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# What sluicing can do, what it can't and in which language – On the cross-linguistic syntax of ellipsis

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# What sluicing can do, what it can't and in which language
## On the cross-linguistic syntax of ellipsis

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**abstract**
This paper proposes a new, cross-linguistically refined theory of sluicing and examines the predictive force of this new theory in various domains of wh- and focus syntax. We start out by showing that the restriction of sluicing to wh-questions is not a reliable test for diagnosing this construction cross-linguistically. Instead, we put a new generalization in place, which informally states that the types of sluicing in any given language track the overt syntax of wh-movement in that language. This new generalization is put to work in the second part of the paper, where we show on the basis of Italian, Venetian and Bulgarian that the availability of non-wh-sluicing can provide new evidence for or against syntactic accounts positing that wh-movement and focusing target the same left peripheral position. In the last section we show that discrepancies between non-elliptical and elliptical syntax are due to the fact that ellipsis can repair certain PF-deficient configurations.

**keywords:** sluicing, single and multiple wh-movement, single and multiple focus movement, elliptical repair, Hungarian, Italian, Venetian, Bulgarian

## 1. Introduction

The study of ellipsis in current generative grammar is still strongly—perhaps too—construction oriented. Every introductory article on the subject recognizes at least sluicing, VP-ellipsis, NP-ellipsis, gapping, stripping, pseudogapping, conjunction reduction, and a handful of other constructions as falling under the general rubric of ellipsis (cf. e.g. Merchant 2009). On the one hand, this diversification is not surprising, as it is well-known that not all of these elliptical phenomena behave alike. For example, Lobeck (1995) shows in detail that sluicing, VP-ellipsis and NP-ellipsis share certain properties that set them apart from gapping, stripping and pseudogapping. On the other hand, however, such properties might simply be telling us what are—or rather, what are not—good diagnostics for identifying a particular elliptical construction. A revealing example in this respect is the line of reasoning initiated by Jayaseelan (1990), who tries to reduce pseudogapping to VP-ellipsis (see Gengel 2007 for recent discussion and references). To the extent that this analysis is on the right track, it suggests that whatever properties set apart pseudogapping from VP-ellipsis (e.g. sensitivity to the Backwards Anaphora Constraint) is not a distinctive trait of VP-ellipsis and hence should not be used in the identification of this construction.

A strong indication that this approach is worth exploring comes from cross-linguistic research into ellipsis. What emerges from such studies is that independent syntactic differences between languages can cause the elliptical constructions of those languages to come out differently as well. This implies that those aspects that differ can no longer be seen as defining characteristics—i.e. diagnostics—for that particular elliptical construction. A case in point is the study of VP-ellipsis in languages that unlike English have generalized V-to-I-movement (see McCloskey 1991, Doron 1999, Goldberg 2005). An example from Hebrew is given in (1) (Goldberg 2005:36).

(1) A: (Ha'im) Tamar kanta kafe?
Q Tamar buy.PAST3FSG coffee
B: Ken, hi kanta.
yes she buy.PAST3FSG
'A: (Did) Tamar buy coffee? B: Yes, she did.' (Hebrew)

The English gloss for B's reply in (1) looks more like a case of object drop than an instance of VP-ellipsis. In particular, the main verb is spelled out and only the direct object *kafe* 'coffee' appears to be missing,

while in English VP-ellipsis the main verb is never pronounced, the entire VP is gone and T is invariably filled by an auxiliary, a modal or dummy *do*. In spite of these first appearances, however, Goldberg (2005) argues in detail that (1) constitutes a case of VP-ellipsis. The upshot of this for the present discussion is that the absence of a main verb can no longer be considered a diagnostic of VP-ellipsis. A similar point is made by Tomioka's (2003) (re)analysis of pro-drop in South-East Asian languages. He argues that what is traditionally analyzed as *pro* represents NP-ellipsis licensed by a null determiner. Once again, this forces us to rethink what the defining characteristics of NP-ellipsis are. In particular, having a morphologically realized D-layer can no longer be one of them (*pace* Lobeck 1995). The general thrust of this discussion should be clear by now: cross-linguistic research into elliptical phenomena can shed new light on what the distinctive features of those phenomena are. In this paper we add to that discussion by looking at the cross-linguistic syntax of sluicing. We show that there too a typologically more refined picture leads to the abandonment of certain widely accepted diagnostics for sluicing.

This paper is organized as follows. In the next section we introduce what at first sight appears to be a new type of elliptical construction in Hungarian. In section 3 we apply some diagnostics for VP-ellipsis to the Hungarian facts and conclude that they do not meet these diagnostics. This leads to the conclusion (in section 4) that we are dealing with an instance of sluicing, albeit one in which the ellipsis remnant is not a wh-phrase. In section 5 we use this analysis to present a cross-linguistic typology of sluicing, in which the type of overt wh-movement a language has determines what sluicing will look like in that language. In the second half of the paper we shift the perspective and use the typologically refined analysis of sluicing as a probe into the cross-linguistic syntax of wh-movement. In particular, in section 6 we argue that the absence of non-wh sluicing in Italian and its dialects suggests that wh-movement does not taget specFocP (*pace* Rizzi 1997), while in section 7 we show that sluicing data can help choose between various competing analyses of multiple wh-movement in Bulgarian. Finally, in section 8 we broaden the picture somewhat and address the more general question to what extent non-ellipsis can be used as a diagnostic for ellipsis and vice versa. We do so based on a comparison between multiple focus fronting and multiple non-wh sluicing. The conclusion will be that the ability of ellipsis to repair PF-illicit representations can reduce the diagnostic value of certain non-elliptical data. Section 9 sums up and concludes.

## 2. The puzzle: a new type of ellipsis in Hungarian relatives?

Hungarian relatives can be reduced in a way that at first sight is unlike any of the elliptical processes mentioned in the previous section. An example is given in (2).

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

Informally speaking, it looks like the entire relative clause has been deleted, save for the relative pronoun and one more constituent (in this case the subject *Zoltán* 'Zoltán'). The non-elliptical version of this example is given in (3).

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

Data such as those in (2) raise precisely the type of question discussed in the previous section. In particular, when taken at face value, relative clause deletion in Hungarian does not meet the defining characteristics of any of the known elliptical processes: sluicing is ruled out because sluicing never targets relative clauses, it cannot be VP-ellipsis because T is not spelled out in (2), NP-ellipsis is impossible because an entire clause is missing, gapping is out because gapped clauses cannot be embedded, etc. Another way of making the same point is by looking at the literal translation of (2) in languages such as English, Dutch or French. As (4) shows, this results in ill-formedness across the board.

(4) a. * John invited the girl who Bill. (English)
b. * Jan heeft het meisje uitgenodigd dat Piet. (Dutch)
c. * Jean a invité la fille que Pierre. (French)

This line of reasoning seems to lead to the conclusion that relative clause deletion in Hungarian is *sui generis*, i.e. that it represents a new type of ellipsis that can be taxonomized and compared to other elliptical processes, and for which a new analysis should be proposed. As has become clear from the preceding discussion, however, this is not the tack we want to take in this paper. We argue that the data in (2) force

us to rethink what the diagnostics are for a particular type of ellipsis—in this case sluicing—and propose a unified analysis that does not involve expanding the taxonomy of known elliptical processes. As a first step towards that goal, we argue in the next section that relative clause deletion in Hungarian should not be reduced to VP-ellipsis.

## 3. Ruling out VP-ellipsis

Out of the known elliptical processes, the two main contenders for incorporating Hungarian relative clause deletion seem to be VP-ellipsis and sluicing. In this section we rule out a VP-ellipsis analysis, and in the next we argue that sluicing is indeed the correct option. However, given that this entire paper is about how to diagnose particular types of ellipsis, determining the criteria to distinguish Hungarian relative clause deletion from VP-ellipsis is a far from trivial matter. For example, the data and analyses discussed in section 1 clearly show that the absence or presence of a main verb should not be seen as a telling sign of VP-ellipsis having or not having taken place. Moreover, one could argue that the same holds for the presence of an auxiliary. Suppose there were a language without generalized V-to-I-movement (like English) and without a requirement to lexically fill T in the case of VP-ellipsis (unlike English, but see also above, Tomioka's 2003 analysis of pro-drop). In such a scenario, the example in (2) would be a textbook case of VP-ellipsis and would thus straightforwardly represent the Hungarian counterpart of the English translation of this example.

The most neutral and uncontroversial characteristic of VP-ellipsis—especially when comparing it to sluicing—concerns the size of the elided constituent. In particular, while VP-ellipsis deletes a verb-related projection (be it VP, *v*P or VoiceP, see Merchant 2007, Baltin 2007, Aelbrecht 2009 for discussion) sluicing leaves out a clausal projection (IP or a low CP-layer, see Merchant 2001, Van Craenenbroeck to appear, Baltin 2006). It is on this very basic difference that we will base our reasoning in this section. We present evidence suggesting that Hungarian relative deletion leaves out a larger part of the structure than would be expected if it were a subtype of VP-ellipsis. Consider first the data in (5) and (6).

(5) Kornél meg szokta hívni azt a lányt, akit Zoltán.
Kornél PV HABIT invite that-A the girl who-A Zoltán
'Kornél usually invites the same girl that Zoltán does.'

(6) Kornél meg szokta hívni azt a lányt, akit Zoltán szokott.
Kornél PV HABIT invite that-A the girl who-A Zoltán HABIT
'Kornél usually invites the same girl that Zoltán does.'

The sentence in (5) is an example of Hungarian relative clause deletion in which the antecedent clause contains a periphrastic tense (cf. the habitual auxiliary *szokta*). The remnants of the ellipsis process are once again the relative pronoun *akit* 'who' and the subject *Zoltán* 'Zoltán'. The example in (6) differs from (5) only in that the habitual auxiliary now also shows up in the ellipsis-containing clause, making this sentence look exactly like a case of VP-ellipsis. Note that (5) and (6) have the same interpretation (albeit that the presence of a non-contrasting auxiliary in (6) makes the second clause sound somewhat redundant or prolix). There are at least two ways of analyzing this pair. One would be to claim that both (5) and (6) represent instances of VP-ellipsis, the only difference being that (5) has also undergone an optional process of auxiliary drop. This is the tack taken by Bartos (2000). The second option—and this is the one we will pursue—is to say that (5) and (6) constitute two separate ellipsis processes, that differ in the amount of structure that is deleted: a projection including the position of the auxiliary in (5) and a lower, VP-like projection in (6). This analysis is supported not only by the data discussed in the following paragraphs, but also by the fact that the mechanism of auxiliary drop purportedly operative in (5) is completely disallowed in non-elliptical contexts in Hungarian:

(7) Kornél meg szokta hívni azt a lányt, akit Zoltán *( szokott) hívni.
Kornél PV HABIT invite that-A the girl who-A Zoltán HABIT invite
'Kornél usually invites the same girl that Zoltán invites.'

Given that there is no independent evidence for auxiliary deletion in Hungarian—quite the contrary, as (7) shows—it seems highly unlikely that such a mechanism is responsible for the absence of the auxiliary in (5). What the contrast between (5) and (6) shows, then, is that Hungarian relative clause deletion elides a larger portion of the clausal structure than VP-ellipsis does. As a result, the two should not be unified.

A second indication that this conclusion is on the right track concerns adverbial modification. It is fairly uncontroversial to assume that the unmarked, base-generated position of certain adverbs is in the (extended) VP-domain. If Hungarian relative clause deletion elides the entire clause, then such adverbs

should not surface. If on the other hand it involves VP-ellipsis, we might expect them to show up (cf. also the fact that VP-adverbs are compatible with VP-ellipsis in English). In this respect, the contrast between (8) and (9) suggests that our earlier analysis of (5) and (6) was on the right track.

(8) Kornél fel szokta hívni azt a lányt, akit Zoltán is <??naponta >.
Kornél PV HABIT invite that-A the girl-A who-A Zoltán also daily
'Kornél usually invites the girl whom Zoltán also invites daily.'

(9) Kornél fel szokta hívni azt a lányt, akit Zoltán
Kornél PV HABIT invite that-A the girl-A who-A Zoltán
is < naponta> fel szokott < naponta>.
also daily PV HABIT daily
'Kornél usually invites the girl whom Zoltán also invites daily.'

These examples once again differ in the presence (in (9)) or absence (in (8)) of the habitual auxiliary *szokott* (in this case accompanied by the preverbal particle *fel*).[1] As the judgments show, however, this difference correlates with the possibility of adverbial modification. When *szokott* is present, the elided clause can be modified by *naponta* 'daily' (regardless of whether it precedes or follows the auxiliary), while in the absence of the habitual auxiliary, adverbial modification is clearly marked. We take this to be a second clear indication that the distinction between such examples is not one of auxiliary drop having or not having applied, but rather is indicative of the size of the elided constituent: VP (or a related projection) when the auxiliary is present, and TP (or another clause-level projection) in the case of Hungarian relative clause deletion.

Our third and final argument is arguably more indirect, but it is suggestive nonetheless. As pointed out by Merchant (2001:8-9n2), another difference between VP-ellipsis and sluicing is that while the former allows sloppy readings relatively freely, the latter does not, or in Merchant's phrasing "speakers are quite uniform in finding sloppy readings under sluicing to be highly inaccessible" (Merchant 2001:8). As illustrated by the data in (10)-(11), a similar contrast can be replicated in Hungarian with respect to the presence or absence of an auxiliary.

(10) János szokott mesélni az anyjának arról a lányról,
János HABIT tell -INF the mother-D that-about the girl-about
akiről Béla is szokott.
who-about Béla also HABIT
'János usually tells his mother about the girl, whom Béla also tells about to János' mother.'
'János usually tells his mother about the girl, whom Béla also tells about to Béla's mother.'

(11) János szokott mesélni az anyjának arról a lányról,
János HABIT tell -INF the mother-D that-about the girl-about
akiről Béla is.
who-about Béla also
'János usually tells his mother about the girl, whom Béla also tells about to János' mother.'
* 'János usually tells his mother about the girl, whom Béla also tells about to Béla's mother.'

Once again, these examples differ only in that the habitual auxiliary *szokott* is present in (10) but absent in (11). Both examples are well-formed under the strict reading, but only (10) allows for the sloppy reading. Admittedly it is not a priori clear why there should be a correlation between the size of the deleted constituent and the availability of a sloppy reading, but given the highly similar data contrast in English, we take these facts to support our general hypothesis that relative clause deletion in Hungarian is more akin to sluicing than it is to VP-ellipsis.

Summing up, in this section we have argued that Hungarian relative deletion should not be reduced to VP-ellipsis. The amount of structure that is missing seems to be a proper superset of any VP-related projection. As such, relative deletion is more akin to sluicing than to VP-ellipsis. This is the hypothesis we pursue in the next section.

## 4. Hungarian relative clause deletion involves sluicing

In the previous section we have argued that Hungarian relative clause deletion should not be analyzed as a subtype of VP-ellipsis. In a nutshell, closer inspection revealed that apart from relative clause deletion

[1] On the use of the paricle *is* 'also' to the right of *Zoltán*, see Van Craenenbroeck & Lipták (2007).

Hungarian also features a bona fide instantiation of VP-ellipsis and that the two phenomena differ too substantially for a unified account to be plausible. In particular, while VP-ellipsis deletes a verb-related projection, in relative clause deletion an entire clause is missing. If we still want to reduce relative clause deletion to a known elliptical construction—and from the discussion in section 1 it should be clear that we consider this to be a desirable course of action—the next possible suspect that comes to mind is sluicing. However, this hypothesis immediately seems to be rendered toothless in light of the generalization found in Lobeck (1995:54-62) and Merchant (2001:54-61) that sluicing never occurs in relative clauses. Instead, it only deletes the IP-complement of an interrogative wh-complementizer, i.e. sluicing is restricted to wh-questions. One of the examples Merchant gives to substantiate this claim is (12) (Merchant 2001:59).

(12) * Somebody stole the car, but they couldn't find the person who.

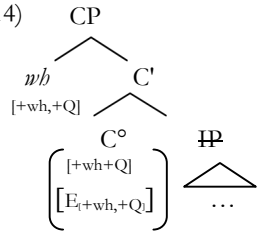
Given that Hungarian relative clause deletion by definition targets relative clauses, identifying it with sluicing seems to be a lost cause. This, however, is where the main theme of this paper comes in. We will argue that the restriction to wh-questions is not a reliable diagnostic of sluicing. The generalization Lobeck and Merchant have uncovered is a by-product of the syntax of wh-movement in the languages they consider. Given that the syntax of Hungarian wh-movement differs from its English counterpart, the distribution of sluicing in the two languages will differ as well. This will lead not only to an analysis of Hungarian relative deletion as sluicing, but also (in the next section) more generally to a cross-linguistically more refined theory of sluicing.

In order to appreciate what is behind the Lobeck/Merchant-generalization, it is worth taking a look at Merchant's (2001, 2004) technical implementation of sluicing. He argues that sluiced clauses differ from their non-elliptical counterparts in the presence of a formal feature (called [E]), which bundles the syntactic, semantic and phonological properties that characterize ellipsis. The full specification of [E] is given in (13).

(13) a. the syntax of [E]: $E_{[\mu wh^*, \mu Q^*]}$
b. the phonology of [E]: $\varphi_{IP} \rightarrow \emptyset$ / E __
c. the semantics of [E]: $[\![ E ]\!] = \lambda p : e\text{-GIVEN } (p)\ [p]$

The line that is of interest to us here is (13)a (for discussion of the other two, see Merchant 2001:60-61). It represents the syntactic licensing requirements of sluicing, i.e. the fact that sluicing is restricted to wh-questions. Merchant implements this by assuming that [E] is itself endowed with syntactic features. In particular, [E] has an uninterpretable [wh]-feature and an uninterpretable [Q(uestion)]-feature that it needs to check in a local (head-head) configuration (indicated here by the asterisk), not via (potentially non-local) Agree. Given that these are exactly the same features a wh-phrase checks in a wh-question, the restricted distribution of sluicing now follows. Consider the schematic representation in (14).

(14)




This tree structure represents the left periphery of a sluiced wh-question. A wh-phrase endowed with a [+wh,+Q]-feature specification has moved into the left periphery to check those features against the matching counterparts of the C°-head.[2] Also adjoined to that head is the [E]-feature, which has the syntactic feature specification outlined in (13)a. Just like the wh-phrase, the [E]-feature can undergo feature checking, as a result of which it can license sluicing in this (and only this) environment.

The thing to note about (14) is that the feature specification of [E] matches that of the wh-phrase. This is how Merchant ensures that sluicing will only take place in wh-questions. From a cross-linguistic point of view, however, the analysis raises the question of whether this identity in feature specification is accidental. Specifically, it is the case that the syntactic specification of the [E]-feature found in sluicing is always [+wh,+Q] (which in a language like English happens to coincide with that of wh-phrases), or does it simply track the feature specification of wh-phrases (in which case different languages might have different specifications for [E])? Hungarian provides an ideal testing ground for resolving this issue, as it is well-established that wh-movement in this language targets a much lower position that in English (a position

[2] We leave open the question which of these features are (un)interpretable/(un)valued, as this is orthogonal to our analysis.

typically identified as specFocP, see É. Kiss 1987 et seq.). If the syntactic feature specification of [E] were fixed and sluicing could only delete the complement of the C° found in constituent questions, then English-style sluicing would be predicted not to occur in Hungarian (either because the appropriate licensing context is never found, or because the wh-phrase would not raise high enough and hence would be contained in the ellipsis site). As the example in (15) shows, this is a false prediction.

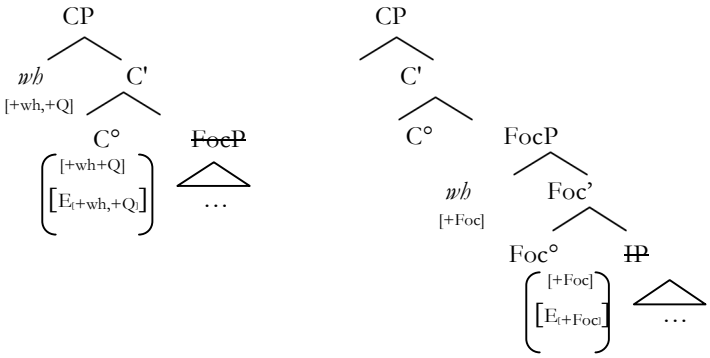
(15) János meghívott egy lányt, de nem tudom kit.
John invited a girl-A but not know-1SG who-A
'John invited a girl, but I don't know who.'

This leaves the second option: the syntactic feature specification of [E] always tracks that of wh-phrases. This implies that differences in wh-movement between languages lead to differences in sluicing between those languages. In order to make this proposal more concrete, let us assume that alongside the syntactic specification of the [E]-feature found in English in (16)a, that of its Hungarian counterpart is as in (16)b.

(16) a. the syntax of [E] in English: $E_{[u\text{wh}^*, u\text{Q}^*]}$
b. the syntax of [E] in Hungarian: $E_{[u\text{Foc}^*]}$

Wh-phrases in Hungarian move to specFocP to check a [Foc]-feature (see Lipták 2001). The representation in (16)b states that this is also the feature that will be checked by [E] in Hungarian. Given that the distribution of sluicing is determined by the feature(s) [E] has to check, this means that while English sluicing deletes the complement of (the highest) C°, Hungarian sluicing deletes the complement of Foc°. This is illustrated in (17).

(17) a. **English** b. **Hungarian**

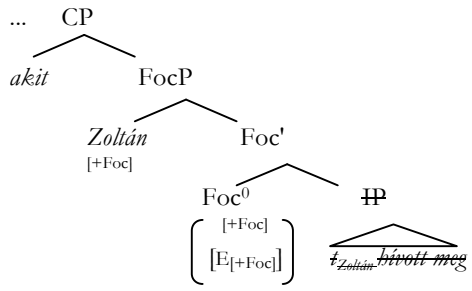



We are now in a position to return to relative clause deletion in Hungarian. Consider what the implications of (16) are for the question of whether sluicing can take place in relative clauses. For English, the answer is clearly 'no', as relative clauses cannot contain wh-questions.[3] For Hungarian on the other hand, the situation is different. What (16)b states is that [E] is licensed (and hence will trigger ellipsis) in any context in which a focus feature is being checked. While such contexts include wh-questions, they are certainly not limited to them. For example, Hungarian relative clauses also allow for non-wh focus movement.[4] Given that a non-wh focus also checks a [+Foc]-feature, [E] can be licensed in such a context and trigger ellipsis. This means that the basic example of relative clause deletion (repeated below as (18) can now be analyzed as an instance of sluicing triggered by the focus movement of the subject *Zoltán* 'Zoltán'. This analysis is represented in (19).

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

[3] Implied here is 'wh-questions at the highest structural level of the relative clause'. Clearly, wh-questions can be embedded inside relative clauses, and in that case, sluicing is definitely possible:
(i) I told them that Caesar had conquered Rome, but there was not a single student who could tell me in what year.
[4] Note that the preceding discussion suggests that Hungarian relative clauses should allow for wh-movement as well. As discussed by Lipták & Zimmermann 2007, this prediction is borne out. However, given that such wh-movement is only allowed if the head of the relative clause is also a wh-phrase, we were unable to construct a sluicing variant of such wh-questions.

(19)




In this relative clause, the DP *Zoltán* first undergoes focus movement to specFocP (for supporting evidence, see Van Craenenbroeck & Lipták 2007). In so doing it checks a [+Foc]-feature against the head of FocP. Adjoined to that head is the (sluicing-)[E]-feature. Given that it too has a focus feature to check, it can be fully syntactically licensed and as a result can trigger ellipsis of the complement of Foc° (indicated here by means of strikethrough). What remains outside of the ellipsis site is the relative pronoun *akit* 'who' and the focused subject-DP *Zoltán*. In other words, we have successfully analyzed Hungarian relative deletion as an instance of sluicing.

The analysis just sketched makes a number of additional predictions. We discuss three of them here. First of all, note that the structure in (19) by no means requires that it be the subject that focus-moves out of the IP. As long as there is focus movement, a [+Foc]-feature is being checked and [E] can be licensed. Put differently, the remnant showing up to the right of the relative pronoun in Hungarian relative clause deletion should not necessarily be the subject. This prediction is borne out in (20)-(22), where the remnant is the direct object, the indirect object and a prepositional complement respectively.

(20) AZ A FIÚ hívta meg Esztert, aki KATIT.
that the boy invited PV Eszter-A who Kati-A
'The boy who invited Eszter was the one who invited Kati.'

(21) Péternek AZT A FOTOT mutattam meg, amit ANNÁNAK.
Péter-D that-A the photo-A showed PV what-A Anna-D
'The photo I showed to Péter was the one that I showed to Anna.'

(22) AZT A FIÚT hívtam meg, aki Marival lakik,
that-A the boy-A invited PV R-who Mari-WITH lives,
s nem AZT, aki OLGÁVAL.
and not that-A who Olga-WITH
'It was the boy who lives with Mari that I invited and not the one who lives with Olga.'

Secondly, if Hungarian sluicing does not delete the complement of the highest C°-head, other left-peripheral material (e.g. complementizers or topics) should be able to occur in between the matrix verb and the sluiced *wh*-phrase. As shown in (23) and (24), this prediction is borne out.

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

(24) ? Tudom, hogy a diákok és a tanárok is meghívtak
know-1SG that the students and the teachers also invited
valakit, de nem tudom, hogy a diákok kit.
someone, but not know-1SG that the students whom
'I know that the students and the teachers each invited someone, but I don't know who the students invited.'

In (23)/(24) the wh-phrase *kit* 'who' is situated in specFocP, the [E]-feature is adjoined to Foc°, and it triggers deletion of the (IP-)complement of Foc°. This means that the CP-layer(s) dominating FocP is (are) not contained in the ellipsis site and should be able to host overt material in these sluicing examples (see the representation in (17)b). This is confirmed by the presence of the complementizer *hogy* 'that' in both examples and the topicalized DP *a diákok* 'the students' in (24). Moreover, the fact that the English counterparts of these examples are sharply ungrammatical is a further indication that the structural difference between (17)a and (17)b is on the right track.

A third prediction raised by the analysis presented in (19) concerns the fact that Hungarian relative clause deletion should not be restricted to relative clauses. In particular, note that the relative pronoun in (19) plays no role whatsoever in the analysis. The only crucial ingredient is that there be focus movement, but unsurprisingly, focus movement also occurs in non-relative clauses. If all it takes for [E] to be licensed is that a focus feature is being checked, sluicing should also occurs in such clauses. This is corroborated by (25).

(25) János kirugott valakit, és azt hiszem hogy BÉLÁT.
J. fired someone and that I.think that Béla
'János fired someone and I think it was Bill.'

In this example, the DP *Bélat* undergoes focus fronting to specFocP. The [E]-feature is adjoined to Foc$^{o}$ and triggers deletion of its complement. The only difference with (18) is that here sluicing takes place in a complement clause rather than a relative clause. This also shows that the term 'Hungarian relative clause deletion' has become obsolete. We will henceforth use the term 'focus sluicing' to refer to examples such as (18) or (25). This term is meant to indicate that while such data are instantations of sluicing, they differ from more traditional specimens in having a non-wh-phrase as remnant.

Before moving on to our cross-linguistic typology of sluicing in the next section, there is one more point we would like to make based on examples such as (25). It turns out that we can create an additional argument against a VP-ellipsis analysis of these data (cf. supra, section 2). As discussed in detail by Fox & Lasnik (2003) and Merchant (2008), sluicing differs from VP-ellipsis in that it can rescue island violations (see also Ross 1969). Moreover, both papers explicitly attribute the difference between the two elliptical constructions to the fact that the former deletes more structure than the latter. As this ties in nicely with the discussion of section 2, it is worth exploring if the presence or absence of an auxiliary correlates with island sensitivity. Consider first the baseline data in (26) and (27).

(26) János minden napúszik valahol, azt hiszem az USZODÁBAN.
János every day swims somewhere that think.I the swimming.pool-in
'János swims every day in some place, I think in the swimming pool.'

(27) János minden napúszik valahol, azt hiszem az USZODÁBAN szokott.
János every day swims somewhere that think.I the swimming.pool-in HABIT
'János swims every day in some place, I think in the swimming pool.'

These data are completely parallel to the ones in (5)-(6), the only difference being that (26)-(27) involve complement clauses rather than relative clauses. This means that they pose the same question as (5)-(6), i.e. are these instantiations of different elliptical constructions or do they both represent VP-ellipsis (in (26) accompanied by auxiliary drop)? The difference in island sensitivity between sluicing and VP-ellipsis suggests the former hypothesis is on the right track. Consider what happens when we embed the sluicing correlate inside an island:

(28) Felvettük a férfit, aki minden napúszik valahol,
hired.1PL the man who every day swims somewhere
azt hiszem az USZODÁBAN.
that think.I the swimming.pool-in
'We hired the man who swims every day in some place, I think in the swimming pool.'

(29) * Felvettük a férfit, aki minden napúszik valahol,
hired.1PL the man who every day swims somewhere
azt hiszem az USZODÁBAN szokott.
that think.I the swimming.pool-in HABIT
INTENDED: 'We hired the man who swims every day in some place, I think in the swimming pool.'

Just as would be predicted by the theories proposed in Fox & Lasnik (2003) and Merchant (2008), the version with the auxiliary displays an island violation, while the one without the auxiliary is island-insensitive. This further confirms our analysis, in which (27) is an instance of VP-ellipsis and (26) represents sluicing.

In this section we have presented our analysis of relative clause deletion in Hungarian. We have shown that in spite of first appearances these data fall under the header of sluicing (and we have accordingly started referring to them as focus sluicing). A crucial ingredient of that analysis was the idea that sluicing cross-linguistically tracks the syntax of wh-movement. In the next section we further elaborate on that idea.

## 5. Towards a cross-linguistic typology of sluicing

While our paper so far has been mainly about Hungarian (in comparison to English), it is clear that the analysis we proposed in the previous section has much wider implications. In particular, the syntax of sluicing should track that of wh-movement in all languages. The way we want to formalize this is as in (30).

(30) **THE WH/SLUICING-CORRELATION**
The syntactic features that the [E]-feature has to check in a language *L* are identical to the strong features a wh-phrase has to check in a regular constituent question in *L*.

Note that (30) specifies that only the *strong* features of the wh-phrase are relevant for the feature specification of [E]. Put differently, it is the surface position of the wh-phrase that serves as input for the syntax of sluicing. For example, one could argue that while wh-phrases in Hungarian overtly only move to specFocP, in covert syntax they raise on to specCP, e.g. to check a [+Q]-feature there (though see Surányi 2005 for arguments against such an analysis). If the [E]-feature were sensitive to this second movement step, it would only be able to license sluicing in wh-questions (like in English) and the focus sluicing data discussed in the previous sections would remain unaccounted for. This is why the wh/sluicing-correlation only takes into account the overt part of the derivation.

With this much as background, we can now determine how many and which language types are predicted to occur by (30). Under the assumption that wh-phrases cross-linguistically display three types of behavior—i.e. movement to specCP, movement to specFocP or wh-in-situ, cf. Cheng (1997)[5]—we arrive at the three main types of sluicing languages mentioned in the table in (31).

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

| type of wh-movement | type of [E]-feature | sluicing with a wh-remnant (wh-sluicing) | sluicing with a focus remnant (focus sluicing) | sample language |
|---|---|---|---|---|
| movement to specCP | $E_{[\#wh^*,\#Q^*]}$ | ✓ | * | English |
| movement to specFocP | $E_{[\#Foc^*]}$ | ✓ | ✓ | Hungarian |
| wh-in-situ | / | * | * | Japanese |

The first two rows in (31) have played a central role in the paper so far. Consider first English-type sluicing. In this type of language, a wh-phrase moves all the way up to the highest specCP, and in so doing checks both a [+wh]- and a [+Q]-feature. Given that this movement is overt, [E] has the same double feature specification. This in turn restricts the types of sluicing we find in these languages: 'regular' wh-sluicing is fine (cf. (32)), but focus sluicing is disallowed (cf. (33)).

(32) Someone read that book, but I don't know who.
(33) * John fired someone and I think that Bill.

In Hungarian-type languages on the other hand, wh-phrases overtly only move up to specFocP. As a result, they only check a strong [+Foc]-feature, and hence, so does [E]. The fact that the syntactic representation of [E] is less specific leads to a wider distribution for sluicing. In particular, languages with overt wh-movement to specFocP display sluicing not only in wh-questions, but also in clauses containing a non-wh-focus:

(34) Valaki olvasta azt a könyvet, de nem tudom ki.
someone read that the book-Abut not I.know who
'Someone read that book, but I don't know who.'

(35) János kirugott valakit, és azt hiszem hogy Bélát.
J. fired someone and that I.think that Béla
'János fired someone and I think it was Bill.'

[5] A possible fourth type could be wh-scrambling. We hope to look into this phenomenon in future research.

Type three deserves a bit more attention. It is well-known that there are languages in which wh-phrases do not undergo any overt movement, a phenomenon commonly referred to as wh-in-situ. From the point of view of (30) this means that no strong features are being checked by wh-phrases in constituent questions. Given that [E] tracks what wh-phrases do in overt syntax, the prediction seems to be that [E] should be inert in this type of language. In other words, both wh-sluicing and focus sluicing should be ill-formed. At first glance, the Japanese data in (36)-(37) seem to falsify this prediction.

(36) Dareka-ga sono hon-o yon-da ga, watashi-wa dare ka wakaranai.
someone$_{NOM}$ that book$_{ACC}$ read$_{PAST}$ but I-TOP who C$_Q$° know.not
'Someone read that book, but I don't know who.'

(37) John-ga dareka-o kubinisita rasii kedo, boku-wa Bill to omou.
John$_{NOM}$ someone$_{ACC}$ fired seem but I-TOP Bill that$_{C°}$ think
'It seems John fired someone and I think it was Bill.'

The problem is only apparent, however. As pointed out by Merchant (1998:110) "Japanese 'sluicing' data (..) instantiate elliptical clefts and not sluicing of the English variety" (cf. also Fukaya and Hoji 1999). The thing to note here is that Japanese is a language that has (a) pro-drop, and (b) auxiliary drop in embedded clauses. When applied to an embedded copular clause or short cleft of the type *(I don't know) who it was*, the combination of these two processes can create the appearance of a sluiced clause: *(I don't know) who ~~it is~~*. Given that no clausal ellipsis has taken place, however, it would be terminologically inappropriate to refer to these examples as involving sluicing—which is why Merchant (1998) proposes the term 'pseudosluicing'. Applied to the example in (36), the above reasoning implies that it should not be analyzed as in (38)—which would be problematic for our approach—but rather as in (39)—which is orthogonal to and hence compatible with our analysis. That this analysis is on the right track is further suggested by the fact that in Japanese pseudosluicing, the copular verb *be* is allowed to surface (which is exactly what one would expect given that auxiliary drop is optional). The fact that this is categorically excluded in 'genuine' instances of sluicing such as those in English or Hungarian strongly suggests that there is a substantial structural difference between (32)-(35) on the one hand and (36)-(37) on the other.

(38) … [$_{CP}$ dare$_i$ ~~[$_{IP}$ t$_i$ sono hon-o yon-da ]~~ ka ]
who that book$_{ACC}$ read$_{PAST}$ C$_Q$°
'… who read that book.'

(39) … [$_{CP}$ [$_{IP}$ pro dare ~~da/de-aru~~ ] ka ]
who be$_{PRES}$ C$_Q$°
' …who it is.'

A further indication that the wh/sluicing-correlation in (30) is on the right track—which at the same time will serve as a transition to the second half of this paper—comes from languages with multiple wh-movement. In particular, a common analysis of this type of languages assumes that only one wh-phrase moves to the highest specCP—say, to type the clause as a question—while the others move into the lower left periphery to check a focus feature (see Bošković 2002, Stjepanović 2003). From the point of view of the wh/sluicing-correlation, this predicts that multiple wh-movement languages should be prime examples of Hungarian-type languages, in allowing focus sluicing. As the data in (40)-(44) show, this prediction is borne out. All these languages display multiple wh-movement, and all of them also allow focus sluicing.[6]

**Romanian** (Hoyt & Theodorescu to appear)

(40) Am aflat că cineva a plecat, dar nu ştiu dacă Ion.
past.1SG learned that someone past.3SG left but no know.1SG if Ion
'I found out that someone left, but I don't know if it was Ion.'

**Russian** (Grebenyova 2007)

(41) A: Ty skazala čto on budet uvažat' Mašu?
you said that he will respect Maša.ACC
'Did you say that he will respect Maša?'
B: Net. Ja skazala čto IVANA.
no I said that Ivan.ACC
'No. I said that (he will respect) IVAN.'

[6] Note that Bulgarian, also a multiple wh-movement language, is missing from this list. We return to focus sluicing in Bulgarian in detail in section 7.

**Polish** (K. Migdalski p.c.)

(42) Wiedziałem, że Janek kogoś zaprosił ale nie wiedziałem że Billa.
know.PART.M.SG that J. someone invited but not know.PART.M.SG that B-A
'I knew Janek invited someone, but I didn't know that it was Bill.'

**Czech** (R. Šimík p.c.)

(43) Věděl jsem, že Honza někoho pozval, ale
knew aux.1SG that H. someone-A invited but
nevěděl jsem, že Martina.
not.knew aux.1SG that M.ACC
'I knew Honza invited someone, but I didn't know it was Martin.'

**Serbo-Croatian** (B. Arsenijević p.c., Tanja Milicev p.c., M. Marelj p.c.)

(44) Jovan je pozvao nekog. Mislim da je Bila.
Jovan aux invited someone think.1SG that aux B.ACC
'Jovan invited someone. I think that it was Bill.'

This concludes the first half of our paper. The central question in this and the preceding sections has been how to diagnose sluicing from a cross-linguistic point of view. This has led to the typologically explicit theory of sluicing outlined in this section. It establishes a novel correlation that links the availability of sluicing not to the availability of overt wh-movement in itself, but to the availability of any movement operation that checks features identical to the strong features a wh-phrase checks in a language.

In the remainder of the paper, we use this refined theory to probe into the syntactic mechanism of wh- and focus movement. In the sections that follow, we shed new light on various syntactic aspects of question formation and focusing, using as a diagnostic the generalization in (30). More specifically, in section 6 we reconsider single wh-movement and the claims made about the distribution of wh-elements with respect to focus in Italian and Venetian. We show that contrary to previous accounts (e,g. Rizzi 1997), the wh-phrase in constituent questions occupies a position distinct from that of contrastive focus. In section 7 we turn to multiple wh-fronting languages and zoom in on the question of what motivates the movement of the wh-phrases in such languages: are they triggered by a C head with a [wh]-feature that can be multiply checked, or is the [wh]-feature on C checked only once, with the other wh-phrases undergoing movement to a lower functional projection? Focusing on one multiple fronting language, Bulgarian and its dialects, we argue that both strategies are available in natural language. In section 8 we use our theory of sluicing to diagnose the syntactic mechanism of multiple focus fronting in various languages. The facts uncovered in this domain will necessitate a broader discussion about the extent to which non-elliptical structures can serve as reliable diagnostics for elliptical ones. We consider a case where the parallel between ellipsis and non-ellipsis breaks down due to an elliptical repair effect. Finally, section 9 sums up and concludes.

## 6. Sluicing as a probe into the syntax of single wh-movement

We begin the discussion of the diagnostic potential of our theory of sluicing by diagnosing properties of single wh-movement. To recap, the gist of the new theory put forward in section 5 was that the link between wh-movement and the availability of sluicing is only indirect: any element that undergoes overt displacement akin to wh-movement can surface as the remnant in a sluicing construction. Prime examples of phrases that move to the same position as wh-phrases, triggered by the same attracting features, are focus constituents. As the discussion of Hungarian has shown, there are languages that move both wh- and focus constituents to the same position: the Focus phrase (FocP). Our prediction about the availability of focus sluicing in languages like Hungarian is thus straightforward: in a language where wh-phrases and focus phrases target the same overt position, focus sluicing should be allowed. The availability of focus sluicing can then in turn be used as a diagnostic to establish identical overt placement of wh- and focus phrases in the left periphery.

In the present section, we apply this diagnostic to a language that, similarly to Hungarian, has featured extensively in the literature on the parallelism between overt wh- and focus movement: Italian. The most influential account of the Italian left periphery, Rizzi (1997), argues that wh- and focus elements in this language both target specFocP, based on the standard argument that wh-phrases and foci are in complementary distribution. This is evidenced by the following facts (see also Stoyanova 2008 for a similar claim):

(45) * Che cosa, A GIANNI hai detto?
what thing to Gianni have.2sg told
INTENDED: 'What did you tell Gianni?'

(46) * A GIANNI che cosa hai detto?
to Gianni what thing have.2sg told
INTENDED: 'What did you tell Gianni?'

Other facts, however, call into question whether complementarity in this case is an unambiguous diagnostic for identical placement. The distribution of complementizers with respect to the wh-phrase and the focus item greatly differs. To see this, consider the following examples from a Northern Italian dialect, Venetian, whose left periphery is very similar to standard Italian, but which, unlike standard Italian, allows for doubly-filled COMP filter violations (C. Poletto p.c.):

(47) Credo <che> NANE <*che> i gabia visto, no Piero.
I.think that Nane that they have seen not Piero
'I think they have seen Nane, not Piero.'

(48) Me domando <*che> chi <che> Nane ga visto al marcà.
me I.ask that who that Nane has seen at.the market
'I wonder who Nane saw at the market.'

These examples show that focus always occurs to the right of the complementizer *che* in this dialect, while a wh-phrase always surfaces to its left. Similar kinds of evidence from the realm of wh-phrase placement with respect to clitic left dislocated items in Venetian have led van Craenenbroeck (2006) to the conclusion that wh-phrase and focus do not front into the same position in the left periphery after all. Rather, wh-movement targets a higher position, specCP, while foci occupy a low left periphery position (specFocP).

After this introduction into wh-placement in Italian, let us return to the evidence of sluicing as a diagnostic for wh-movement. The predictions raised by the above two accounts with respect to focus sluicing in Italian and its dialects are now clear: if the dialects allow for focus sluicing, wh- and focus items both occur in FocP in overt syntax, and check the same strong feature there. If focus sluicing is unavailable, their position is distinct. As it turns out, the latter is the case: Venetian (cf. (49), just like standard Italian (cf. (50), does not allow for focus sluicing:

(49) * Savevo che Nane gaveva invidà qualcheduni ma non so Piero.
knew.1sg that Nane had invited someone but not know.1sg Piero
INTENDED: 'I knew that Nane had invited someone, but I didn't know it was Piero.'

(50) * Sapevo che Gianni aveva invitato qualcuno ma non so Piero.
knew.1sg that Gianni had invited someone but not know.1sg Piero.
INTENDED: 'I knew that Nane had invited someone, but I didn't know it was Piero.'

The unavailability of focus sluicing in Italian and Venetian strongly suggests that wh-movement does not occupy a focus position in overt syntax, *pace* Rizzi (1997) and Stoyanova (2008).

Note that the predictions made by the absence of focus sluicing rule out identical placement of wh- and focus phrases only with respect to the position they occupy in *surface* syntax. The facts do not rule out a scenario in which the wh-phrase moves *through* specFocP on its way to specCP (allowing for an account of the observed complementarity between wh- and focus items, in (45) and (46)). Consider why. In this scenario, the wh-phrase checks a [+foc] feature in FocP and a [+wh] feature in CP. According to the correlation in (30), this entails that the feature content of [E] is [$E_{[\alpha wh^*, uFoc^*]}$], which in turn means that the [E]-feature needs to check both a focus feature and a wh-feature in overt syntax, i.e. it must undergo movement from Foc to C in overt syntax. As a result, [E] can trigger ellipsis only on C, causing the elision of the complement of C, which implies that no element residing in specFocP can survive the ellipsis, i.e. focus sluicing is ruled out.

In this section we have shown that the lack of focus sluicing in Italian constitutes a challenge for a Rizzian-style analysis that assumes identical positions for wh-phrases and foci. Instead, a more traditional view on Italian wh-movement, according to which wh-phrases occupy a position distinct from foci, is perfectly compatible with the sluicing data.

## 7. Sluicing as a probe into the syntax of multiple wh-movement

As we will show in this section, the availability of focus sluicing can also be fruitfully used to diagnose the fine-grained syntax of multiple wh-movement in languages that allow multiple wh-fronting (MWF). Many languages, including all Slavic languages, front all wh-constituents to the left periphery, as has been known

since Rudin (1988). Although the basic facts are well-known, there is little agreement about the triggers of wh-fronting in these languages: opinions differ about what features wh-phrases check when fronted and which functional head these features are located on.

### *7.1 [wh]-feature checking: the central issue in the analysis of MWF languages*

The core of the debate centers around the question whether a [wh]-feature on the attracting C-head can be checked more than once, and, as a consequence of this, whether all the fronted wh-phrases check a [+wh] feature in the fronting process. Following the spirit of Rudin's seminal proposal, Pesetsky (2000) argues that the [wh]-feature on C can undergo multiple checking, and it does so when it attracts more than one wh-phrase in MWF languages. Bošković (1998a,b, 2002) on the other hand puts forward a theory that rules out multiple checking of the [wh]-feature on C. This feature is claimed to be checked at most once, in all languages. As for the non-initial wh-phrases in MWF languages, Bošković follows Stjepanović (2003) in claiming that these undergo focus movement—or, in some cases, scrambling—an operation that differs from wh-movement in that the triggers are not found on an attracting head, but rather on the moving items themselves.

Our theory of sluicing introduced in section 4 has an interesting bearing on the debate sketched here and can serve as a diagnostic for distinguishing between the two theories. As a consequence of the wh/sluicing correlation in (30), our account makes the prediction that focus sluicing is only found in languages in which at least one of the fronted wh-phrases undergoes overt focus movement, as opposed to wh-movement, in other words, if Bošković's analysis is the correct one. As the data at the end of section 5 have shown, many MWF languages, including Romanian, Russian, Polish, Czech and Serbo-Croatian allow for focus sluicing, and thus conform to Bošković's theory of wh-movement.[7]

One MWF language, however, Bulgarian, presents us with data that suggest that Bosković's theory is not applicable across the entire domain of Slavic languages, and thus that there are fronting processes that can multiply check—or re-check—a [wh]-feature on C. To see why, we need to turn to a detailed discussion of Bulgarian in the following subsection.

### *7.2 A case study of Bulgarian*

Starting from Rudin (1988), Bulgarian has always been placed center stage in the discussion on multiple wh-movement, due to the fact that this language manifests properties that classify it as one of the two major types of MWF languages: a so-called 'multiply-filled specCP' language (+MFS), in Rudin's terminology. Rudin's basic insight was that multiple wh-fronting languages of this type front all wh-phrases to one initial specCP-projection. The other type of MWF languages (including e.g. Serbo-Croatian) do not allow multiply filling specCP (they are –MFS), and accommodate only one wh-phrase in specCP, adjoining the rest of the clause-initial wh-phrases to IP. This kind of parametrization about a multiply filled specCP allowed Rudin to explain several differences between +MFS and –MFS languages, including, among others, the order of wh-phrases among each other, clustering effects between wh-phrases and extraction possibilities out of wh-islands.

Translating the nature of +MFS languages into a feature-based account, such as that of Pesetsky (2000), we can say that in such languages all wh-phrases move to specCP to check a [wh]-feature:

(51) $[_{CP}\ wh_{<+\mathbf{wh}>}\ wh_{<+\mathbf{wh}>}\ wh_{<+\mathbf{wh}>}\ C°_{<+\mathbf{wh}>}\ [_{IP}\ \ldots\ ]]$

In accounts like that of Bošković, where multiple feature checking on C is not allowed, the situation is slightly different: while all wh-phrases move to specCP, only the first one checks a [wh]-feature, the rest check a [focus] feature, with movement being triggered by the wh-phrases themselves:

(52) $[_{CP}\ wh_{<+\mathbf{wh}>}\ wh_{<+\mathbf{Foc}>}\ wh_{<+\mathbf{Foc}>}\ C°_{<+\mathbf{wh},+\mathbf{Foc}>}[_{IP}\ \ldots\ ]]$

As mentioned above, our wh/sluicing generalization can be used as a testing ground to differentiate between the two accounts: the prediction being that only in languages where at least one wh-phrase checks a [focus] feature (i.e. in a configuration like (52), but not in (51)) should focus sluicing be allowed. Before we can present the results of testing this prediction, however, we need to introduce one more complication about Bulgarian. As pointed out by Lambova (2001)—and as was also confirmed by our Bulgarian informants—the empirical lay of the land is in fact slightly different from that assumed in the Rudin-Bošković accounts: the original classification of Bulgarian as a +MWF-language only partially covers the variation present among dialects of Bulgarian. Lambova shows that Bulgarian has at least two distinct

[7] Hungarian is also a MWF language of this sort, which is in line with the analysis of multiple wh-fronting put forward in É.Kiss (1993). She argues that the linearly last wh-phrase always occupies specFocP.

dialects, which differ in the penetrability of the cluster of fronted wh-phrases: one dialect—which we will refer to as dialect A, following Lambova—does not allow the wh-cluster to be split up by parentheticals, while another dialect (dialect B) does. The patterns are illustrated in the following examples.

(53) * Koj, kazvash, kakvo koga e kupil? [Bulgarian, *dialect A*]
who you.say what when aux bought
INTENDED: 'Who bought what when, you say?'

(54) Koj, kazvash, kakvo koga e kupil? [Bulgarian, *dialect B*][8]
who you.say what when aux bought
'Who bought what when, you say?'

According to Lambova (2001), dialects A and B differ in the placement of their wh-phrases. Adhering to the single [wh]-feature checking theory of Bošković, Lambova proposes that in dialect A, all wh-phrases move to specCP, with the first one checking a [wh]-feature and the rest a [focus]-feature (cf. ((55)a). In dialect B, on the other hand, only one wh-phrase moves to specCP to check a [wh]-feature, while the others move to specFocP to check a [focus]-feature (cf. ((55)b).

(55) a. dialect A: $[_{CP}\ wh_{<+\mathbf{wh}>}\ wh_{<+\mathbf{Foc}>}\ wh_{<+\mathbf{Foc}>}\ C°_{<+\mathbf{wh,Foc}>}\ [_{IP}\ \dots\ ]]$
b. dialect B: $[_{CP}\ wh_{<+\mathbf{wh}>}\ C°_{<+\mathbf{wh}>}\ [_{FocP}\ wh_{<+\mathbf{foc}>}\ wh_{<+\mathbf{Foc}>}\ Foc°_{<+\mathbf{Foc}>\dots}\ [_{IP}\ \dots\ ]]$

Due to this dialectal split, the question of which features are checked in Bulgarian multiple wh-fronting needs to be handled separately for the two dialects. What are the predictions of our wh/sluicing correlation for the two dialects and the three distinct accounts that have been put forth for them in the literature? If Rudin's account (cf. (51)) is on the right track, Bulgarian should uniformly disallow focus sluicing, since in this case, the feature content of [E] is $[E_{[u\mathrm{wh}]}]$, in other words, sluicing is allowed only in wh-questions. If Bošković's proposal (cf. (52)) is on the right track, Bulgarian uniformly should allow focus sluicing, the prediction being that there are two types of [E]-feature: one with an $[E_{[u\mathrm{wh},(u\mathrm{Foc})]}]$-specification and one with an $[E_{[u\mathrm{Foc}]}]$-specification. The second type of [E] feature, $[E_{[u\mathrm{Foc}]}]$, allows for sluicing with focus remnants. The same prediction is made by the third account, that of Lambova. Since both dialects of Bulgarian have wh-phrases that check a [focus] feature only, both dialects possess an $[E_{[u\mathrm{Foc}]}]$ (next to the other one, which is $[E_{[u\mathrm{wh},(u\mathrm{Foc})]}]$). This feature allows for sluicing with focal remnants in both dialects.

Our findings with respect to Bulgarian show that there is a difference in the availability of focus sluicing in the two dialects. The dialect that does not allow for splitting the wh-cluster (dialect A) does not allow for focus sluicing either. Dialect B, however, does. The following example is thus judged differently in the two dialects:

(56) * in dialect A / ✓ in dialect B
Znaeh che Ivan e pokanil njakoj, no ne znaeh, che Boris.
knew that Ivan has invited someone but not knew that Boris
INTENDED: 'I knew that Ivan has invited someone, but I didn't know that it was Boris.'

This piece of data shows that the two dialects differ in the type of features checked by their wh-phrases: only dialect B has wh-phrases that overtly check a focus feature; in dialect A, the wh-phrases are confined to checking only [wh]-features. The latter dialect thus evidences that there are languages where [wh]-features can be multiply checked on C (along the lines of Rudin 1988 and Pesetsky 2000).

The data in (56) can furthermore be used as diagnostics for the proper analysis of the two dialectal patterns of Bulgarian wh-movement. The non-availability of focus sluicing in dialect A indicates that in this dialect, there is no wh-phrase that checks a focus feature, in other words, the proper account for this dialect is that of Rudin (cf. (51), as opposed to (55)a). The splitting dialect (dialect B) on the other hand, where focus sluicing is allowed has to have either the structure in (52), as argued by Bošković, or that in (55)b, as argued by Lambova. Given that Lambova's but not Bošković's account also gives a straightforward explanation for the possibility of splitting, we take Lambova's analysis to be on the right track for this dialect.

To summarize, our case-study of Bulgarian shows that the wh/sluicing generalization can be productively used to test the fine details of wh-movement in multiple wh-movement languages, n particular concerning the type of features checked by wh-phrases. Our discussion of Bulgarian dialects has revealed that multiple [wh]-feature checking is an available option, supporting proposals like that of Pesetsky (2000), contra those that do not allow for this option (like Bošković 1998a,b, 2002).

[8] There are various restrictions on splitting in dialect B. For example, splitting is only allowed between the first and the second wh-phrases, but never further down in the cluster. Second, splitting is not allowed if the wh-cluster is preceded by a topic. For details and the analysis of these effects, see Lambova (2001).

## 8. The broader picture: non-ellipsis as a diagnostic for ellipsis

In the remainder of this paper, we continue our investigations of multiple wh-movement languages, and turn our attention to the general issue of how to diagnose ellipsis. More specifically, we will be interested in the question to what extent non-elliptical sentences can be used to predict properties of elliptical ones. This question is of some theoretical importance because recent studies have shown that there are various contexts in which a so-called elliptical repair effect enables the occurrence of structures that are otherwise disallowed (for some of these, see Merchant 2008). We will add to the inventory of such effects by identifying the repair of a PF-illicit representation found in the domain of adjacency effects.

### *8.1 Where ellipsis and non-ellipsis run parallel: the case of multiple wh-slucing in multiple wh-movement languages*

To start the discussion with a context in which elliptical and non-elliptical sentences have properties in common, consider the case of multiple wh-sluicing. A quick look at the data tell us that all languages with multiple *wh*-movement in non-elliptical syntax allow for multiple *wh*-sluicing as well. We demonstrate this for six MWF-languages.

**Bulgarian**

(57) Njakoj e razljal ne što, no ne znam koj kakvo.
someone aux spilled something but not know who what
'Someone spilled something, but I don't know who what.'

**Romanian** (Hoyt and Theodorescu to appear)

(58) Ion a dat cuiva ceva, si vreau sa stiu cui ce.
Ion aux given someone something and I.want subj know who-D what
'Ion has given something to someone, and I want to know what to whom.'

**Hungarian**

(59) Tudom, hogy János adott mindenkinek valamit,
I.know that János gave everyone-D something-A
de nem tudom, kinek mit.
but not I.know who-D what-A
'I know that Ion has given something to everyone, and I want to know what to whom.'

**Serbo-Croatian** (Stepanović 2003)

(60) Neko je vidio nekog, ali ne znam ko koga.
somebody aux seen somebody but not know who whom
'Somebody saw someone, but I don't know who whom.'

**Polish** (Szczegelniak 2008)

(61) Jan napisał jakiś list do jakiegoś ucznia ale nie wiem który do którego
Jan wrote some letter to some student but not know which to which
'Jan wrote some letter to some student but I do know which to which student'

**Russian** (Grebenyova 2007)

(62) Každyj priglasil kogo-to na tanec, no ja ne pomnju kto kogo.
everyone invited someone to dance but I not remember who whom
'Everyone invited someone to a dance but I don't remember who invited whom.'

Moreover, the parallel between the elliptical and the non-elliptical constructions extends beyond the mere availability of multiple wh-fronting. It characterizes the available *interpretations* of multiple wh-movement as well. As Grebenyova (2007) argues, multiple wh-sluicing only allows for interpretations that are also available for multiple wh-movement without ellipsis in any given language. Russian, a language where multiple wh-movement is only compatible with a pair-list reading, only allows for multiple sluicing with a pair-list reading (cf. (62)). If the antecedent clause imposes a single-pair interpretation on the sluiced clause, the result is degraded, due to the fact that multiple wh-movement in Russian cannot have a single pair interpretation. This is shown in (63).

(63) ??Kto-to priglasil kogo-to na tanec, no ja ne pomnju kto kogo.
someone invited someone to dance but I not remember who whom
'Someone invited someone to a dance but I don't remember who invited whom.'

Hungarian shows the exact same phenomenon. In this language, too, there is a strict parallel between the readings multiple wh-fronting allows in non-elliptical sentences and in sluicing contexts. Multiple wh-fronting in Hungarian can only have a multiple pair reading (É. Kiss 1993). The following question can only be used in a context like (64)a, not in (64)b:

(64) Ki kinek hagyott egy üzenetet?
who who-D left a message-a
'Who left a message for whom?'
a. ✓ Everyone left a message for someone. I wonder who each person left a message for.
b. * A single person left a message for someone. I wonder who the person was and for whom he left a message.

Correspondingly, multiple sluicing is only compatible with a multiple pair scenario:

(65) * Valaki hagyott egy üzenetet valakinek. Nem tudom, hogy ki kinek.
someone left a message-A someone-D not I.know that who who-D
'Someone left a message for someone. I don't know who for whom.'

(66) Mindenki hagyott egy üzenetet valakinek. Nem tudom, hogy ki kinek.
everyone left a message-A someone-D not I.know that who who-D
'Everyone left a message for someone. I don't know which person for which person.'

Languages like Serbo-Croatian on the other hand, which do allow for a single pair reading for multiple wh-fronting (Stepanović 2003), allow for such readings in sluicing as well, as (60) above has shown.

The comparison between Russian, Hungarian and Serbo-Croatian must lead to the conclusion that the possibility of having multiple sluicing in a language is determined by its having multiple wh-fronting. Only languages that front multiple wh-phrases in non-elliptical sentences allow for multiple wh-sluicing as well, and with properties identical to that of non-elliptical constructions.[9] In the case of multiple wh-movement then, it can be established that non-elliptical structures can be used as diagnostics for elliptical constructions,[10] a default assumption that characterizes the kind of structural approaches to ellipsis that posit essentially ordinary syntax behind elliptical constructions.

### *8.2 Where ellipsis and non-ellipsis do not run parallel: the case of multiple focus sluicing in focus-movement languages*

In the present section we examine if the conclusion reached above can be upheld when it comes to multiple focus fronting. As section 5 has shown, focus sluicing is available in many multiple wh-movement languages as a consequence of the fact that these languages front focus constituents to FocP, the position that also hosts (at least some) wh-phrases. Some of the languages that front foci allow for multiple focus fronting as well, e.g. Serbo-Croatian, Polish and Russian. It should come as no surprise then that in these languages multiple focus sluicing is also attested. Consider the following examples from Serbo-Croatian and Polish:

**Serbo-Croatian** (B. Arsenijević p.c., T. Milicev p.c., M. Marelj p.c.)

(67) Tu knjigu Mariji je Jovan dao.
that book Marija-D aux Jovan given
'Jovan gave that book to Marija.'

(68) Jovan je dao nesto nekome, i mislim da je knjigu Mariji
Jovan aux given something someone and think.I that aux book Marija-D
'Jovan has given something to someone and I think that he gave a book to Marija.'

[9] A property of wh-movement that seems to be an apparent exception to this generalization at first sight is superiority effects. In this domain, mismatches between elliptical and non-elliptical constructions can be found. Serbo-Croatian does not show superiority in matrix questions, but it does in matrix sluicing; Russian shows no superiority in either matrix or embedded questions, but it does in both matrix and embedded sluicing. These mismatches, however, follow from independent properties of sluicing, such as the necessary presence of a CP projection in matrix sluicing or a parallelism effect with the antecedent clause. See Stepanović (2003) and Grebenyova (2007) for arguments to this effect.

[10] For an apparent exception to this generalization, see Lasnik (2006). English does allow for multiple wh-sluicing (cf. i) although multiple wh-fronting is ill-formed (cf. ii):

(i) ? One of the students spoke to one of the professors, but I don't know which to which.
(ii) * One of the students spoke to one of the professors, but I don't know which to which spoke.

As Lasnik shows, however, the second wh-phrase in cases like (i) does not undergo ordinary wh-fronting (to CP), but rather rightward movement similar to focusing. English therefore does not constitute counterevidence to our generalization.

**Polish** (B. Citko, G. Korbecka p.c.)

(69) Tamtą książkę Marii Jan dał.
that book-a Maria-D Jan gave
'Jan gave that book to Maria.'

(70) Jan dał coś komuś i myślę, że książkę Marii.
Jan gave something someone and I.think that book Maria-D
'Jan has given something to someone and I think that he has given a book to Maria.'

On the basis of the conclusions drawn in the previous section, where it was shown that properties of multiple wh-movement in elliptical contexts are determined by the properties of multiple wh-movement in non-elliptical contexts, it would be natural to interpret the facts in (67)-(68) in the same light: the availability of multiple focus in elliptical contexts is determined by multiple focus fronting in non-elliptical contexts. The validity of this generalization, however, seems less clear when we consider the behavior of Hungarian and Romanian in this respect. In these languages, we do not witness the expected parallel: multiple focus sluicing is allowed notwithstanding the fact that multiple focus fronting in non-elliptical contexts is not.

**Hungarian**

(71) * EGY KÖNYVET MARINAK adott János.
a book Mari-D gave János
INTENDED: 'János gave a book to mari.'

(72) János adott valamit valakinek, és azt hiszem, hogy EGY KÖNYVET MARINAK.
János gave something someone-D and that I.think that a book Mari-D
'János gave something to someone and I think he gave a book to Mari.'

**Romanian** (C. Constantinescu, A. Fălăuş, D. Raţiu p.c.)

(73) Q: Deci Petre a văzut-o pe Ilona?
so Petre has seen-cl ACC Ilona
'Did Peter see Ilona?'
A: ?* Nu, ION PE MARIA a văzut -o!
no Ion ACC Maria has seen-cl
INTENDED: 'No, Ion saw Maria.'

(74) Nu sunt sigură cine de ciné s-a îndrăgostit, dar bănuiesc
not am sure who of whom refl-has enamored but I.suspect
că ION DE MARIA.
that Ion of Maria
'I am not sure who fell in love with whom, but I think that Ion fell in love with with Maria.'

At first sight, these facts could lead one to conclude that in Hungarian and Romanian ellipsis does *not* track properties of non-ellipsis, suggesting that the generalization in the previous section must be discarded. This is, however, not the tack we would like to take. We believe that the generalization is valid for Hungarian and Romanian focus movement as well, but that full syntactic parallelism between ellipsis and non-ellipsis breaks down in these languages as a result of an ellipsis-induced *repair effect*.

Ellipsis-induced repair effects have been identified in many elliptical constructions, starting from the absence of island effects in most sluicing contexts (first mentioned in Ross 1969) to many otherwise grammatically deviant structures that seem to underlie grammatical ellipses (see Merchant 2008 for an overview of some of these). Current thinking about elliptical repair effects ties them to properties of the syntax-phonology interface, capitalizing on the fact that ellipsis involves PF-deletion. When PF-deletion eliminates material that is deviant for the PF-interface, ellipsis repair shows up, and a structure that is otherwise ungrammatical becomes grammatical. We propose that it is ellipsis repair of this sort what applies in (72) and ((74).

To see what kind of repair we are dealing with, let us begin by observing that the two languages that show deviant behaviour, namely Hungarian and Romanian, are different from those languages that show parallel behaviour (Serbo-Croatian, Polish and Russian), in that focus fronting requires adjacency between the fronted focus item and the verbal predicate:

**Hungarian**

(75) * Azt hiszem, hogy PÉTERT Mari { hívta meg / meghívta}.
it-A I.think that P-A Mari invited PV / PV.invited
INTENDED: 'I think that Mari invited Péter.'

**Polish**

(76) Myślę, że PIOTRA Maria zaprosiła.
I.think that Piotr-A Maria invited
'I think that Maria invited Piotr.'

In other words, there seems to be a correlation between the absence of multiple focus fronting and the adjacency requirement between a fronted focus and a verb. It is illustrated in the table below.

(77)

| | multiple focus | | obligatory focus – verb adjacency |
|---|---|---|---|
| | fronting | sluicing | |
| Hungarian | * | ✓ | yes |
| Romanian | * | ✓ | yes |
| Serbo-Croatian | ✓ | ✓ | no |
| Polish | ✓ | ✓ | no |
| Russian | ✓ | ✓ | no |

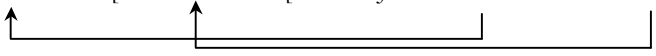
The reason why multiple focus is not allowed in languages with a focus-verb adjacency restriction is because more than one focus constituent cannot satisfy the adjacency requirement of being next to a verb. In case of multiple focus fronting, the rightmost focus intervenes between the verb and the leftward focus, forcing the latter to violate adjacency.

Taking the correlation in (77) seriously in the explanation of ellipsis repair, we would like to propose that the focus-verb adjacency requirement is essentially phonological: nothing is allowed to intervene between a fronted focus and the finite verb at PF.[11] This can be implemented by saying that although multiple focus movement does take place in narrow syntax in Hungarian and Romanian (just as in the other languages of the table in (77)), these languages cannot spell out the result of multiple focus movements at PF. The phonological restriction on adjacency with the verb forces one of the movement chains to be spelled out at the foot (cf. Bošković 2002, Stjepanović 1999). However, when sluicing applies to a multiple focus fronting construction, ellipsis elides the finite verb, and the phonological restriction on adjacency is trivially satisfied for both focus items. As a result, the narrow syntactic movements can be spelled out in the left periphery.

To see how this works, consider the following sample derivations of non-elliptical and elliptical constructions in Hungarian. The ungrammaticality of (71), repeated here as (78), follows from the fact that both foci cannot be spelled out in the preverbal FocP at PF (cf. (79)). What happens, then, is that at PF, the higher copy of the second focus gets deleted and the focus shows up in the postverbal position, at the foot of the chain (cf. (80)). This yields a non-elliptical sentence with one preverbal and one postverbal focus.

(78) * EGY KÖNYVET MARINAK adott János.
a book Mari-D gave János
INTENDED: 'János gave a book to mari.'

(79) [$_{\text{FocP}}$ EGY KÖNYVET [$_{\text{FocP}}$ MARINAK [$_{\text{TP}}$ adott János EGY KÖNYVET MARINAK]]]



(80) [$_{\text{FocP}}$ EGY KÖNYVET [$_{\text{FocP}}$ ~~MARINAK~~ [$_{\text{TP}}$ adott János ~~EGY KÖNYVET~~ MARINAK]]]

The left peripheral part of the structure in (79), however, can itself surface in a scenario in which sluicing applies at the PF interface. In this case, the TP-complement of FocP gets elided, taking with it the verb and all lower copies of the focus constituents. As a consequence, the adjacency requirement between the fronted foci and the finite verb is trivially met, and both focus constituents are spelled out in the preverbal focus position resulting in a sentence like (72), partially repeated here as (82).

(81) [$_{\text{FocP}}$ EGY KÖNYVET [$_{\text{FocP}}$ MARINAK ~~[$_{\text{TP}}$ adott János egy könyvet marinak]~~]]

[11] The phonological nature of the adjacency requirement might be linked the special phonological requirements of contrastive focus in these languages, like the eradicating stress pattern that focus imposes on the rest of the clause. We leave this issue for further research.

(82) (… és azt hiszem hogy) EGY KÖNYVET MARINAK.
and it-A I.think that a book Mari-D
'… and I think that he gave a book to Mari.'

If our proposal is on the right track, and the observed pattern is due to a PF-elliptical repair effect, we can successfully account for the availability of multiple focus sluicing in languages where multiple focus fronting is not allowed in non-elliptical contexts.

Our analysis of multiple focus fronting as presented above receives some independent empirical support from Hungarian. Recall that our account capitalizes on the assumption that multiple focus sluicing involves movement of both focal items into the preverbal focus position (cf. (79)). A restriction we have not mentioned up to this point is that the two focus phrases in multiple focus sluicing in Hungarian necessarily represent a so-called *complex focus construction* (Krifka 1991), i.e. a case of multiple focus in which the two focus constituents make up a pair of items that are related to a single semantic focus operator. This kind of multiple focus can be distinguished from *'true' multiple focus* constructions, in which the two foci appear unrelated in the semantic representation. The latter type can be found in examples like the non-elliptical sentence in (83), where the presence of an *only*-operator accompanying each focus phrase indicates the true multiple focus reading.

(83) Csak az elsősök vizsgáznak csak egy tárgyból.
only the first.year.students take.exam only one subject-from
'Only the first year students take an exam in only one subject.'

Interestingly, such true multiple focus constructions are unavailable in multiple focus sluicing.

(84) Nem emlékszem pontosan, melyik évfolyam hány tárgyból vizsgázik.
not remember.1sg exactly which students how.many subject-from take.exam
* De úgy emlékszem, hogy csak az elsősök csak egy tárgyból.
but so remember.1sg that only the first.year.students only one subject-from
'I don't recall exactly which students take an exam in how many subjects. But I do remember that only the first year students take an exam in only one subject.'

Now, the lack of true multiple focus constructions in sluicing can explained by the multiple fronting process proposed in (79) in which both foci end up in the preverbal FocP. As Surányi (2003) has argued, the crucial difference between complex focus and true multiple focus is that only complex focus constructions involve movement of both foci to the preverbal FocP. True multiple focus exhibits postverbal scope for the second focus expression, ruling out a representation in which both focus items are fronted.[12] These data thus provide support for our proposal that accounts for the availability of multiple focus sluicing in Hungarian as an effect of an elliptical repair mechanism.

## 9. Conclusions

This article has proposed a new, cross-linguistically refined theory of sluicing and has examined the predictive force of this new theory in various domains of wh- and focus syntax. We have started out by showing that the restriction of sluicing to wh-questions is not a reliable test for diagnosing sluicing cross-linguistically. Instead, we have put a new generalization in place, which informally states that the types of sluicing in any given language tracks the overt syntax of wh-movement in that language. This allows for any kind of sluicing remnant that undergoes checking of features identical to the wh-phrase in overt syntax. Prime examples of such constituents are focus phrases in languages like Hungarian.

This new generalization was put to work in the second part of the article, where we have shown that the availability of focus sluicing can provide new evidence for or against syntactic accounts positing that wh-movement and focusing target the same left peripheral position. In a case study about Italian and Venetian, we have argued that the lack of focus sluicing argues against positing identical placement for wh- and focus items in those languages. In another case study of Bulgarian, we have concentrated on the analysis of multiple wh-movement and have shown that one dialect of Bulgarian employs multiple wh-feature checking, while another does not. In the last section, we have used the diagnostics of non-elliptical structures to identify properties of elliptical ones and have shown that discrepancies between non-elliptical and elliptical syntax are due to the fact that ellipsis can repair certain PF-deficient configurations. In this

[12] Note that the details of Surányi's account of complex focus are slightly different from ours. For him, the secondary focus moves to FocP at LF, rather than in overt syntax. This difference, however, does not affect the point made here: what is relevant is that in both approaches, the secondary focus is only allowed to reach the preverbal FocP in complex focus constructions.

domain, we have identified a new type of elliptical repair effect, one that allows for elliptical constructions that violate PF-adjacency restrictions in non-elliptical contexts.

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