(8) illustrated, when RD occurs inside a relative clause the head of which is not focused, the majority of speakers prefer to spell out *is* 'also, even' after the remnant. Consider (6) again, repeated below.

- (39) Kornél meghívta azt a lányt, akit Zoltán [%](is) [e].
 Kornél PV-invited that-ACC the girl REL-who-ACC Zoltán also
 'Kornél invited the girl who Zoltán did (too).'

The prediction made by the current theory with respect to examples such as the one in (39) is clear. Specifically, if Hungarian RD is indeed an instance of sluicing licensed by a $[+uOp^*]$ -marked $[E]$ -feature, then *is*-phrases should be syntactic operators as well. As we will show below, this prediction is borne out.

The quantificational nature of *is* 'also, even'-marked items manifests itself in various ways in the grammar of Hungarian. First of all, distributional facts indicate that *is*-phrases occupy a specific position in the so-called "quantifier field" of the left periphery, to the left of focused constituents and other quantificational items (Kenesei 1986, Brody 1990 and Szabolcsi 1997). We will refer to this position as $\text{specDist}_{is}P$, and we take *is* to spell out the functional head Dist_{is}^0 , following Brody (1990). Apart from their characteristic placement among quantifiers, the operator status of *is*-phrases can clearly be seen in parasitic gap licensing facts as well. Parasitic gaps are only licensed by operator-variable relations in Hungarian (É.Kiss 2001). The fact that *is*-phrases, just like focused items, license these (cf. (40)a,b) indicate that they instantiate an operator-variable relationship.

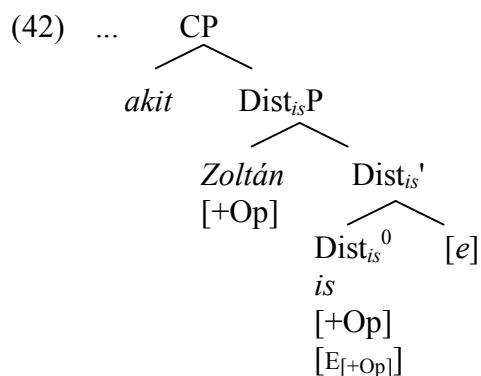
- (40) a. János a könyveket is_i eldobta t_i [mielőtt elolvasta volna pg_i].
 János the books-ACC also PV-threw-3SG before read-PAST-3SG COND
 'János also threw the books away before reading.'
- b. A KÖNYVEKET $_i$ dobta el János t_i [mielőtt elolvasta volna pg_i].
 the books-ACC threw-3SG PV János before read-PAST-3SG COND
 'It was the books that János threw away before reading.'

The last argument we provide for the quantificational/operator nature of *is* 'also, even' phrases comes from their interpretation: *is*-phrases are obligatorily distributive in Hungarian, as shown in the examples in (41) (Szabolcsi 1997):

- (41) a. Péter *is* felemelte az asztalt.
 Péter also lifted the table-ACC
 'Péter also lifted the table (on his own/*together with others).'
- b. Hat fiú *is* felemelte az asztalt.
 six boys also lifted the table-ACC
 'As many as six boys lifted up the table (separately/*collectively).'

Péter is 'Péter, too' in (41)a cannot be interpreted as 'Péter being part of a group of people who lifted the table', and similarly, *hat fiú is* 'as many as six boys' cannot receive a collective interpretation. As Szabolcsi argues, obligatorily distributive elements are restricted to the quantificational field in Hungarian (termed DistP projections) because they are essentially quantificational in nature.²¹

With the operator nature of *is*-expressions firmly established, we can now return to the analysis of *is*-marked remnants in RD. Given that the *is*-phrase is an operator, our proposed account is applicable here as well, along the same lines as the analysis of focused remnants in (36) above. The [E]-feature responsible for sluicing attaches to the syntactic head whose specifier hosts the operator phrase and licenses the deletion of everything else in its complement. The resulting configuration of our sluicing example is shown in (42).²²



This configuration readily explains why many speakers require *is* to be spelled out if the head of the relative clause is not focused (cf. examples (6)-(8) above). Recall that for these speakers, focus percolation is obligatory, which means that if the head of the relative clause is not focused, there cannot be a focus inside the relative clause (otherwise this focus would percolate). This entails that in cases where the head of the relative is not focused, the remnant is not a focus constituent. Since sluicing is only licensed with operator remnants, however, the operator status of the remnant needs to be ensured by other means. Spelling out the quantificational *is* particle does exactly this job: it turns the remnant into an operator constituent and thus licenses sluicing. This is why speakers require the presence of *is* in these contexts.

Our analysis of sluicing in terms of an [E]-feature with [μ Op*]-content seems to make the right predictions for the RD facts discussed so far: sluicing in relative clauses is restricted to cases in which the remnant is an operator: a focus or an *is*-phrase. Note by the way that ordinary universal quantifiers, inhabitants of DistP positions, are also allowed in RD constructions, just like *is* phrases are. The following specimen of RD contains a run-of-the-mill universal quantifier as remnant:

(43) Péter AZT hívta meg, akit mindenki [e].

Péter that-ACC invited PV REL-who everyone

'The person Péter invited was the person who was invited by everyone.'

Again, sluicing in this relative clause is licensed by the operator nature of the remnant *mindenki* 'everyone', just as in the argumental embedded clause in (33)b.

Summarizing, in this section we presented an analysis of RD in Hungarian with the help of our new taxonomy of sluicing constructions. We have successfully shown that in this language, where the overt syntax of wh-movement coincides with that of other operator material like focus, *is*-phrases and universal quantifiers, sluicing is also allowed with these other types of operators in both argumental and non-argumental clauses. This concludes our analysis of RD in terms of sluicing. In the following section, however, we discuss some further correct predictions made by our account.

6 Further predictions and extensions of the analysis

6.1 Introduction

This section serves a double purpose. On the one hand, we want to examine some further predictions our analysis makes with respect to RD in Hungarian. Specifically, we will show that topics and speaker-oriented adverbs, which are not syntactic operators and hence unable to license [E], are not licit RD-remnants. On the other hand, however, we want to briefly explore to what extent our analysis can shed new light on elliptical processes such as stripping or fragment answers in a language like English. Though that part of the discussion will be more tentative, the potential benefits, we will argue, are substantial.

6.2 *Topics and speaker-oriented adverbs in Hungarian RD*

The previous two sections have argued that modifying the feature content of Merchant's (2001) [E]-feature neatly allows us to account for the observed patterns of RD in Hungarian. As we show in this section, the proposal successfully covers other data in the domain of RD as well.

The first such set of data concerns the impossibility of sluicing with topic remnants. Topics are left peripheral constituents that precede operators in DistP and FocP in Hungarian (É.Kiss 1987, Brody 1995, Szabolcsi 1997), according to the following schematic structure:

$$(44) \quad [_{CP} \quad [_{TopP^*} \text{ topics} \quad [_{DistP^*} \quad [_{FocP} \quad [\quad \dots \quad]]]]]$$

Topics are necessarily referential constituents that have no operator properties. They do not interact scopally with other constituents in the clause (they always take highest scope in a sentence), and they do not license parasitic gaps either (cf. (45) compare (40)a,b above).

$$(45) \quad * \quad \text{János} \quad a \quad \text{könyveket}_i \quad \text{eldobta} \quad t_i \quad [\text{mielőtt elolvasta} \quad \text{volna } pg_i].$$

János the books-ACC PV-threw-3SG before read-PAST-3SGCOND

'János threw away the books before reading.'

If we are right in saying that RD is an instance of sluicing under a [μ Op*]-specified [E]-feature, we predict that topics are not available remnants in RD in Hungarian, not being operators. This prediction is borne out.

To show that topics cannot be the sole remnants in sluicing constructions, we need to turn to matters of pronunciation. A clear difference between topics and foci lies in their accentual properties: foci obligatorily receive focal stress/pitch accent, while topics do not. Using this property we can test whether a remnant can be topic, by leaving it without pitch accent. This, however, is not licit in RD. Our initial example from (1), (repeated below as (46)) is ungrammatical if a (lexically non-quantificational) remnant has no pitch accent (indicated here by even accentuation on *akit* 'who' and *Zoltán* and all main clause material):

(46) *'Kornél 'meghívta 'azt a 'lányt, 'akit 'Zoltán [e].

Kornél PV-invited that-ACC the girl-ACC REL-who-ACC Zoltán

'Kornél invited the girl who Zoltán did.'

This shows that *Zoltán* cannot be a topic constituent: if it was, it could stay non-accented, contrary to fact.

Next to matters of pronunciation we can also resort to other means to show that topic-like constituents cannot be remnants. Demonstration for this comes from the distribution of adverbs. In Hungarian evaluative speaker-oriented adverbs show characteristics of topics both in positioning and in accentuation: they occur as high as topic constituents and are necessarily unstressed. Consider such an evaluative adverb in (47).

(47) Péter biztosan AZ AUTÓJÁT vezette.

Péter surely the car-POSS.3SG-ACC drove

'It was surely his car that Péter drove.'

In (47) we see that when *biztosan* 'surely' occurs to the left of material that is contained in a focus projection, only the speaker-oriented interpretation is available to it. When this adverb is the focus itself, the speaker-oriented interpretation ceases to be available and the adverb is interpreted as a manner adverb (É.Kiss 1992). This is shown in (48).

(48) Péter BIZTOSAN vezette az autóját.

Péter-NOM confidently drove the car-POSS.3SG-ACC

'Péter drove his car confidently.' /*'It was sure that Péter drove his car.'

The clear interpretive contrast between (47) and (48) is an ideal testing ground for finding out which of these two positions are available to this item when it occurs as the remnant in RD. As (49) shows, in RD contexts only the manner adverb reading is possible.

(49) AZ vezet jól, aki BIZTOSAN.

that drives well REL-who confidently

'The person who drives well is the one who drives confidently.'

*'The person who drives well is the one who surely drives.'

The fact that the speaker-oriented interpretation is unavailable indicates that RD does not allow for its remnant to be placed as high as topics. This is in accordance with our claim that

sluicing is licensed by operator material, which occurs lower than topics in the left periphery.²³

The fact that sluicing affects a lower portion of the clause than the position of topics in turn predicts that it should be possible to find cases of RD in which the operator that licenses sluicing is preceded by a topic. Such cases of multiple remnants can indeed be found, as we anticipated in note 7 above:

- (50) ? Kornél AZT A LÁNYT hívta meg, akit Zoltán TEGNAP [e].
 Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán yesterday
 'The girl who Kornél invited was the one who Zoltán invited YESTERDAY.'

The relative clause in this case contains three elements: the relative pronoun, the topic *Zoltán* and the focus operator *tegnap* 'yesterday'. It is the focused element that licenses sluicing. The other two preceding it are found in a position higher than that affected by sluicing and thus escape deletion. As the ?-mark shows, such multiple constituent sluices are slightly less preferred to single-remnant sluices, but they are by no means ungrammatical. We take this as evidence for our claim that sluicing in Hungarian affects the lower, operator portion of the left periphery in this language and leaves the higher regions of the left periphery untouched.

6.3 *Stripping and fragment answers*

Although English differs from Hungarian in that it does not allow RD – i.e. it does not allow the complement of an operator-related head to be elided in a relative clause, cf. (51) – in main clauses it has two constructions which seem to show certain parallels with the Hungarian data we have been discussing so far. Consider the examples in (52) and (53).

(51) * John gave the same book to Mary that TO BILL [e].

(52) John talked to Mary yesterday and Bill [e] too.

(53) Q: What did Carlos eat?

A: Two bananas [e].

The sentence in (52) illustrates a construction usually referred to as stripping, while the reply in the dialogue in (53) can be said to be a fragment answer. What is interesting about these data from the perspective of the present paper, is that both constructions seem to involve a pattern that is highly similar to the one we have described for Hungarian RD: a non-wh focused XP is found next to a clausal ellipsis site. In fact, this is precisely the analysis Merchant (2003, 2005) argues at length for when discussing these constructions. The crucial difference with the Hungarian data appears to be that both stripping and fragment answers are categorically excluded in embedded clauses.

(54) * John talked to Mary yesterday and I think that Bill [e] too.

(55) Q: What did Carlos eat?

A: * I think that two bananas [e].

In light of these data one could be tempted to give up the idea of a unified account for Hungarian RD (i.e. sluicing) on the one hand and stripping/fragment answers on the other. That is not the tack we will take, however. In particular, we believe that the specific implementation we have proposed for the cross-linguistic variation of sluicing constructions, allows for enough leeway to incorporate data such as those in (52)-(55). Space considerations prevent us from going into this issue in detail here, but we want to sketch two possible

scenarios such an analysis could take. We hope to be able to give a more detailed account of these data in future work.

One way to incorporate the main clause restriction on stripping and fragment answers is to modify the syntactic feature requirement of the [E]-feature in English slightly. Consider again the requirement we arrived at in section 4.2, repeated below.

(56) the syntax of [E] in English: $E_{[u_{wh}*, uQ*]}$

The [E]-feature in English has to check both an operator and a question feature in order to be fully licensed. As pointed out above, this implies that only the complement of the C° -head the specifier of which hosts a fronted wh-phrase can license sluicing. Suppose, however, that we replace the [+Q(uestion)]-feature with a more general clause typing feature.²⁴ For embedded clauses, this would arguably not make much of a difference. In embedded contexts, clause typing is linked to selection, and although there are verbs that select an interrogative as complement, there are no verbs that select a CP in which a focus has been fronted. In main clauses, however, the situation is different. There, non-wh fronted XPs can serve to mark a declarative clause (this is particularly clear in a V2-language like Dutch). As such, the main vs. embedded asymmetry of ellipsis processes in English-type languages would fall out from the modified feature content of the [E]-feature.

Another option would be to leave the syntactic requirement of the [E]-feature in English-type languages as is (i.e. as in (56)) and to derive the main versus embedded asymmetry in these languages from the properties of wh-movement, in accordance with the wh/sluicing-generalization in (29). Recall that that principle states that the syntactic requirements of the [E]-feature in a particular language depend on the strong features a wh-phrase checks in a regular constituent question in that language. Suppose, however, that such a correlation is not

refined enough. In particular, if in a certain language the landing site of *wh*-phrases differs in main and embedded constituent questions, then the feature specification of the [E]-feature should reflect this difference. Interestingly, Den Dikken & Giannakidou (2002) and Den Dikken (2003) argue for precisely such a difference in English. Specifically, based among others on word order facts and the distribution of *wh*-the-hell, they claim that while in English embedded constituent questions *wh*-phrases move all the way to specCP, in matrix questions they remain in specFocP.²⁵ If we extrapolate this to the syntactic requirements of the [E]-feature in English, we obtain the following picture.

- (57) a. the syntax of embedded [E] in English: $E_{[uwh^*, uQ^*]}$
 b. the syntax of main clause [E] in English: $E_{[uwh^*]}$

In other words, in embedded questions [E] has to check both a question and an operator feature (represented in (57)a as [+Q] and [+wh] respectively), but in matrix *wh*-questions it only checks an operator feature. That implies that – like Hungarian-type languages – English main clauses allow for more elliptical constructions than embedded ones do, i.e. the present line of reasoning is able to account for the contrast between (52)/(53) and (54)/(55).

Summing up, although the two scenarios sketched above leave many questions unanswered,²⁶ it should be clear that the possible gains of this approach are substantial. In particular, if our approach is on the right track, it paves the way for a unified theory of ellipsis that incorporates not only the cross-linguistic diversity of sluicing, but also related constructions such as stripping and fragment answers.

7 Summary

In this paper we have extended the empirical domain of sluicing constructions by analyzing new data from Hungarian, in which sluicing affects the content of a relative clause and leaves behind an operator remnant. In doing so we proposed an analysis that takes after that of Merchant (2001, 2005) but is crucially new in some respects. Our basic innovation lies in the relativization of the feature content of [E], the feature responsible for the deletion process, to other properties of a given language, most notably to the feature content of wh-phrases in questions. Earlier proposals assumed a cross-linguistically uniform specification for the [E]-feature in terms of [+wh,+Q] subfeatures, designed to restrict the occurrence of sluicing to question clauses with a null complementizer in English. We have shown that this feature specification is insufficient for languages where sluicing involves non-wh-remnants and can involve overt complementizers of various sorts, as is the case in languages whose syntax treats question words and other operator material alike in placing these into lower left-peripheral positions. Modifying the feature content of the [E]-feature to the feature(s) checked by wh-items in a given language allowed us to neatly account for the Hungarian facts without any further assumptions. The new taxonomy of sluicing constructions we proposed by this modification provides a simple tool for predicting cross-linguistic variation in sluicing constructions as well, both when it comes to the type and to the structural positions occupied by the remnants. These results also have welcome consequences for the analysis of sluicing-type phenomena in English as well. We showed that the modified [E] feature opens a new possibility in accounting for hitherto problematic embedded/root asymmetries in the availability of stripping and fragment answers in English.

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Notes

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¹ The notation and abbreviations in the glosses are as follows: ACC = accusative case; DAT = dative case; CL = clitic; COND = conditional marker; HABIT = habitual marker (auxiliary); PV = preverb(al element); REL = relative morpheme; PAST = past tense morpheme; POSS = possessive morpheme; 1/2/3/SG/PL = person/number features. Nominative case is not glossed throughout. Small capitals indicate focus.

² As for the focus on the remnant to the right of the relative pronoun, cf. section five below.

³ It is interesting to note that a similar effect has been observed (by Vanden Wyngaerd & Zwart 1991) for English VP-ellipsis in ACD-contexts, cf. (i). We leave the analysis of such examples as a topic for further research.

(i) Philby suspected Angleton, who Dulles did [e] *(?as well).

⁴ What the examples in (1)/(3)-(5) do show, however, is that unlike in English ACD, the head of the relative clause hosting the ellipsis does not have to be quantified in Hungarian. As this is an issue the scope of which clearly extends beyond this paper, we leave it open here.

⁵ In this respect, it is interesting to note that Szczegelnik (2004) discusses a similar construction in Polish and Russian, and assumes without discussion that it is an instance of VP-ellipsis. We hope to return to Szczegelnik’s work, and to a detailed comparison of Hungarian, Polish and Russian in future research. For the properties of VP-ellipsis in Hungarian, see Bartos (2000).

⁶ Note that the example in (13) cannot be an instance of pseudogapping either (Jayaseelan 1990), as pseudogapping only marginally allows for multiple remnants (cf. Takahashi 2004) (and even not at all – as far as we know – when one of those remnants is a relative pronoun).

⁷ Note that we are abstracting away here from cases in which the adverb itself is in a focus position. Then the order remnant < adverb is possible in RD (cf. (i)). As will become clear in section six, though, this is exactly what our analysis would predict.

(i) ? Kornél AZT A LÁNYT hívta meg, akit Zoltán TEGNAP [e].

Kornél that-ACC the girl-ACC invited PV REL-who-ACC Zoltán yesterday

'The girl who Kornél invited was the one who Zoltán invited YESTERDAY.'

⁸ The exact same kind of slight degradation is also present in example (23) above. There we glossed over this fact for ease of exposition.

⁹ It is not clear whether the deviance of (17) and (18)b is really a matter of grammaticality, or merely a sort of redundancy effect. For the argument we are constructing here, however, this does not matter much. What is relevant is that we find the English contrast in (18) replicated in Hungarian in (16) vs. (17), thus making more plausible the analysis of the Hungarian facts that we are pursuing.

¹⁰ Not all speakers find the contrast between (19) and (20) equally strong. At present we do not have an account for this variation.

¹¹ Anticipating somewhat the discussion that will follow, it is also worth noting that Merchant (2001:8-9n2) points out that sluicing, in contrast to VPE, does not readily allow for sloppy readings. Given that we will try to assimilate Hungarian RD to sluicing, this is an interesting parallel.

¹² As we mentioned in the beginning of this section, when there is no auxiliary present and the remnant to the right of the relative pronoun is the subject, RD-examples are homophonous with instances of VPE. Given that such examples do not allow for adverbial modification or sloppy readings, they present another indication that (a principle such as) MAXELIDE is indeed operative in Hungarian.

¹³ In English, only the null C^0 found in constituent questions qualifies as such.

¹⁴ A notable exception is Merchant 2001, who discusses sluicing data from a wide variety of languages. However, given that within these languages he only focuses on sluicing in constituent questions, the bias towards the [+wh]-variant of sluicing remains.

¹⁵ Note that, strictly speaking, the licensing requirements in (28) are those of $[E_s]$, i.e. the variant of the $[E]$ -feature found in sluicing. Other elliptical constructions, such as VP-ellipsis, obviously have other licensing requirements. Given that we are only dealing with sluicing here, we abstract away from this refinement.

¹⁶ Note that we will be assuming throughout this paper that Hungarian RD should be analysed as PF-deletion of a fully-fledged syntactic structure. For extensive argumentation, cf. Van Craenenbroeck & Lipták 2005.

¹⁷ The only potential problem we know of at this point is Hebrew. This language has wh-movement to specCP in constituent questions, but apparently allows for a kind of RD. Thanks to Idan Landau (p.c.) for pointing this out to us. We hope to return to Hebrew in future research.

¹⁸ Cf. Szczegielniak (2004). Recall from note 5 above that we do not follow Szczegielniak in analyzing this

construction as VPE. The only difference that we have encountered so far between Polish and Hungarian is the fact that in Polish, RD does seem to be restricted to ACD-contexts (cf. example (10) and surrounding discussion).

¹⁹ Another question raised by our taxonomy of sluicing constructions concerns multiple wh-languages. Specifically, if Rudin (1988) is correct in assuming that in a language like Bulgarian, one wh-phrase moves to specCP, and all the other to specFocP, one can wonder what the syntactic feature specification of the [E]-feature will be in such languages.

²⁰ We are not aware of any analysis of focus percolation phenomena in the syntactic/semantic literature. While we do not attempt to give one here, either, we would like to point out that the phenomenon seems to us to be partly semantic in nature. The percolation property of Hungarian relative clauses is reminiscent of quantifier scope phenomena in English free relative clauses that were discussed by Moltmann and Szabolcsi (1994). Consider in this respect the example in (i).

(i) Some professor or other read what every boy read.

In this example, the relative clause internal universal quantifier *every boy* can scope over the existential *some professor or other*, due to the fact that free relatives in English are what Moltmann and Szabolcsi call "layered quantifiers". These are quantifiers that inherit the scopal abilities of their internal wide scope quantifier. Due to this inheritance phenomenon the free relative clause comes to behave as a universal quantifier itself and interacts scopally with other elements in the clause it occurs in. We believe that Hungarian (38)b instantiates a similar phenomenon: the relative clause as a whole 'inherits' the focus property from its internal focus constituent.

It must be mentioned that next to the above described focus percolation process, there might exist other, arguably non-semantic-based mechanisms that license the occurrence of focus inside relative clauses. As István Kenesei points out to us, next to focus on the head of the relative clause (as in (38)b), focus on *any* other main clause material can also license relative-internal focus:

(i) JÁNOS ette meg azt a levest, amit MARI készített el.
 János ate PV that-ACC the soup-ACC REL-what-ACC Mari prepared PV
 'It was John who ate the soup that MARI prepared.'

As far as we could ascertain, speakers for whom (i) is grammatical can also use RD in the same licensing context. We leave the specifics of these facts and the analysis of focus percolation for future research.

²¹ "Essentially quantificational" DPs are defined semantically as items that do not denote (singular or plural) individuals and their determiners are non-intersective (i.e. universal, proportional or at least presuppositional). According to Partee (1995) all essentially quantificational DPs are distributive.

²² Note that if *is* indeed spells out the head of $\text{Dist}_{is}P$, this instance of ellipsis differs from 'regular' (i.e. [+wh]) sluicing in that the head triggering the ellipsis is itself spelled out (thanks to Jason Merchant p.c. for raising this issue, and cf. Merchant 2001:74-82 for the observation with respect to [+wh]-sluicing). Nothing in our story hinges on this assumption, though. Specifically, it might well be (*pace* Brody 1990) that *is* is a suffix attached to the phrase in $\text{specDist}_{is}P$. In that case, the head of this projection would remain silent, exactly as in [+wh]-sluicing. Cf. Van Craenenbroeck & Lipták 2006 for morphological evidence that the Foc° -head itself is not deleted in Hungarian sluicing.

²³ Note that the data in (47)-(49) in combination with Cinque's (1999) theory of adverb placement also strongly suggest that *biztosan* is not in its base position in (49). As Cinque shows, manner adverbs are base-generated lower in the structure than speaker-oriented ones. The fact that it is only the *lower* reading that shows up in RD suggests that movement is involved in its derivation. Thanks to Marcel den Dikken p.c. for pointing this out to us.

²⁴ In this respect it is worth pointing out that Ono (2005) argues that sluicing can also apply in exclamatives in English.

²⁵ Cf. Den Dikken (2003) for a technical implementation of this difference in terms of Chomsky's (1995:234) characterization of the nature of strong features.

²⁶ For example, while sluicing can repair island violations (Ross 1969, Merchant 2001), fragment answers cannot (Merchant 2005). Cf. Merchant (2005:705-715) for a possible account, which might be compatible with our analysis.