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A COMPARATIVE PERSPECTIVE ON INTERVENTION EFFECTS ON LEFT BRANCH EXTRACTIONS IN SLAVIC[1]

1. Introduction

At least up to a certain extent, the Slavic languages all allow left branch extractions (LBE), but they differ as to how flexibly this construction can be employed. There is a fairly restrictive subtype, characteristic for Bulgarian, Slovenian, and Sorbian, in which the construction is, e.g., constrained by intervention effects. We will call this restrictive version of the construction "weak LBE". In the other Slavic languages, intervention by a negation/quantifier has no negative effect on the grammaticality of the construction, so LBE can be called "strong" in these languages. We will discuss the phenomenon from a semantic, prosodic and syntactic perspective, and sketch an analysis in terms of the distinction between phrasal and head movement. The major observation is that the difference concerning intervention effect goes hand in hand with further differences among the left branch extraction constructions of the Slavic languages and along distinct prosodic patterns. Further variation in these additional respects seems to motivate a third, "superstrong" type of the construction.

2. A First Formulation of the Problem

The Slavic languages are quite productive with respect to the formation of discontinuous noun phrases. E.g., both major types of the construction identified

[1] The data presented here is based on the questionnaire of the Discontinuous Noun Phrase project (FA 255/5) financed by the Deutsche Forschungsgemeinschaft until 2010. We are very grateful to our numerous informants, who either filled in the questionnaire or helped us in other ways: Bistra Andreeva, Boban Arsenijevic, Tijana Asic, Joanna Blaszczak, Alena Burchak, Damir Ćavar, Malgosia Ćavar, Katja Jasinskaja, Milena Kühnast, Denisa Lenertová, Lanko Marusic, Liljana Mitkovska, Madlena Norberg, Alla Paslawska, Svetlana Petrova, Pawel Rutkowski, Radek Simik, Penka Stateva, Luka Szucsich, Ivo Szucsich, Bartosz Wiland, Marta Wierzba, Jacek Witkos, Benjamin Zivkovic.

in [Fanselow & Ćavar 2002]– inverted and simple splits–occur in all Slavic[2] languages, or at least in some dialect thereof. The construction is illustrated in (1) with a Ukrainian example from [Féry, Paslawska & Fanselow 2007].

(1) a. INVERTED DISCONTINUOUS NOUN PHRASE

Knyžku	Marija	pročytala	cikavui
book.ACC.FEM	Mary	has-read	interesting.ACC.FEM

'Mary has read an interesting book.'

b. SIMPLE SPLITS (LEFT BRANCH EXTRACTION)

U	jake	vin	pojide	misto?i
In	which	he	will-go	town?

'In which town will he go?'

In an inverted discontinuous noun phrase (1a) (also known as "split topicalization"), the most deeply embedded head (normally, the noun) of the noun phrase appears at the left periphery of the clause. The grammatical properties of the construction seem fairly uniform among the Slavic languages, and will not concern us here.

In a simple discontinuous noun phrase or left branch extractions (LBE) (1b), the highest head or specifier of the noun phrase is displaced to the left edge of the clause. The problem tackled in this paper is the following: the grammatical possibilities linked to LBE are not uniform in the Slavic languages.

LBE pose a special problem for linguistic theory because they show a peculiar grammatical behaviour. On the one hand, LBE formation seems more flexible that standard movement (e.g., the displaced category does not always appear to be a standard constituent), while on the other hand, the construction appears more constrained than standard movement in other respects. The array of facts

[2] Our survey covers the "major" Slavic languages Belorussian, Bulgarian, Croatian, Czech, Macedonian, Polish, Russian, Serbian, Sorbian, Slovak, Slovenian, Ukrainian.

that we will start out from here has been amply discussed for French: it is the so-called intervention effect (cf. [Butler & Mathieu 2004] for an overview): LBE are impossible in French when a negation, a quantifier, or a focused element intervenes between the preposed quantifier and the remnant, cf. (2a). In contrast, the displacement of the unsplit wh-phrase may cross the negation without any problem. A similar contrast can be observed for German, cf (3).

(2) a. *Combien n'as-tu pas lu de livres?
how many neg-have-you not read of books
'How many books have you not read?'
b. Combien de livres n'as-tu pas lus?

(3) a. *Was hast Du nicht für Bücher gelesen?
what have you not for books read
'What kind of books have you not read?'
b. Was für Bücher hast Du nicht gelesen?

It comes as a surprise, then, that we do not see intervention effects for LBE in all Slavic languages. In one group of languages, composed of Bulgarian, Slovenian and Sorbian[3], the construction is "weak" and falls victim to intervention effects (as illustrated in (4) for Slovenian), in the other group, to which the rest of the Slavic languages belong, the construction seems "strong" and resists such effects, as shown in (5) for Serbian.

(4) *Precej Marija ni videla stolov
many Marija NEG-AUX seen chairs
'Mary has not seen many chairs.'

(5) Koliko Petar ne voli kola?
how many Peter not like cars
'How many cars doesn't Peter like?'

[3] In Sorbian, the intervention by a quantifier may be acceptable, though.

What could be the source of the difference between weak and strong LBE?

3. Intervention and Semantics

Intervention effects are usually understood as an uninterpretability of a structure that arises when a wh-phrase–or another quantifier–stands in the scope of negation, a quantifier or a focusing operator. The following examples from Korean [Kim 2002] illustrate the effect. Wh-phrases may remain *in situ* in this language (6b), but a focused phrase cannot intervene between the wh-word and the wh-Comp (Q) in terms of structure (6a). When the wh-phrase is moved to a position higher than the focused phrase, the structure is fine again (6c).

(6) a. *Minsu-man nuku-lûl po-ss-ni? (Korean)
Minsu-only who-ACC see-PAST-Q
'Who did only Minsu see?'

b. Minsu-nun nuku-lûl po-ass-ni?
Minsu-TOP who-ACC see-PAST-Q
'Who did Minsu see?'

c. Nuku-lûl Minsu-man po-ass-ni?
who-ACC Minsu-only see-PAST-Q
'Who did only Minsu see?'

The wh-phrase must enter a binding relation to the quantificational Q-head in Comp. This relation seems impossible when a focusing quantifier c-commands the wh-phase but is c-commanded by the wh-Comp as in (6a).

The effect also arises in German when wh-phrases are not moved to their scope position, as the contrast in (7) shows for multiple questions: the lower, unmoved, wh-phrase must not be c-commanded by a negation.

(7) a. *Wen hat niemand wo gesehen?
whom has nobody where seen
'Where did nobody see whom?'

b. Wen hat Luise wo gesehen?
whom has Luise where seen
'Where did Luise see whom?'

c. Wen hat wo niemand gesehen?
whom has where nobody seen
'Where did nobody see whom?'

The so-called partial movement construction (see e.g. [McDaniel 1989]) is also affected by the constraint. In this construction, a wh-phrase originating in a complement clause can take matrix scope although it only moves to an embedded Spec,CP position. The matrix Spec,CP position is filled by the most unmarked wh-expression (i.e. , *was* 'what') in this case. No negation may appear between the scope marker and the wh-phrase.

(8) a. Was denkst du wen sie sah?
what think you who she saw
'Who do you think she saw?'

b. *Was denkst du nicht wen sie sah?
what think you not who she saw
'Who do you not think that she saw?'

Crucially, the wh-phrase affected by the intervention effect is not moved to the Spec,CP position corresponding to its scope, and a negative operator intervenes between the phrase and the scope position.

Intervention effects of this sort have been documented for a wide variety of languages, and there are proposals such as [Beck 2006] or [Butler & Mathieu 2004], which derive them from fundamental assumptions about the

interpretation of questions and focus operators. Essentially, the constellation in (9) is blocked, in which part of the semantic information linked to the wh-expression is in Spec,CP (e.g., a Q-operator binding an *in situ* wh-phrase in languages like Korean) and part of it remains *in situ*, with an operator such as focus or negation intervening. No effects arise when the complete semantic content of the wh-phrase appears in Spec,CP, as in the case of full overt movement (10).

(9) Q_i … OP … wh_i

(10) wh_i ... OP … t_i

The presence or absence of an intervention effect should allow us to draw strong conclusions about the grammatical structure of a sentence.

Returning to the difference between strong and weak LBE, a first question to ask is whether the languages lacking intervention effects in LBE could simply have a different semantic system so that intervention effect could not arise. The answer is negative, because we do observe clear intervention effects of the sort just illustrated for Korean and German in languages with strong LBE such as Polish, cf. the partial movement construction (11) modelled after (8).

(11) Jak myślisz kogo widział
how you-think who.acc saw
'Who do you think he saw?'
*Jak nie myślisz kogo widział
how not you-think who.acc saw
'Who do you not think that he saw?'

This suggests that the difference between weak and strong LBE resides in the construction itself. The easiest solution is to assume that weak LBE are linked to LF representations such as (9) in Bulgarian, Slovenian and Sorbian, so that an intervention effect can arise. This LF representation fits perfectly the surface

string in which the operator is indeed separated from the restriction of the operator in the LBE/simple split construction. For the other Slavic languages, the Logical Form of the strong LBE construction should look like (10): it seems that the splitting up of the noun phrase in the syntax is not mirrored in the semantics. Rather, the complete semantic representation of the noun phrase seems to have been displaced at LF.

4. More differences

Strong and weak LBE differ not just with respect to the presence of an intervention effect. In this section, five syntactic properties are distinguished which enter the distinction between the two types of LBE. First, in a strong LBE, as represented by the Ukrainian construction, the choice of the leftmost element going to the left edge of the clause seems quite free: a genitive specifier (12a), a wh-determiner (12b), a numeral (12c), a quantifier (12d) and an adjective (12e) may be preposed.

(12) a. Chyja chytala mama knyzhku?
Of-whom read mother book?
b. Chyju ty bachyv mamu?
whose you saw mother?
c. Try maje Marija krisla.
Three has-got Mary chairs
d. Bahato maje Marija krisel.
Many has-got Mary chairs
e. Cikavu Marija prochytala knyzhku.
interesting.acc.fem Mary read book

The same richness can be observed in other Slavic languages such as Russian, Serbian, Czech and Macedonian[4] – in fact in exactly the Slavic languages that

[4] Bošković (2005) claims that Macedonian has no adjectival LBE, but this is not in line with the judgments of our two informants.

have a strong LBE. However, not all Slavic languages allow this freedom, a fact that has already been addressed in the literature. [Bošković 2005] claims that Bulgarian–a language with weak LBE– disallows adjectival LBE, in contrast to Serbian or Czech. This view needs to be qualified because there are speakers of Bulgarian who accept (13) in addition to wh-determiners and non-quantifiers (14a,b) in LBE constructions. (13) is, however, pragmatically marked, and seems licensed, in particular, in a context that is unusual for LBE in other Slavic languages: the adjective must denote given information.

(13) Cerven-a toj kupi kola, a ne motor.
Red-F he buy.3SG.AOR car.F, but not motorbike.M
'As for red-coloured, he bought a car, not a motor bike.'

(14) a. Tri kupi stol-a
Three buy.3SG.AOR chair.M-PL
'She bought three chairs.'

b. Kak-vi vidja Maria stol-ove?
What.sort.of-PL see.3SG.AOR Mary chair.M-PL?
'What sort of chairs did Mary see?'

In addition, LBE are not acceptable for all speakers of Bulgarian.

In Slovenian, we find a similar picture. LBE are fine in the case of wh-questions (15), but the construction is very marginal for a quantifier like *precej* 'many' and quite impossible for numerals and adjectives.

(15) Koliko je Peter kupil stolov?
How-many aux Peter bought chairs
'How many chairs did Peter buy?'

(16) ??Precej je Peter videl stolov.

Many aux Peter seen chairs
'Peter has seen many chairs.'

Our informant for Lower Sorbian found LBE for wh-phrases and 'many' grammatical but unacceptable for numerals and adjectives. This suggests the following correlation:

	strong	weak
Intervention effects	No	Yes
Categorial restrictions	No	Yes

It can be added that LBE in French behaves as expected under this perspective: it is not only subject to the intervention effect, but also heavily restricted to a few items such as *combien* 'how many' and *beaucoup* 'many'.

Second, in Polish (17) the highest head is not the only element that can be displaced in an LBE construction: it can be accompanied by the next lower head(s).

(17) Ile interesujacych przeczytałeś książek?
how.many interesting you read books
'How many interesting books have you read?'

The same constructions are fine in Russian, Ukrainian, Croatian and Macedonian. According to one of our Serbian informants, the movement of more than one word in (18) is possible but dispreferred.

(18) Nove dobre sam procitao knjige.
New good am read books
'I read good new books.'

In Bulgarian, Sorbian, and Slovenian, such constructions are disallowed. There is thus a link between the "strength" of LBE and the complexity of the material that is preposed: in weak LBE constructions, only a single word may be displaced. We find the displacement of more than one word to the left edge of the clause in strong LBE constructions only. Unfortunately, the correlation summarized in the last line of our table is not perfect, because Czech and Belorussian disallow complex fronting.

	strong	weak
Intervention effects	No	Yes
Categorial restrictions	No	Yes
Complex fronting	Sometimes	Never/No

Third, the grammatical functions that may be affected by LBE are also not invariant across the Slavic languages. As we can see in (19) LBE are fine for all grammatical functions in Russian, (but note that the fronting of a genitive specifier does not work for transitive subjects). In this respect, Ukrainian patterns with Russian.

(19) a. Mnogo on prochital knig
many.ACC he read books.GEN

b. Mnogo prochitalo studentov knigu
many read students.GEN book.ACC

c. Mnogim vy dali knigam pervyj priz
many.PL.DAT you gave books.DAT first.ACC prize.ACC

In contrast Slovenian and Bulgarian LBE are limited to direct objects and impossible for indirect objects and subjects. In Sorbian, LBEs formed from these grammatical functions are highly marked or ungrammatical (cf. (20)).

(20) a. Kak wjele sy kupił knigłow?

how many have bought books
'How many books have you bought?'

b. *Kak wjele jo kupiło studentow knigły?
how many have bought students books
'How many students have bought books'

c. ??Kak wjele sy ty posrědkował knigłam myto?
how many have you awarded books prize
'How many books have you awarded a prize?'

Fourth, this contrast between Russian/Ukrainian and the languages with weak LBE suggests that LBE are subject to the usual island effects that arise with non-complements (the so-called CED effects of [Huang 1982]) while strong LBE are not. Unfortunately, the correlation is much less crisp than one would like, because the strong LBE of Polish is confined to direct objects, too. And the remaining languages allow LBE for subjects while they ban LBE for indirect objects[5].

	strong	weak
Intervention effects	No	Yes
Categorial restrictions	No	Yes
Complex fronting	Sometimes	Never
CED respected	Sometimes	Always

And finally, the strength of the LBE in a language also seems to predict the status of the construction illustrated by Serbian in (21).

(21) Crvene je Marija videla tri knjige.
Red is Mary seen three books
'Mary has seen three books.'

[5] But one of our three Croatian informants also allows the splitting of datives.

(21) differs from the run off the mill LBE constructions in that the fronted adjective is not the highest head in the NP/DP, rather, when the adjective goes to the left edge, a numeral is stranded together with the nominal head. In spite of the fact that the construction is rarely discussed in the literature, it is quite widespread among the Slavic languages. Again, as expected, the construction is absent in Slovenian and Sorbian, and is questionable in Bulgarian. For the other languages, our informants accepted the structure.

	strong	weak
Intervention effects	No	Yes
Categorial restrictions	No	Yes
Complex fronting	Sometimes	Never
CED respected	Sometimes	Always
Crossing of numeral ok?	Yes	No

5. A sketch of an analysis

We may conclude from the preceding sections that five properties distinguish weak from strong LBE: intervention effects, categorical restrictions, complex fronting, application of the CED, and crossing of a numeral. We propose to derive these properties by employing two types of syntactic models that have already been discussed in the literature on LBE.

As mentioned above, we take the presence/absence of intervention effects as a starting point for our treatment. When there is an intervention effect, it is highly likely that the NP/DP has not been fronted completely in syntactic terms – in line with the prima facie surface structure evidence, in which only part of the NP/DP has reached the left edge. So let us see how weak LBE can be captured.

The partial fronting may be due to head movement (22a), as proposed, e.g., by [Grebenyova 2012] for Russian, remnant movement of a DP out of which NP was extracted, see [Franks & Progovac 1994], as illustrated in (22b), or the

extraction of an AP (or a NumP?) adjoined to NP from than NP, as proposed by [Bošković 2005].

(22) HEAD MOVEMENT (HM)

a. $[_{DP}\ A\ N] \rightarrow$

$A \ldots\ldots [_{DP}\ t_A\ N]$

REMNANT MOVEMENT (RM)

b. $[_{DP}\ [_{AP}\ A\ NP]] \rightarrow$

$NP \ldots [_{DP}\ [_{AP}\ A\ t_{NP}]\ ] \rightarrow$

$[_{DP}\ [_{AP}\ A\ t_{NP}]\ ] \ldots NP \ldots \sout{[_{DP}\ [_{AP}\ A\ t_{NP}]]}$

ADJUNCT MOVEMENT (AM)

c. $[_{NP}\ AP\ NP] \rightarrow$

$AP \ldots [_{NP}\ t_{AP}\ NP]$

In all the three models, the intervention effect can be made follow, since the DP/NP has not been moved completely. All models predict that CED effects should arise, because they imply that material is extracted from a category that is an island. The head movement constraint [Travis 1984] blocks the crossing of a numeral in HM. There is also no derivation for a crossed numeral in RM. It is less easy to see how numeral crossing could be prevent in an AM model, unless one assumed that numerals project a NumP above NP even when APs are simply adjoined. Then the extraction of AP out of NumP may be blocked by the means proposed by [Bošković 2005] for the movement out of DPs.

The ban against the fronting of complex material in weak LBE follows straightforwardly in a HM account, while RM would allow such constructions. If the left periphery can be targeted only once in a weak LBE, AM captures the observation as well.

We conclude that most current models of LBE capture the properties of the construction when it is weak.

If we analyse strong LBE as an instance of the movement of the whole DP or NP, we predict that there are no intervention effects: they never affect XPs which are moved completely to their scope position. But how is movement of the complete phrase compatible with the splitting of the DP we observe in terms of word order? [Fanselow & Ćavar 2002] have proposed a copy and deletion account of LBE that can account for the data under discussion. Following [Chomsky 1993], they assume that movement is a combination of a copying process with a deletion process. In standard movement contexts, the lower copy is deleted completely in the movement constellation, see (23a). When the upper copy is deleted, covert movement (23b) is achieved. [Fanselow & Ćavar 2002] argue that the deletion process can also partially apply to both copies created by movement: some material is kept in the upper copy, and the remnant appears in the lower one, as shown in (23c). (23c) also illustrates how strong LBE constructions may be analyzed as phrasal movement: the complete DP is copied, but the complement of the highest (=attracted) head is deleted in the upper copy, and must (therefore) be retained in the lower copy. See [Fanselow & Ćavar 2002] for more technical details.

(23) STANDARD OVERT MOVEMENT

a. $[_{XP}$ abcd] →

$[_{XP}$ abcd] …. $[_{XP}$ abcd] (copying) →

$[_{XP}$ abcd] …. $[_{XP}$ ~~abcd~~] (deletion of lower copy)

STANDARD COVERT MOVEMENT

b, $[_{XP}$ abcd] →

$[_{XP}$ abcd] …. $[_{XP}$ abcd] (copying) →

[$_{XP}$ ~~abcd~~] …. [$_{XP}$ abcd] (deletion of upper copy)

DISTRIBUTED DELETION

c. [$_{XP}$ abcd] →

[$_{XP}$ abcd] …. [$_{XP}$ abcd] (copying) →

[$_{XP}$ a~~bcd~~] …. [$_{XP}$ ~~a~~bcd] (distributed deletion)

Crucially, since the complete phrase is fronted, intervention effects will not arise. The absence of category restrictions simply suggests that the partial deletion process is insensitive to these. Complex fronting is not blocked on principled grounds because there are no a priori restrictions on how much material can be kept in the left copy. Since nothing is extracted from a DP, island effects are not expected to affect the construction. Finally, if the deletion process need not affect peripheral elements only, the crossing effects in (21) can also be captured.

In a nutshell, we propose that strong LBE arise in the context of distributed deletion after the fronting of a full DP, while weak LBE are due to the movement of only a part of a DP/NP in the overt syntax.

6. Superstrong LBE?

The strong LBE in Slavic have many properties in common, yet they are not uniform. There appears to exist a "superstrong" LBE in some languages (or some dialects of some languages) that is characterized by the apparent violation of further syntactic constraints.

In Croatian and Russian (but not in Polish), the Coordinate Structure Constraint [Ross 1967] can apparently be violated in strong LBE. In (24) (taken from [Pereltsvaig 2008]), illustrating Russian, and (25) (=(27) of [Franks & Peti-Stantic 2006]), illustrating Croatian, the possessive pronoun modifies the left part of the coordination only. In a theory involving the extraction of part of the

noun phrase, this would violate the CSC. Given that the CSC is one of the strongest syntactic constraints, (24) and (25) lend further support to the view that LBE is not directly caused by movement in these languages.

(24) Ja **tvoi** vystirala č**ulki** i rubašku.
I your washed stockings and shirt
'I washed your stockings and a shirt.'

(25) a. Moja sestra i njen muž su mi ga pokloniti.
'My sister and her husband gave it to me.'
b. **Moja** su mi ga **sestra i njen muž** pokloniti.[6]
'It is MY sister and her husband who gave it to me.'

In Serbian and Russian, the left edge possessive also does not have to modify the argument from which it comes – it may also modify the specifier of the DP, as shown in (26) for Serbian. We know of no standard instance of movement that could extract an XP from specifier of a DP.

(26) Čije si video tetke kumu?
whose did you see (whose) aunts stepmother
'Whose aunts' stepmother did you see?'

As is well know, proper names can be split up in Serbian, and some dialects of Russian.

(27) **Lava** čitam **Tolstoja**.
Leo read.1SG Tolstoy
'I read Leo Tolstoy.'

Polish, on the other hand, is quite restrictive in all these aspects.

[6] Note that the clitics *su mi ga* interrupts the DP *moja sestra*, but prosodically *moja su mi ga sestra* is one prosodic phrase.

A factor common to all the cases considered is that the split seems to break up an otherwise stable syntactic unit. [Agbayani & Golston 2010] observe similar properties in Ancient Greek, and argue that a syntactic movement account cannot capture such data. We agree with them in this conclusion, but we do not think that the data strongly motivate a movement in the phonological component of grammar. Rather, the data are amenable to a treatment in the Fanselow & Ćavar model as well. In this approach, the discontinuity of the phrase comes about by a deletion in both copies created by movement. Normally, this deletion process should affect syntactic constituents because syntactic constituency correlates strongly with prosodic constituency. But suppose that in the superstrong construction, the deletion may apply after a prosodic reorganization when constraints of the information structure are taken into account, e.g. when the contrasted part of the proper name is set off from the given part. If deletion can apply to the structure thus generated, we expect that phrasal boundaries can be ignored.

We leave it open here whether this difference within the distributed deletion model is really a difference between languages, and not a difference in the handling of the deletion process by different speakers.

7. Correlates of weak and strong LBE in prosody

The relevance of information structure and prosody for word order variation in Slavic languages has been underlined in the literature, starting with the Prague School ([Mathesius 1929, 1932]; [Daneš 1960]; [Firbas 1992]) and continuing until today in recent works (for example [Mehlhorn 2002]; [Sekerina 1999]; [Meyer & Mleinek 2006] for Russian, [Kučerová 2007]; [Sturgeon 2008] for Czech, [Eschenberg 2007] for Polish, [Andreeva 2007] for Bulgarian, [Bašić 2005]; [Godjevac 2006] for BCS, and [Jasinskaja 2013] for a review of different languages). The ‘free’ word order is mirrored by the plasticity of prosody, and together they are powerful means for the expression of information structure.

What resorts from a survey of this literature is that all Slavic languages separate a sentence-initial topic from the comment in the remaining part of the sentence in phrasing the topic in a separate prosodic domain and providing it with a pitch accent, usually with a rising contour, but not necessarily: Russian typically use a falling contour for contrastive topics ([Jasinskaja 2013]). All languages mark a narrow focus with the main pitch accent of the sentence and pre-nuclear accents on given and new constituents. And they all deaccent post-nuclear material, allowing marginally post-nuclear phrase accents or just weak post-nuclear pitch accents in some circumstances (see for instance [Andreeva 2007] for postnuclear accents in Bulgarian).

The discontinuous nominal construction investigated here illustrates the prosodic properties of Slavic languages very clearly. In [Féry, Paslawska & Fanselow 2007], we showed that simple and inverted splits come with two distinct default prosodic patterns. While the inverted constructions (see (1a)) are usually realized in two intonation phrases (ι-phrase), simple splits (as in (1b)) are prosodically 'cohesive,' i.e. they form a single intonation phrase. LBE constructions are simple splits and are thus cohesive by default. This could be all there is to say about them, and the prosodic part of this article would be short. But in fact, a careful examination of the prosodic patterns of strong and weak LBE reveals that the difference is implemented in the prosody as well.

The difference can be summed up as follows: In strong LBE, the fronted part can be phrased independently. In weak LBE, this is not possible and the fronted part is phrased together with the head of the discontinuous NP/DP across whatever separates them in syntax. From the five syntactic properties distinguishing the two classes of LBE– intervention effects, categorical restrictions, complex fronting, application of the CED, and crossing of a numeral–only application of the CED has no counterpart in prosody.

As far as the first property is concerned, categorical restrictions, recall that in strong LBE, a genitive specifier, a wh-determiner, a numeral, a quantifier and an

adjective may be preposed. In strong LBE languages, this part can alternatively be the focus of the whole sentence and be phrased together with the remaining of the sentence, or it is the topic and it is phrased separately. In the former case, the focus carries the sole pitch accent of the sentence, and the remaining of the sentence, the given part, is deaccented, thus low and flat. In the latter case, when it is a topic, both parts have their own pitch accent. This is illustrated with the following examples from Czech. In this article, we use prosodic phrases (Φ-phrases) to illustrate the phrasing, but we are agnostic as to which level of phrasing is the right one, Φ-phrases or ι-phrase. In any case, the whole sentence is forming an ι-phrase in all cases. This is not indicated in the examples.

(28) a. [Hodně má Marie židlí]$_{Φ}$
many has Mary chairs-gen
Many has-got Mary chairs

b. [Hodně]$_{Φ}$ [má Marie]$_{Φ}$ [židlí]$_{Φ}$

In the pitch track of (28a) shown in Figure 1, *hodně* ‘many’ carries the unique pitch accent of the sentence, and it is phrased together with the head noun *židlí* ‘chairs.’ Figure 2 illustrated the topic reading of *hodně*, shown in (28b). In this case, it ends with a high boundary tone signalling the end of a p-phrase. The remaining of the sentence forms individual p-phrases, one on *má Marie* ‘Mary has’ and the other one on *židlí*, which carries the nuclear stress of the sentence. In sum, the quantifier is separate prosodically from the head noun.

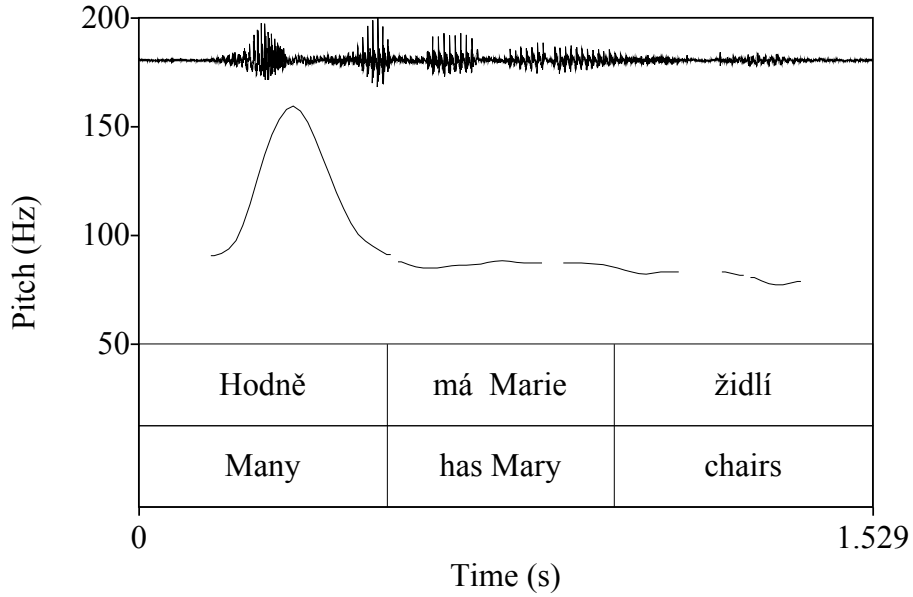

Fig.1 LBE as focus (one phrase) in Czech

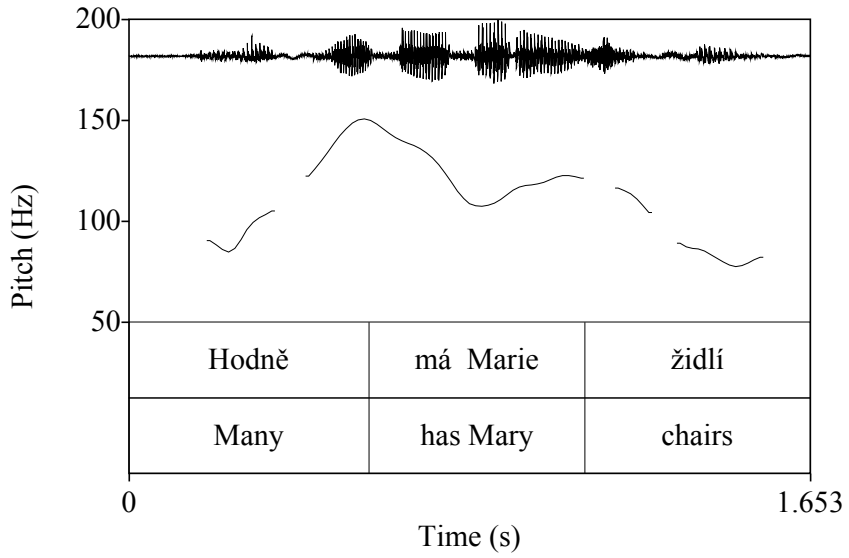

Fig.2 LBE as topic (more than one phrase) in Czech

In Bulgarian, a language with weak LBE, the following sentence is realized with a focus on the fronted numeral, at least for those informants who accept LBE at all. The whole sentence is only one prosodic phrase: it has a single main pitch accent on the first word, and none in the post-nuclear region.

(29) [Try ima tja stola]$_{\Phi}$

Three has she chairs

'You have three chairs.'

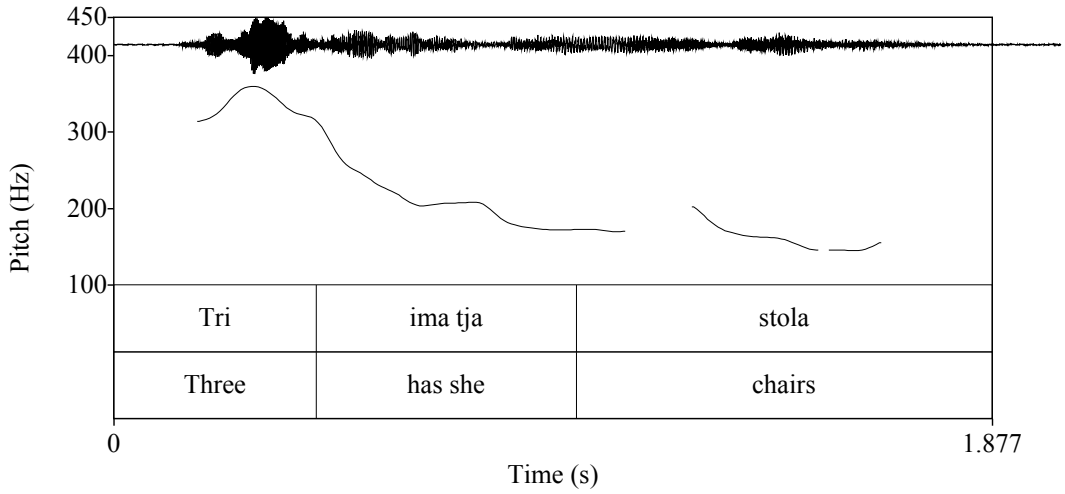

Fig.3 LBE as focus (one phrase) in Bulgarian

The equivalent of Figure 2 does not seem to be available in Bulgarian. If it is at all, it is very marginally so, as it could be in German in an artificially created context.

Complex fronting was illustrated for Polish in (17) and it is repeated in (30).

(30) a. [Ile interesujacych przeczytałeś książek?]$_{\Phi}$
how.many interesting you read books
'How many interesting books have you read?'
b. [Ile interesujacych]$_{\Phi}$ [przeczytałeś książek?]$_{\Phi}$

This sentence has at least two variants, which were produced by naïve native speakers of Polish who were asked to read sentences aloud. One of the speakers produced Figure 4 and another one produced Figure 5. Figure 4 shows the option with a single focus on the fronted words and Figure 5 shows the option consisting of a topic and a comment. The pitch track in Figure 4 displays a flat and low contour after the fronted part. Only the final unaccented syllable of the sentence has a rising contour, signalling that the sentence is a question. By

contrast in Figure 5 both the entire sentence and the fronted part end with a rising contour. The first one is the boundary tone on the prosodic phrase formed on the topic (the short final falling portion of the pitch track of the topic is an interpolation to the next low tone and is perceptively weak). The second one is again the final boundary tone of the entire sentence. The fact that it rises higher than in Figure 3 is not relevant here and reflects an individual choice. Recall that the sentences were produced by different speakers.

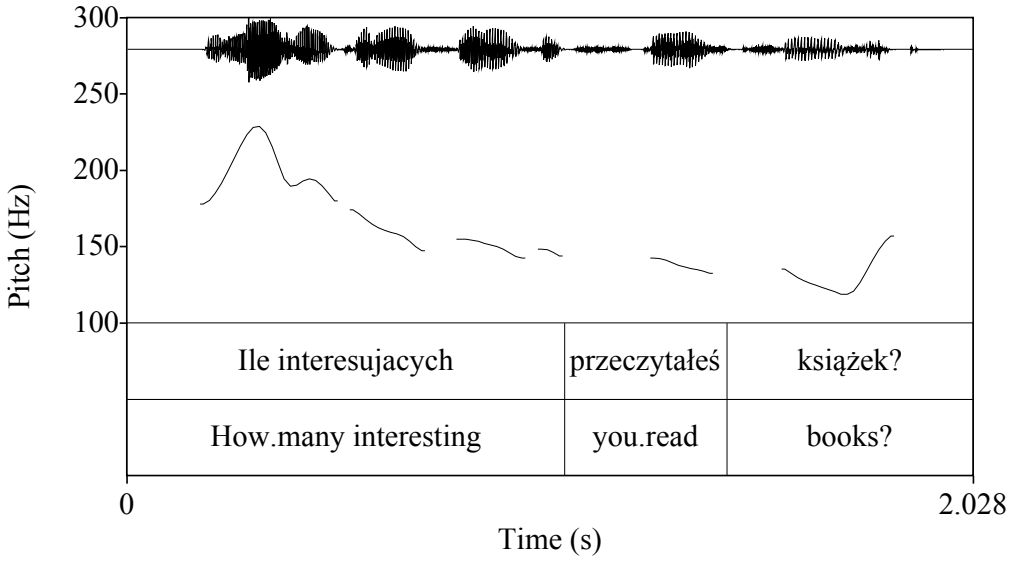

Fig.4 Complex fronting in Polish (one phrase)

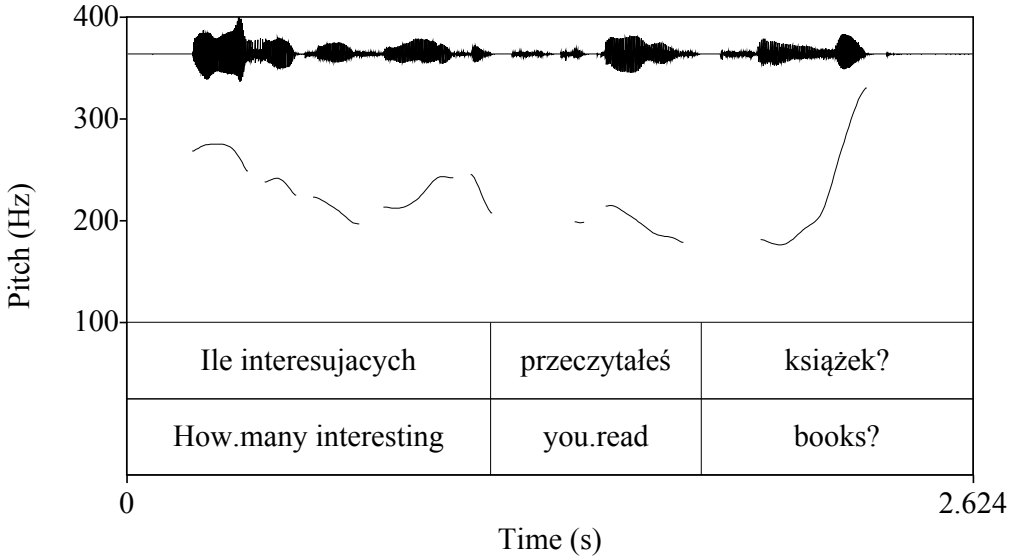

Fig.5 Complex fronting in Polish (two phrases)

The same two options appeared in a sentence with a fronted adjective crossing a numeral (see (21) repeated as (31) for Serbian), but we refrain from illustrating it here for reasons of space. In this case also the fronted adjective can be the sole focus of the sentence, or it can alternatively be the topic.

(31) a. [Črvene je Marija videla tri knjige]$_{Φ}$
Red is Mary seen three books
'Mary has seen three books.'
b. [Črvene je]$_{Φ}$ [Marija]$_{Φ}$ [videla tri knjige]$_{Φ}$

In Bulgarian, Slovenian and Sorbian, it is of course possible to realize a typical topic comment partition, as shown with an inverted split in Figure 6 for Bulgarian. The inverted split illustrated in this figure may be a hanging topic, but without clitic doubling. Each part of the sentence has its own pitch accent around which the tonal structure is organized. The topic *krastvici* 'cucumbers' has a rising boundary tone following a falling pitch accent and the main accent is on the final adjective.

(32) [Krastavic-i]$_{Φ}$ [vseki obica]$_{Φ}$ [makl-i presn-i]$_{Φ}$
Cucumber-PL everyone likes small-PL fresh-PL
'Every one likes fresh small cucumbers.'

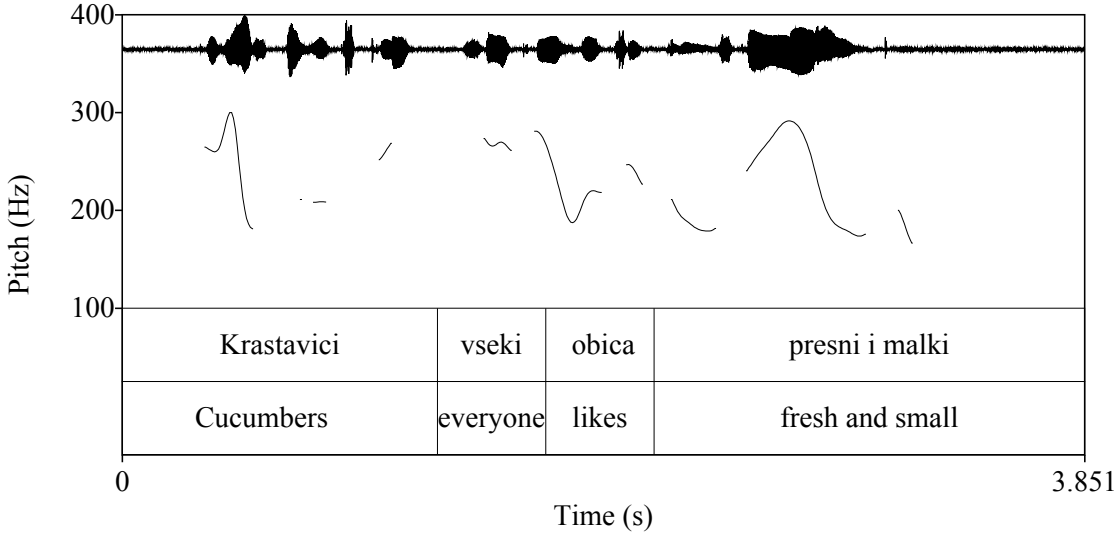

Fig.6 Topic in Bulgarian

Since sentences such as those illustrated in Figures 2 and 4 are not possible in Bulgarian at all, no realization of a simple split in one or two different prosodic phrases is obtained.

Turning next to the intervention effects, it was observed in section 2 that strong and weak LBE behave differently. In strong LBE, intervention is not problematic, whereas in weak LBE, intervention renders the sentences ungrammatical. Consider e.g., the following Serbian LBE with an intervening quantifier in (33), to be compared with (5) in section 2.

(33) $[\text{Kolika}]_{\Phi}$ $[\text{skoro svaka zena}]_{\Phi}$ $[\text{poseduje kola? }]_{\Phi}$
How many nearly every woman owns cars?
'How many cars does nearly every woman own?

The prosodic realization of (33) is illustrated in Figure 7. It can be seen that the same tonal pattern as in Figures 2, 4 and 5 is visible here as well, with pitch accents on parts of the sentences, specifically on the wh-element on *zena* 'woman' and on the final direct object *kola* 'car'. The crucial aspect is again the separate phrase on the wh-word *koliko* 'how many.'

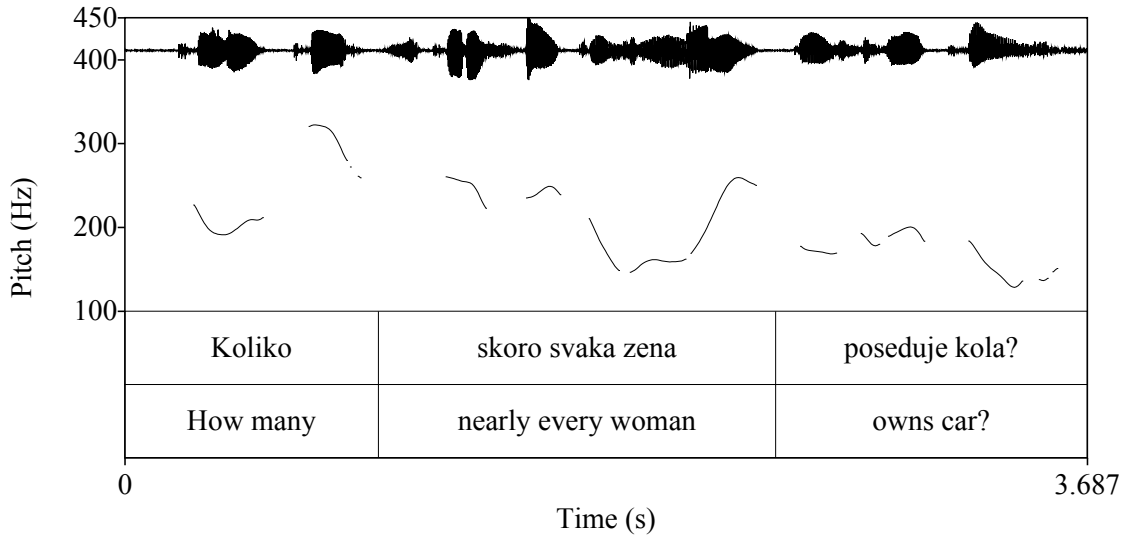

Fig.7 No intervention effect by a quantifier in Serbian

There is also no intervention effect of a negation, as shown illustrated for Polish in (34).

(34) [Jakich]$_{\Phi}$ [Piotr nie lubi samochodów?]$_{\Phi}$
Which-GEN Peter-NOM not likes cars-GEN
Which cars does Peter not like?

Sentence (34) is illustrated in Figure 8. Again it is visible that the fronted wh-word is phrased separately. Two other speakers realized spontaneously a single falling accent on the wh-word, and deaccenting of the remaining material of the sentence, thus giving the fronted wh-word a focused reading.

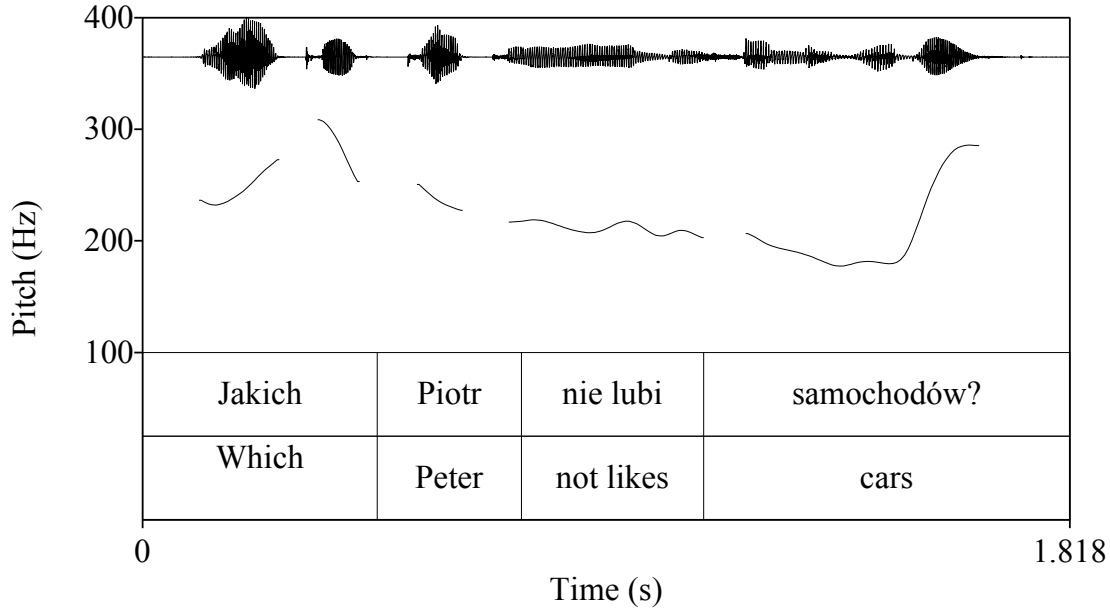

Fig.8 No intervention effect by a negation in Polish

The same two phrasing are also attested in Czech, for example in the following sentence.

(35) [Kolik]$_{\Phi}$ [Petr]$_{\Phi}$ [nemá rád aut?]$_{\Phi}$
how.many Peter-NOM not.has like cars-GEN
How many cars does Peter not like?

The prosodic pattern for intervention illustrated in Figures 7 and 8 are not possible in languages with weak LBE since the two parts of the LBE cannot be separated prosodically. Our analysis in section 5 suggested that strong LBE arise in the context of distributed deletion after the fronting of a full DP, while weak LBE are due to the movement of only part of a DP/NP in the overt syntax. This analysis is confirmed by the prosodic data. To be realized as an independent syntactic phrase, a DP/NP needs to be entirely contained in a corresponding prosodic Φ-phrase. This happens in strong LBE since in these languages, a Φ-phrase can be formed on the fronted constituent. In the case of weak LBE, this does not happen–or only very marginally–reflecting the fact that the fronted

element needs to be phrased with its head. The separation between fronted element and head is only syntactic, the important thing is that they are not separated in prosodic terms.

8. Conclusion

This article has tackled Left Branch Extraction (LBE) in Slavic languages. It has been shown that a distinction must be made between two groups of languages, orthogonal to the usual geographical classification. Most languages have strong LBE, like Russian, Polish, BSC, Ukrainian and Czech to cite only a few, which means that they are immune against intervention effects across the two parts of a discontinuous NP/DP. The complementary group of languages have weak LBE: they do not tolerate an intervener, like negation or a quantified noun phrase, in this position. Bulgarian, Slovenian and Sorbian belong to this group. We have shown that the classification correlates with further syntactic properties: categorical restrictions of which part of a NP/DP may be fronted, complex fronting, application of the CED, and crossing of a numeral by the fronted element; these effects accompany the strong LBE. The weak languages may have part of these properties, but not all of them. The analysis we propose uses [Fanselow & Ćavar 2002] copy and deletion approach: strong LBE are the result of fronting of a full DP, while weak LBE are due to the movement of part of a DP/NP in the overt syntax. In the last part of the article, we have shown that the prosody confirms this analysis. Languages with strong LBE can form one or more than one Φ-phrase in a sentence containing a LBE. Either the LBE element is a focus, in which case there is only one Φ-phrase and it carries the main pitch accent of the sentence and the remaining part of the sentence is deaccented. Or it is a topic, and then the fronted part forms a separate prosodic Φ-phrase from the remaining of the sentence. Weak LBE only have the first option. This difference in the prosodic behaviour suggests that the fronted part in the strong LBE behave as a full NP/DP whereas in the weak LBE it is not. In this case, it needs to be in the same prosodic phrase as the head of the NP/DP.

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