

# Nominal split constructions in Ukrainian<sup>1</sup>

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## 0. Introduction

This paper studies discontinuous nominal and prepositional constructions in Ukrainian, a Slavic language with free word order and free intonation (see Shevelov 1993 for a linguistic description of Ukrainian), and focuses on so-called ‘split constructions’<sup>2</sup>, in which the heads of a single (extended) nominal projection appear in different positions of a clause. Discontinuous constructions have a syntactic and an intonational component, and are licensed by a marked information structure. In the following sections, we consider these three elements individually and interactively.

Examples of split constructions in Ukrainian are given in (1) to (4). We distinguish between ‘simple’ splits, where the underlying order of (or, rather, the hierarchical relations among) the constituents of the nominal projection are preserved in the split construction, , and ‘inverted’ splits, in which underlying order/hierarchy is inverted (see Fanselow and Čavar 2002 for this distinction).

The sentence in (1) is an example of a split embedded in a declarative sentence. In the canonical order (1a), the adjective precedes its nominal head (see for instance Bilodid 1972, Hryščenko 1997 and Shevelov 1963 for word order in Ukrainian). In a simple split (1b), the relative order of A and N is preserved, but the adjective and the noun are separated by the subject and the verb. The noun is in what appears to be its canonical position, but the adjective is fronted as a consequence of the narrow focus on this word. In (1c), the order of the adjective and the noun is reversed. The noun is fronted, because it is a topic, and the adjective remains *in situ*. It is a narrow focus. In all the examples of this paper, the participants of split constructions are underlined. The square brackets show the phrasing at the level of the intonation phrase, subscripted *i* stands for ‘i-phrase’ or ‘intonation phrase’, subscripted *p* for ‘p-phrase’ or ‘prosodic phrase’ and subscripted FOC and TOP indicate the information structure. When necessary for the discussion, a distinction is made between wide focus and narrow focus WFOC and NFOC. As shown in section 1, such a distinction is made in the melodic shape of the accented words.

(1) Declarative sentence

a. Canonical order

[Marija	pročytala	<u>cikavu</u> -ACC.FEM	<u>knyžku</u> -ACC.FEM] <sub>i</sub>
Mary	has-read	interesting	book
‘Mary has read an interesting book.’			

b. Simple split

[ <u>Cikavu</u> -ACC.FEM <sub>NFOC</sub>	Marija	pročytala	<u>knyžku</u> -ACC.FEM] <sub>i</sub>
interesting	Mary	has-read	book

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<sup>2</sup> Sometimes called ‘split scrambling’, ‘split topicalization’, ‘subextraction’ and ‘hyperbaton.’

c. Inverted split

[Knyžku-ACC.FEM<sub>TOP</sub>] [Marija pročytala cikavu-ACC.FEM<sub>NFOC</sub>] book Mary has-read interesting

In a wh-question involving a prepositional phrase, the canonical word order is as in (2a). The preposition and its complement are in the first position of the sentence. In current generative analyses, this word order results from the attraction of the wh-word and the pied-piping of both the preposition and the noun. A simple split, as in (2b) is formed by leaving the head noun after the verb, and fronting only the preposition and the wh-element. Other options, like preposition stranding, are not available in Ukrainian.<sup>3</sup>

(2) Wh-question PP

a. Canonical order

[U jake misto vin pojide?].

In which town he will-go?

'In which town will he go?'

b. Simple split

[U jake vin pojide misto?].

In which he will-go town?

c. No preposition stranding

\*Jake misto vin pojide v/u?

Which town he will-go in

In (3), a yes-no question, the canonical word order is the one in which the preposition phrase is sentence final. The PP can be discontinuous, too, and, as illustrated in (3b), it is possible that P + N undergo fronting, stranding the adjective. Since this results in an inverted hierarchy of A and N, (3b) may be considered an inverted split.

(3) Yes-no-question PP

a. Canonical order

[Vin pojide y harne misto?].

he will-go to nice town

'Will he go in a nice town?'

b. Inverted split

[V misto]. [vin pojide (v) harne?].

in town he will-go (in) nice

Split constructions sometimes involve more than two parts, as shown in (4), and they can be nested. The DP in (4a) consists of a quantifier, an adjective and a noun. In (4b), an inverted split, the noun has been fronted, and the right part of this inverted split consists of a simple split construction, since the quantifier is located between the subject pronoun and the verb, and only the adjective is post-verbal.

(4) Split with three parts

a. Canonical order

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<sup>3</sup> U and v are phonological variants of the same preposition.

Vin	pročytav	<u>bahato-ACC</u>	<u>harnyx-GEN</u>	<u>knyžok-GEN</u>
He	has-read	many	nice	books
'He has read many nice books.'				

b. Inverted split

<u>Knyžok-GEN</u>	vin	<u>bahato-ACC</u>	pročytav	<u>harnyx-GEN</u>
books	he	many	has-read	nice

The syntactic distinction just sketched is complemented by a distinction in prosodic terms: Splits are ‘cohesive’ or non-cohesive. When cohesive, the split elements are part of a single intonation phrase (i-phrase), whereas non-cohesive split constructions involve an additional i-phrase. In most of the cases, simple splits are cohesive and inverted ones are non-cohesive, though there are also systematic exceptions to these correspondences. Both cohesive and non-cohesive splits are licensed by a marked information structure. Generally, cohesive splits arise from the need to focus one part of the constituent, whereas non-cohesive splits involve both a topicalized and a focused constituent. The term ‘wide focus’ characterizes an all-new sentence, in which no part of the sentence has been mentioned in a preceding question, explicit or implicit. ‘Narrow focus’ characterizes a constituent or part of a constituent which is asked for by a preceding question, which again can be implicit or explicit, or a constituent contrasted or in parallel with another constituent. Section 1 provides an autosegmental-metrical account of Ukrainian intonation. In section 2, the information structure of split constructions is described. There it is shown that the distinction between cohesive and non-cohesive split constructions has its origin in information structure. Section 3 introduces a few syntactic facts which confirm the distinction. Section 4 is a short conclusion.

## 1. Intonation and prosodic structure of Ukrainian

Ukrainian is an intonation language, which means that pitch accents (lexically or postlexically associated with stressed or prominent syllables) and boundary tones (melodies associated with edges of prosodic domains) are not melodically invariant, but vary along with their position in the sentence and with their information structural role. A declarative sentence typically consists of accented and unaccented words, which are organized in short prosodic phrases (called p-phrases in the following) and in larger intonation phrases (called i-phrases in this paper), see Nespor and Vogel (1986) and Selkirk (1986). Pitch accents standing for wide focus differ from narrow focus accents, as illustrated in this section (see also Mehlhorn 2001, 2002, as well as Junghanns 2003 for finer distinctions in Russian). Intonation languages differ from tone languages or pitch accent languages in the following respect. In an intonation language, pitch accents are, on the one hand, rather free, but on the other hand, assigned on the basis of the grammatical structure of sentences. The unmarked pitch accent distribution involves pitch accents on all arguments and all adjuncts. The strongest (nuclear) pitch accent is the last one. But this unmarked accent structure is rarely used in normal discourse situation. Pitch accents are assigned to topicalized and focused elements, according to the needs of discourse structure. Even lexically unstressed syllables can be accented for the sake of correction or new information (see for instance Paslawska 1998). In (5) for

instance, the usually unstressed prefix *vid* of the verb *vidletila* ‘started’ is accented when this verb is used contrastively with *pryletila* ‘landed’.

- (5) Vona ne pryletila, a VIDletila o šostij.  
 She not landed, but flew-away at six  
 ‘She did not land, but she took off at six.’

Pitch accent languages and tone languages have a much less free tonal structure: Tonal patterns are organized around rigid pitch accents, invariable in shape.

We start this paper by examining the intonational structure of Ukrainian. We are not aware of any study of Ukrainian intonation, and have based our analysis on our own recordings, as well as on known facts of Russian (Alter et al. 2001, Junghanns and Zybatow 1997, Mehlhorn 2001, 2002), which has similar intonation. Ukrainian has lexical accents (see Butska 2002 and Truckenbrodt and Butska 2003 for some elements of the lexical accent system of Ukrainian), but makes extensive use of post-lexical accent assignment for the sake of information structure (see for instance Jun 2005 and Gussenhoven 2004 for the distinction between lexical and post-lexical accents). A wide-focused sentence, uttered in an all-new context, elicits an unmarked tonal and prosodic pattern. In sentences in which one element of the sentence is narrowly or contrastively focused, a marked intonation is the result. We show first the neutral, wide-focused intonation pattern, and turn to narrowly focused sentences afterwards. In a third step, the prosodic phrase pattern is addressed. Finally, we also look at the pitch accents of topicalized constructions, an important aspect for the study of split constructions.

### 1.1. Intonation of wide-focused sentences

Example (6), represented in Fig. 1, illustrates a transitive sentence, in which both the subject and the object are accented.<sup>4</sup> The sentence is realized in the canonical word order SVO. A pitch accent on the subject has a rising contour and is analyzed in the autosegmental-metrical notation as a sequence of LH\*, L for Low and H for High (see Pierrehumbert 1980, Ladd 1996, Gussenhoven 2004 among others). The asterisk shows which tone is associated with the stressed syllable, and L is a leading tone, associated with the preceding syllable. The target of this kind of accent is clearly the high part of the tone, as testified by the fact that the rising beginning of the tone can be elided. See (7) in Fig. 2 for another example of wide focus with a truncated rise. After this prenuclear LH\* accent, the voice remains high and relatively flat and forms an asymmetric hat pattern (a ‘St-Exupery hat’) until the next accent is reached, the high tone of which is downstepped relative to the high tone of the first bitonal tone. The last falling accent, called the nuclear accent, is transcribed as HL\*. This bitonal accent is realized as a final drop of the  $f_0$ . Here too the first tone (H) is a leading tone, and the target of the bitonal accent is L\*. We do not note the boundary tones, and assume that a declarative sentence is always closed by a final low tone, pragmatically expressing finality.

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<sup>4</sup> All examples were realized by Alla Paslawska, a native speaker of West Ukrainian as spoken in L’viv. Some of the recordings were made in March 2004 in L’viv and some in March 2005 in Potsdam. We are only interested in the intonation of declarative sentences in different information structures, and do not attempt a comprehensive analysis of Ukrainian intonation.

- (6)      LH\*                            HL\*  
       [[DIVčyna]<sub>p</sub>]    [čytaje]        romAN]<sub>i</sub>]        Wide focus  
       Girl            is-reading        novel  
       ‘A girl is reading a novel.’

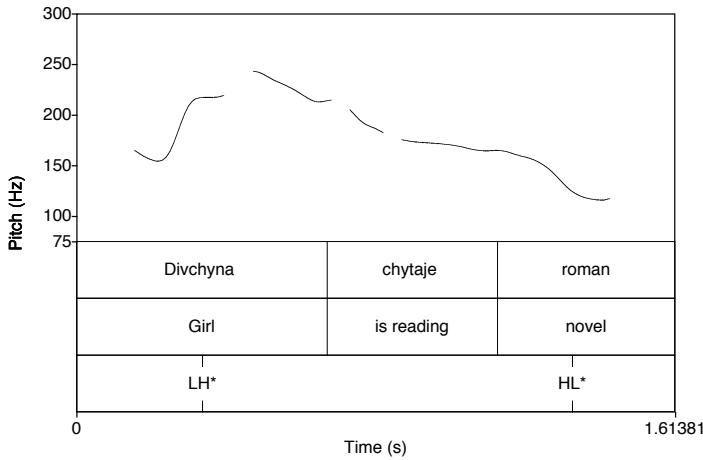


Fig.1 Wide focus on *Divčyna čytaje roman*

- (7)      L\*H                            HL\*  
       [[ŽINKa]<sub>p</sub>]    [p'je]        vodu]<sub>i</sub>]        Wide focus  
       woman            drinks        water  
       ‘The woman is drinking water’

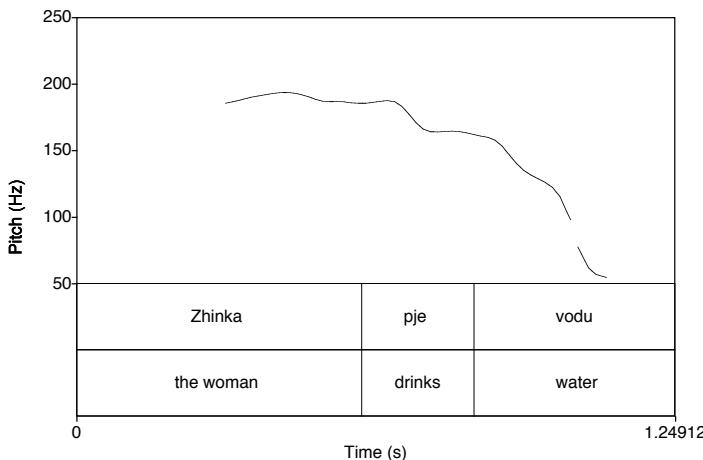


Fig.2 Wide focus on *Žinka p'je vodu*

### 1.2. Intonation of narrow-focused sentences

Two examples, in (8) and in (9), illustrated in Fig.3 and 4 respectively, show the same transitive sentences as in Figs. 1 and 2, but realized in a context asking only for the object (*What does the girl read?*, *What does the woman drink?*). Pitch accents on narrow foci have a slightly different contour, transcribed as H\*L. While the default nuclear accent of a wide focus is L\*, it is H\* in a narrow focus. The high target is aligned later in the accented syllable of a narrowly focused word than in the accented syllable of a wide focus. Perceptively, these accents are quite different. In sentences eliciting a narrow focus on the object, the subject still bears a rising prenuclear accent, which is realized with more prominence in Fig. 3 than in Fig.4. It

is to be observed that the second high tone in Figs. 3 and 4 is upstepped relative to the first one.

- |     |                         |  |              |
|-----|-------------------------|--|--------------|
| (8) | LH*                     | H*L  |              |
|     | [[Divčyna] <sub>p</sub> | [čytaje      roMAN <sub>FOC</sub> ] <sub>i</sub> | Object focus |

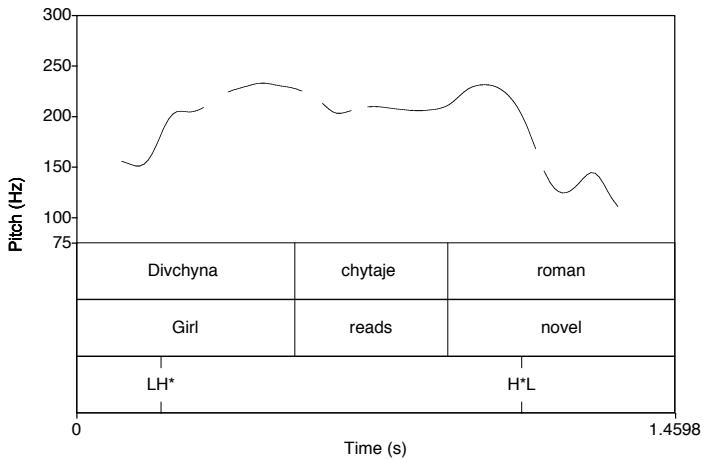


Fig.3 Object focus in *DIVčyna čytaje roman*

- |     |                 |  |              |
|-----|-----------------|--|--------------|
| (9) | LH*             | H*L                                      |              |
|     | [ <i>Žínkap</i> | [p'je vodu <sub>foc</sub> ] <sub>i</sub> | Object focus |
|     | woman           | drinks water                             |              |

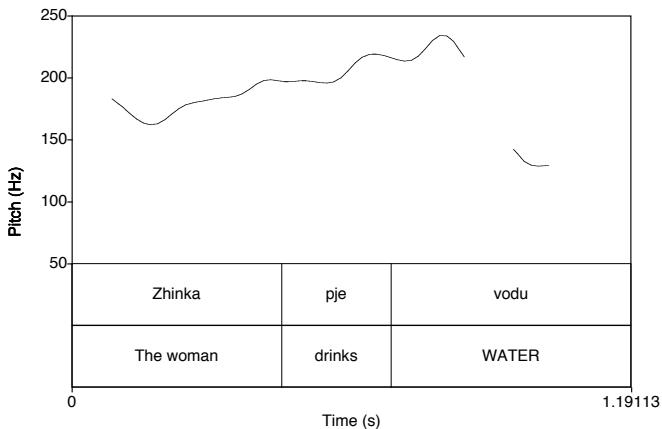


Fig.4 Object focus in Žínka *p'je vodu*

A narrow focus can also be realized on a subject. In this case, the nuclear accent is the same H\*L as found in the narrow focus realization on an object, but the remainder of the sentence is deaccented, and only one p-phrase is formed. Examples appear in (10) and (11), illustrated in Figs. 5 and 6 respectively. The eliciting questions were *Who is reading a novel?* and *Who is drinking water?*

- |      |                          |            |                        |               |
|------|--------------------------|------------|------------------------|---------------|
| (10) | H*L                      |            |                        |               |
|      | [[Divčyna <sub>Foc</sub> | čytaje     | roman] <sub>p</sub> ], | Subject focus |
|      | Girl                     | is-reading | novel                  |               |

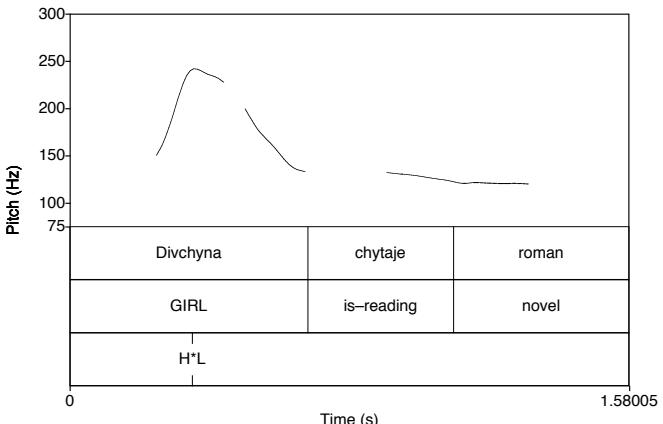


Fig.5 Subject focus on *DIVčyna čytaje roman*

- |      |   |  |               |
|------|---|--|---------------|
| (11) | H*L   |  |               |
|      | [[ŽÍNka <sub>Foc</sub> p'je vodu] <sub>p</sub> ] <sub>i</sub> |  | Subject focus |

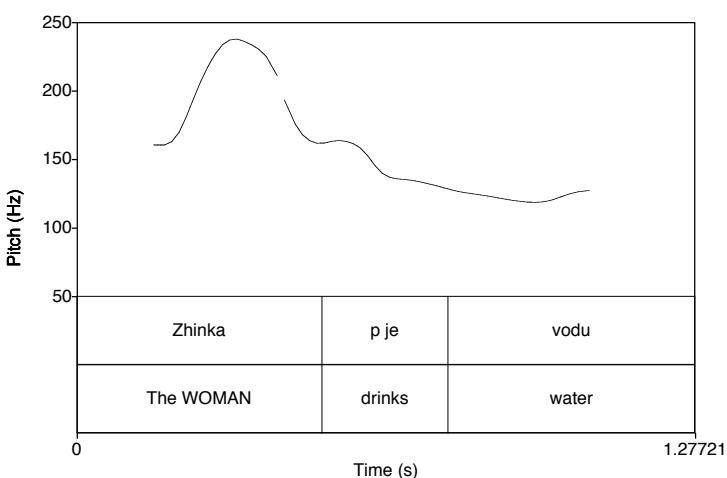


Fig.6 Subject focus on Žínka p'je vodu

In sum, we have identified three pitch accents which have different functions: a prenuclear rising accent LH\*, a default nuclear accent HL\* and a narrow focus accent H\*L. The latter pitch accent starts higher than the default nuclear one.

### 1.3. Prosodic phrasing

The sentences studied until now consisted of a single i-phrase each. We analyze each accent as forming its own p-phrase. As a result, in wide focused sentences and in those with a narrow focus on the object, two p-phrases are present, whereas in sentences with a narrow focus on the subject, only one p-phrase is formed. It should be noted that even if the prosodic phrasing can be conspicuous in careful speech, it is often very difficult to find invariant phonetic correlates for it. However, prosody is also an abstract grammatical structure and it is this level of description which we are investigating in this paper.

Sentence (12), illustrated in Fig.7, shows the unmarked tonal and prosodic structures of a longer sentence, in which each argument and each adjunct are

phrased separately. The adjunct *this morning* is phrased individually, and we leave it open whether it even forms a separate i-phrase. The verb and the following argument form a unique p-phrase together.

- (12) [S'ohodni vranci]<sub>p/i</sub> [[perexožyj]<sub>p</sub> [dav divčynči]<sub>p</sub>  
 This morning the passer-by gave to girl  
 [v parku]<sub>p</sub> [cikavu knyžku]<sub>p</sub>,  
 in park interesting book.  
 ‘This morning In the park the passer-by gave an interesting book to the girl.’

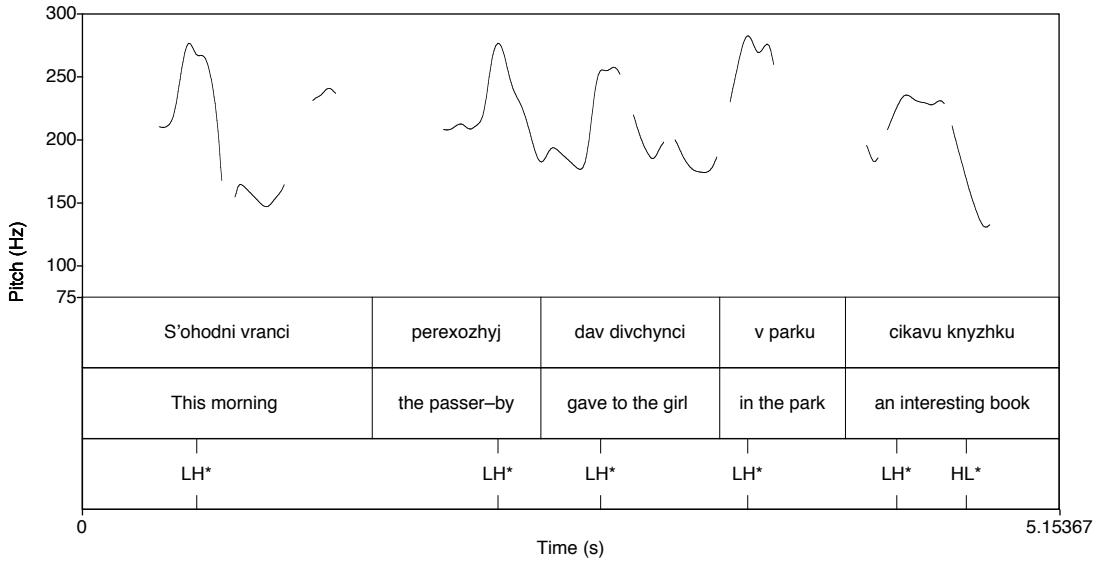


Fig.7 Prosodic structure of *S'ohodni vranci perexožyj dav divčynči v parku cikavu knyžku*

We assume a prosodic structure based on the syntactic structure in the default case, and such that every maximal projection in the syntax corresponds to a p-phrase (see Féry and Samek-Lodovici, to appear, for a formal account for English, and Féry, to appear, for German). Narrow focus and topicalization introduce marked intonation patterns. We do not try to formulate a formal account of the syntax-prosody interface since this would lead us too far off from the main concern of this paper.

Until now, only examples of sentences consisting of just one i-phrase have been considered, with the possible exception of (12). The following examples are sentences which clearly need two i-phrases. As in many languages, related i-phrases may be downstepped relative to each other, so that the first high tone of an i-phrase is lower than the first high tone of a preceding i-phrase.

Sentence (13) contains two contrasting parts, one about *Anna* and another one about *Marija*. These two parts start at approximately the same height, meaning that downstep has not taken place. But each of the sentence consists itself in two parts, a topic and a comment, and there downstep has applied. This is more apparent in the second sentence than in the first one.

- (13) [Annu]. [ja včora bačyla], [a pro Mariju].  
 Anna I yesterday saw, and of Marija  
 [ja vže davno ničoho ne čula].  
 I already a long time nothing not heard

‘Yesterday I saw Anna, but I have not heard anything of Mary for a long time.’

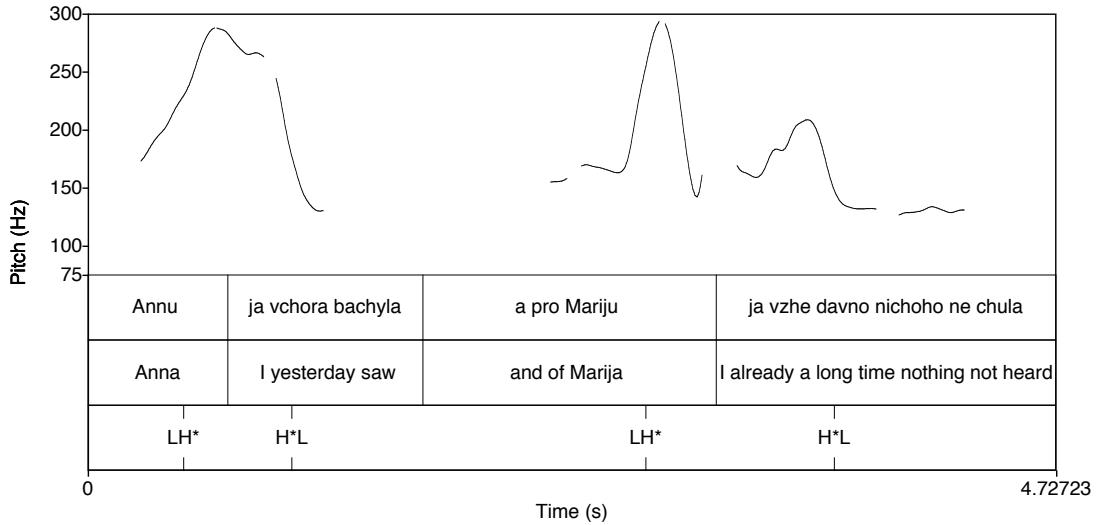


Fig. 9 A sentence with two topics

In (14), two variants of a sentence with a relative clause are shown, illustrated in Figs. 9 and 10. The first one is in the canonical order in which the head noun is adjacent to its relative clause. In this case, the sentence can have an interpretation in which everything is newly introduced into the discourse at the moment of the realization of the sentence. But the sentence in (14b) is preferably uttered in a situation in which *knyžky* ‘books’ and its relative clause are focused, and the remainder of the main clause is discourse-given. In both variants of this sentence, downstep is clearly present.

(14) a. Canonical Order

Marija pokazala Ivanovi-DAT knyžky, jaki je  
 Mary showed Ivan books which are  
 dorohymy.  
 expensive-instr.

‘Mary showed Ivan books which are expensive.’

b. Simple split

Knyžky Marija pokazala Ivanovi, jaki je .  
 Books Mary showed Ivan-dat., which are  
 dorohymy.  
 expensive-instr.

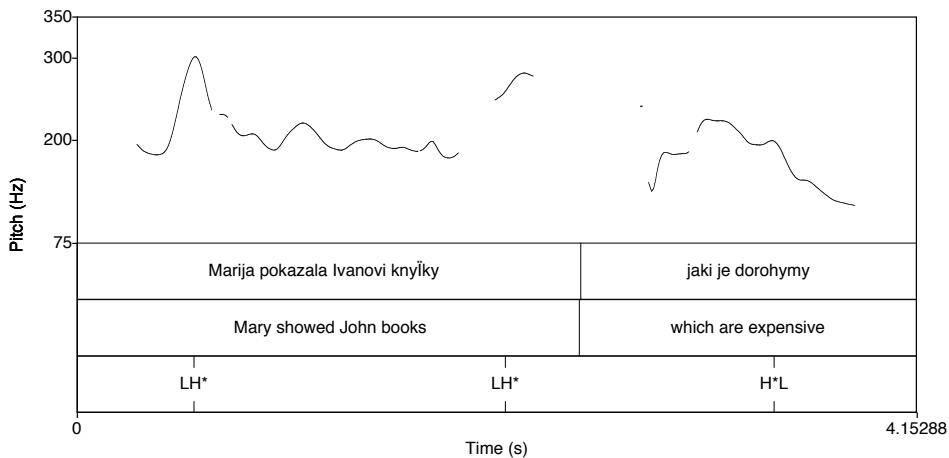


Fig. 9 A final relative clause

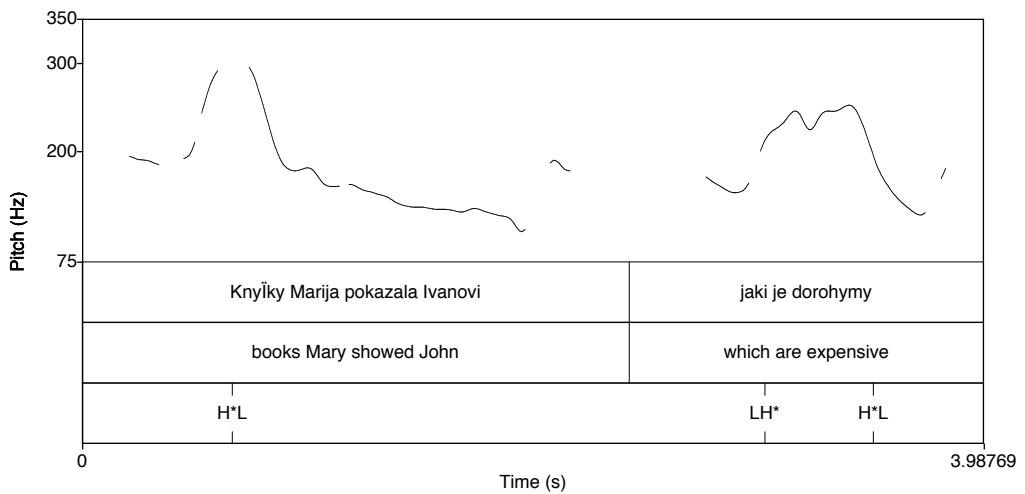


Fig. 10 An extraposed relative clause

To sum up, the tonal and prosodic structure of Ukrainian is that of a typical intonation language with default p-phrases and pitch accent assignment in a wide-focus structure and marked ones in sentences with narrow focus and topics. We have shown that the typical accent and prosodic phrase structures are similar to the ones of well-described languages, like English and German, though the details of the alignment of the tones with the segmental material as well as the choice of the tones to express pragmatic meanings may differ. A detailed analysis of Ukrainian is still needed. In the following sections, we concentrate on discontinuous constructions.

## 2. Split nominal and prepositional constructions

Ukrainian, like other Slavic languages, has a rich repertoire of discontinuous constructions, especially of split constructions. Several properties may be favorable to the existence of the latter type of construction. For instance, Ukrainian lacks determiners, which means that there can be no D-induced effects blocking extractions out of nominal projections (see Corver 1990). Where no overt determiners are necessary, it is also easier to fulfill a constraint that requires that both parts of a split DP should have the formal properties of maximal nominal

projections (see van Riemsdijk 1989 and Fanselow 1988). Furthermore, possessives, quantifiers and adjectives are highly inflected in Ukrainian, which allows them to figure as nominal projections in a clause in the absence of a head noun, which seems to be an important factor licensing split noun phrases, too (see Sekerina 1997, among many others). From the prosodic and intonational point of view, some properties of Slavic languages may also facilitate the formation of split constructions. Being an intonation language, Ukrainian has the faculty to phrase parts of split constructions individually, and to assign pitch accents on both parts of the discontinuous constituents. In fact, it might well be the need to clearly separate the parts of a constituents which leads to the splitting in the first place. This point is elaborated below.

Based on the prosodic structure, we distinguish between ‘cohesive’ and ‘non-cohesive’ split constructions. In cohesive constructions, constituents with special discourse structural features are contained in a single i-phrase, in a minimal way relative to their canonical word order. The discontinuity arises in order to satisfy the information structural needs, so that both parts find themselves in a position in which they can get their own discourse structural content, without destroying the prosodic structure of the sentence. This operation is comparable to overt focus movement in languages like Basque (see Elordieta 1998, to appear) or Hungarian (Kiss 1998, Szendrői 2001), where focused constituents must be pre-verbal.

In non-cohesive constructions, a more radical prosodic reorganization takes place. Typically, fronted (or extraposed) constituents trigger the formation of a new i-phrase. This operation is best compared with Catalan (Vallduví 1992) or Italian (Samek-Lodovici 2005), where non-focused constituents find themselves in special initial or final prosodic phrases, called ‘links’ and ‘tails’ by Vallduví.

(15) illustrated cohesive and non-cohesive split constructions graphically, though it must be clear that the word order is not necessarily the same as in (15).

- (15) a. Cohesive split construction  

$$[ \dots ab \dots ]_i \longrightarrow [ a \dots b \dots ]_i$$
- b. Non-cohesive split construction  

$$[ ab ]_i \longrightarrow [ b ]_i [ a ]_i$$

We will see in this section that information structure is important to understand discontinuous constituents. We refer the interested reader to Junghanns (2003), Junghanns and Zybatow (1997) and Zybatow (1999) for an overview of information structure in Russian. Many of the observations found in these papers hold for Ukrainian as well.

## 2.1. Cohesive splits

In cohesive splits, both parts of the split constituent are in the same i-phrase, even if they are separated by other constituents. The example in (16b) is of this kind. The separation of the two parts is linked to an asymmetric information structure imposed on the two separated parts of a single constituent, an observation frequently made for other languages as well (see Bailyn 1995, King 1995, Kondrashova 1996, Sekerina 1997, Gouskova 2001, and Mehlhorn 2001, 2002 for Russian, Devine and Stephens 2000 for Classical Greek, Mathieu 2003 for French among many others). So-called simple splits, which preserve the canonical word order, are mainly of this type. Constituents are fronted as a consequence of wh-fronting, or other kind of

operator fronting such as focus movement. In (16a), the canonical construction, the wh-phrase is continuous. The status of the whole phrase *cikavyx knyžok* ‘interesting books’ is ambiguous between having already been mentioned in the context, or being new. It is the intonation which disambiguates the status of the DP as new or given by eliciting a full tonal contour (then *cikavyx knyžok* is a new constituent), or a flat, deaccented one (then it is given). In (16b), a version of this sentence with a cohesive split construction, the separation of the *skil'ky* ‘how many’ from its dependent DP occurs in a context where the right part of the DP is part of the presupposition (*books* have already been mentioned in the discourse): it is given or backgrounded. Alternatively, the DP can be attributed a full tonal contour, but then it is part of a contrast: She has read a lot of two different written materials, for instance books and newspapers. The speaker wants to know how many *interesting books* she read (as opposed to newspapers). The separation of the wh-word *skil'ky* ‘how many’ from the head *cikavyx knyžok* is motivated strictly by information structural needs, without being obligatory. At least from a superficial consideration of information structural facts, the same pragmatic nuances can be expressed on continuous constituents, though we suspect that a more elaborate analysis of such issues would reveal a subtle difference in pragmatic meaning. Notice that the form of the right part of the split DP suggests that the split construction originates in a single DP the parts of which are then separated by movement: it does not show up with the accusative case that one would normally expect for direct objects (see (17)) but rather with genitive plural morphology which is imposed on nouns and modifying adjectives by certain quantifiers and numerals, see section 3 for discussion.

- (16) a. Canonical order

<u>[Skil'ky</u>	<u>cikavyx-GEN.PL</u>	<u>knyžok-GEN.PL</u>	<u>vona)</u>
how many	interesting	books	she
<u>pročytala?]</u>			

read

‘How many interesting books did she read?’

- b. Simple split

<u>[Skil'ky</u>	<u>vona</u>	<u>pročytala</u>	<u>cikavyx</u>	<u>knyžok?]</u>
How many	she	read	interesting	books?

- (17) a. [Vona pročytala cikavi knyžky-ACC.PL],

    she      read      interesting      books

‘She read interesting books.’

- b. \*Vona pročytala cikavyx knyžok-GEN.PL  
    she      read      interesting      books

Further examples of cohesive split constructions appear in (18) and (19), both instances of wh-questions. In (18), *čyja mama* ‘whose mother’ is the underlying constituent in all versions of this sentence, and the same holds for *skil'ky krisel* ‘how many chairs’ in (19). The separation of the two words of the split constituent only serves information structural needs. In the most natural version of these sentences, the wh-word is focused and the remainder of the sentence is backgrounded. But, as discussed with the example (16), *mama* can be a contrastive topic. This would be the preferred reading of (18d). In this word order, *mama* is

interpreted as given, but it is not deaccented. The best interpretation from the point of view of the information structure working with only a few categories, as we propose in this paper, is the one of an ‘anti-topic’ constituent. In other words, it has the same status as a topic, but it is placed at the end of the sentence.

- (18) a. Canonical order

[Čyja-NOM mama]<sub>p</sub> čytala knyžku-ACC]<sub>i</sub>?]<sub>i</sub>  
Whose mother read book?  
'Whose mother has read a book?'

- b. Simple split

[Čyja<sub>FOC</sub> čytala mama knyžku]<sub>p</sub>?]<sub>i</sub>  
Whose read mother book?  
'Whose mother has read a book?'

- c. Simple split

[Čyja<sub>FOC</sub> čytala knyžku mama]<sub>p</sub>?]<sub>i</sub>  
Whose read book mother?  
'Whose mother has read a book?'

- d. Simple split

[Čyja<sub>FOC</sub>] [čytala knyžku]<sub>p</sub> [mama<sub>TOP</sub>]<sub>p</sub>?]<sub>i</sub>  
Whose read book mother?  
'Whose mother has read a book?'

- (19) a. Canonical order

[Skil'ky krisel]<sub>p</sub> bačyla Marija]<sub>i</sub>?]<sub>i</sub>  
How many chairs did see Mary?  
'How many chairs did Mary see?'

- a. Canonical order

[Skil'ky<sub>FOC</sub>] [Marija bačyla krisel]<sub>p</sub>?]<sub>i</sub>  
How many Mary did see chairs?  
'How many chairs did Mary see?'

Prosodically, the examples in (18) and (19) are phrased in single i-phrases. This is shown in Figs. 12 and 13 for the two versions of (19). Fig. 12 illustrates the canonical word order of this sentence. The tonal structure is comparable to the asymmetric hat structure that was exemplified in Fig.1, typical for a whole-focused utterance. Fig.13 shows an early narrow focus, as was exemplified in Figs.5 and 6 for sentences with subject focus. In both cases, only one i-phrase is formed. There is no prosodic break in these utterances, and no boundary tones. Downstep is present in Fig.12.

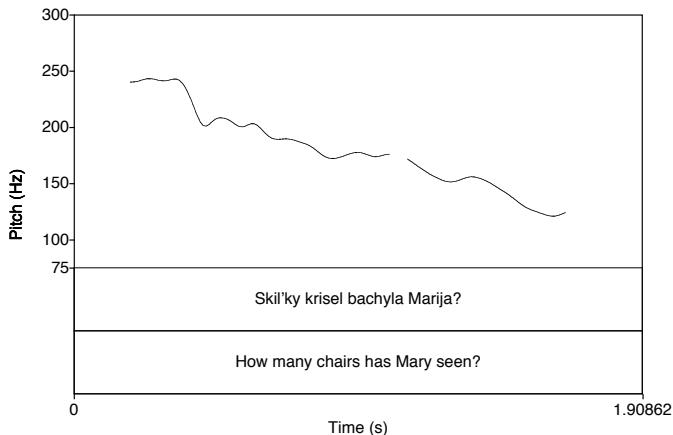


Fig.12 Canonical word order

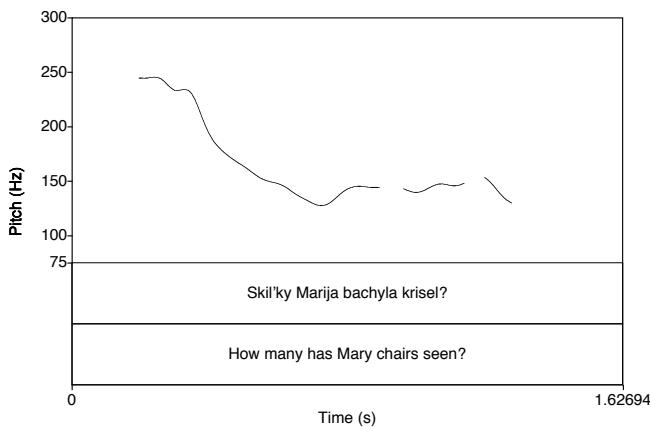


Fig.13 A cohesive split construction on a wh-phrase

Cohesive split constructions do not only involve wh-phrases. In (20b) the fronted element is a numeral. In this case also, the preferred information structure is one in which *try* ‘three’ is focused and the remainder of the sentence is deaccented because it is backgrounded. In (20c), the order of the numeral and the noun is inverted, and the very special interpretation ‘Mary has about three chairs’ is preferred, an interpretation which is available neither in (20a) nor in (20b).<sup>5</sup>

(20) a Canonical order.

- [[Marija]<sub>p</sub>      [maje      try      krisla]<sub>p</sub>]<sub>i</sub>  
 Mary      has      three      chairs  
 ‘Mary has got three chairs.’

b. Simple split

- [[Try<sub>foc</sub>      maje      Marija      krisla]<sub>p</sub>]<sub>i</sub>  
 Three      has      Mary      chairs  
 c. [[Marija]<sub>p</sub>      [maje      krisla      try]<sub>p</sub>]<sub>i</sub>  
 Mary      has      three      chairs  
 ‘Mary has got about three chairs.’

<sup>5</sup> The reading of an inverted numeral plus noun as introducing a nuance of imprecision is available in Russian, as well (see Billings 1995).

Finally, consider the sentence in (21) which involves an adjective and a noun. The unmarked word order of this sentence is shown in (21a), with main accent on *krisla*. This is the preferred realization for a wide focus interpretation (on the whole sentence or on the VP).

The version (21b), with accent on *krisla*, corresponds to a wide focus reading, similarly to (21a), but when *novi* is accented, a contrast is realized on this word. The order N + A is equivalent to a split construction as testified by (21c), which shows that the noun and the adjective in this order are truly discontinuous since they may be separated, as in our example by the expression *vidnedavna*.

- (21) a. Canonical order  
 [Ivan maje novi KRISLA].  
 Ivan has new chairs  
 'Ivan has got new chairs.'  
 b. Inverted NP  
 [Ivan maje KRISLA novi] / [Ivan maje krisla NOVI].  
 Ivan has chairs new  
 c. Inverted split  
 [Ivan maje krisla vidnedavna novi].  
 Ivan has chairs since shortly new

As mentioned at the beginning of this section, prosody as a mean of expressing information structure is rather free in Ukrainian, but the kind of operations that can take place for the sake of information structure are restricted by syntax. For instance in a discontinuous PP the following restriction applies: the right element of the split has to precede the verb (see Fanselow and Ćavar 2000 and Bašić 2005 for similar observation concerning Serbo-Croatian, and Kazenin 2005, for Russian). For this reason, (22c) is ungrammatical.

- (22) a. Canonical order  
 [U jakij firmi vony zamovly kompjuter?].  
 By which company they ordered a computer?  
 b. Simple split  
 [U jakij vony firmi zamovly kompjuter?].  
 By which they company ordered a computer?  
 c. \*[ U jakij vony zamovly kompjuter firmi?].  
 By which they ordered a computer company

The final example of a cohesive split construction in (23) is of a different nature. It shows an echo-question in which the extraposed wh-word is especially prominent. Only one i-phrase is involved in this kind of structure, and, as a result, it is also to be analyzed as a cohesive split construction. It must be noticed that, even if (23b) is a cohesive i-phrase, it is not a simple split but rather an inverted one.<sup>6</sup> Figs 14 and 15 show the canonical and the split versions of this sentence. The canonical version shows once again that a wh-phrase is preferably realized as the only accented constituent in the sentence. The split version shows the special intonation of this

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<sup>6</sup> An alternative syntactic analysis would imply remnant fronting of the deaccented part.

kind of contour. The whole sentence is realized on a much higher pitch than the other sentences, and still rises in pitch at the end of the sentence. Only the wh-phrase is accented and focused; the remaining of the sentence is deaccented.

(23) a. Canonical order

[[\_Pro        skil'kox        pys'mennykiv]\_p [hovoryv        Petro]\_p]\_i?  
 About        how many        writers        talked        Peter?  
 'About how many writers did Peter talk?'

b. Simple split

(Context:     Petro hovoryv        pro        dvox        pys'mennykiv  
 Peter        talked                about        two        writers)  
 [[Petro],\_p        [hovoryv        pro        pys'mennykiv]\_p [skil'kox],\_p]\_i?  
 Peter        talked                about        writers        how many?

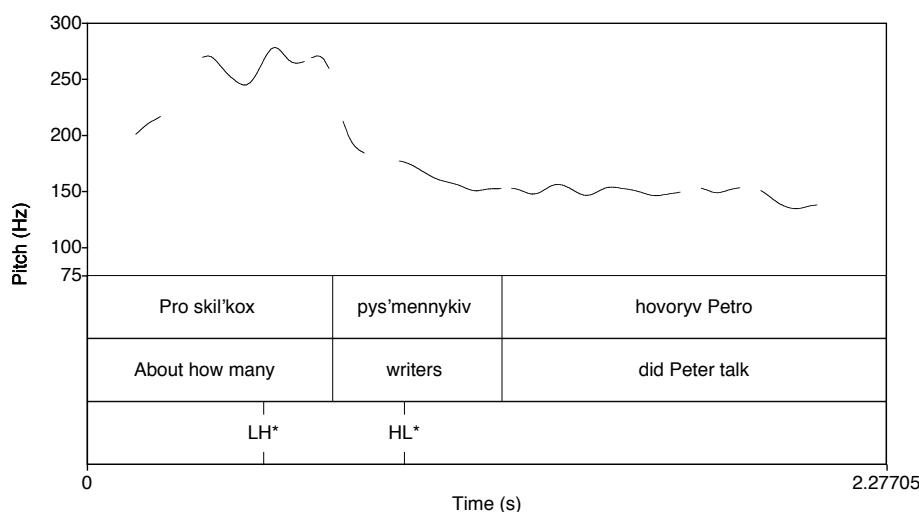


Fig. 14 Wh-phrase

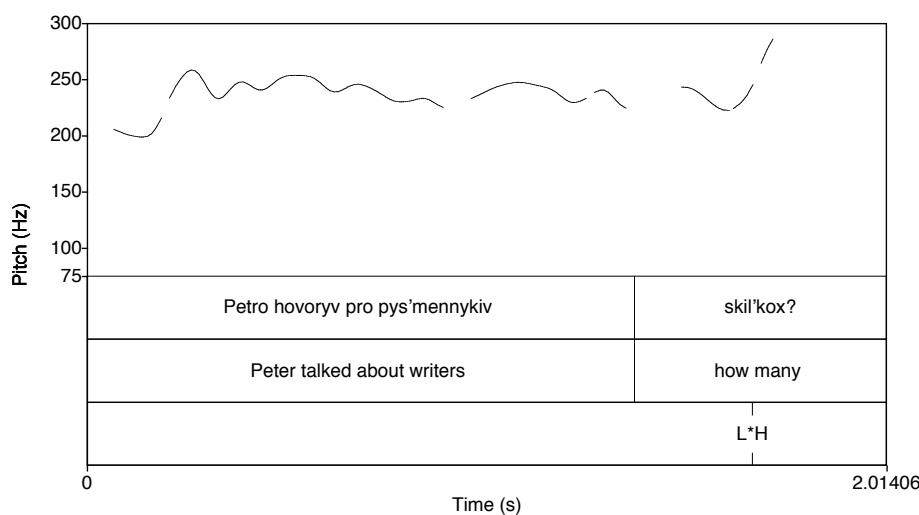


Fig. 15 Extraposed wh-phrase

In short, cohesive split constructions form a single prosodic constituent and originate as a single syntactic constituent.

## 2.2. Non-cohesive splits

Non-cohesive split constructions involve a much more important change from the point of view of the prosody than cohesive ones. Topicalization or right-dislocation of a part of a discontinuous constituent triggers the formation of a new i-phrase. Let us start with topicalization, as illustrated by the examples in (24) to (30). The sentences in all a. versions come with canonical order, involving only one i-phrase. In the b. versions, an independent i-phrase is created on the topicalized constituent, and a focused constituent is strongly preferred in the second i-phrase (without being obligatory). Examples (24) and (25) illustrate non-cohesive discontinuous DPs in which some part of a DP is topicalized. Prosodically and syntactically, both parts of the constructions are separate constituents.

(24) a. Canonical order

[Marija	pročytala	cikavu-ACC.FEM	knyžku-ACC.FEM] <sub>i</sub>
Mary	has-read	interesting	book
‘Mary has read an interesting book.’			

b. Inverted split

[Knyžku-ACC.FEM <sub>Top</sub> ] <sub>i</sub>	[Marija	pročytala	cikavu-ACC.FEM <sub>Foc</sub> ] <sub>i</sub>
book	Mary	has-read	interesting

(25) a. Canonical order

[Marija	pročytala	bahato cikavyx	knyžok] <sub>i</sub>
Mary	read	many interesting	books
‘Mary read many interesting books.’			

b. Inverted split

[Knyžok <sub>Top</sub> ] <sub>i</sub>	pročytala	Marija bahato	cikavyx <sub>Foc</sub> ] <sub>i</sub>
Books	read	Mary many	interesting

c. Split

[Cikavyx <sub>Top</sub> ] <sub>i</sub>	pročytala	Marija bahato	knyžok <sub>Foc</sub> ] <sub>i</sub>
interesting	read	Mary many	books

The examples in (26) and (27) illustrate the extraction of a prepositional phrase dependent on a noun. These examples illustrate that the kind of prosodic non-cohesiveness we find with split DPs is attested in other discontinuous construction types as well. In (27) *pro ptaxiv* ‘about birds’ depends on *knyžku* ‘book.’ The dependent PP is fronted in all three discontinuous variants in (27b-d), which show variations in the location of the head noun *knyžku*. The exact information structural change brought along by the variations in the place of the head noun has not been studied so far.

(26) a. Canonical order

[Mama	c'	oho	čolovika	pročytala	knyžku] <sub>i</sub>
mother	of	this	man	read	book
‘The mother of this man read a book.’					

b. Inverted split

[c'	oho	čolovika <sub>Top</sub> ] <sub>i</sub>	[mama <sub>Foc</sub>	pročytala	knyžku] <sub>i</sub>
of	this	man	mother	read	book

- (27) a. Canonical order

[Ty pročytav knyžku pro ptaxiv-ACC.PL]<sub>i</sub>  
you read book about birds

‘You read a book about birds.’

- b. Discontinuous

[Pro ptaxiv<sub>TOP</sub>]<sub>i</sub> [ty pročytav knyžku]<sub>i</sub>  
about birds you read book

- c. Discontinuous

[Pro ptaxiv<sub>TOP</sub>]<sub>i</sub> [ty knyžku pročytav]<sub>i</sub>  
about birds you book read

- d. Discontinuous

[Pro ptaxiv<sub>TOP</sub>]<sub>i</sub> knyžku ty pročytav]<sub>i</sub>  
about birds book you read

In (28), it is the head noun which is topicalized, and the dependent PP remains in the original i-phrase. The focused element depends on the relative positioning of *pro ptaxiv* and *včora*, with a clear preference for a late focus.

- (28) a. Canonical order

[Ja pročytala včora cikavi knyžky pro  
I read yesterday interesting books about  
ptaxiv]<sub>i</sub>  
birds

‘Yesterday I read interesting books about birds.’

- b. Discontinuous

[Cikavi knyžky<sub>TOP</sub>]<sub>i</sub> [ja pročytala pro ptaxiv včora]<sub>i</sub>  
Interesting books I read about birds yesterday

In (29), the same kind of structure is illustrated.

- (29) a. Canonical order

[Nixto ne pročytav knyžky pro c'oho čolovika]<sub>i</sub>  
Nobody NEG read book about this man  
‘Nobody read a book about this man.’

- b. PP-Extraction

[Pro c'oho čolovika<sub>TOP</sub>]<sub>i</sub> nixto ne pročytav knyžky]<sub>i</sub>  
about this man nobody NEG read book

In (30), the structure is more complex, but otherwise nothing new is added. (30b) is a simple discontinuous construction with a cohesive prosodic structure, whereas (30c) is an example of non-cohesive inverted discontinuous construction. Notice that the attachment of *u Hreciji* ‘in Greece’ is ambiguous in (30a), but not in (30b-c).

- (30) a. Canonical order

[Marija pročytala knyžku pro vidomoho likarja u

Mary            read            book            about    famous            doctor in  
 Hreciji]<sub>i</sub>  
 Greece

‘Mary read a book about a famous doctor in Greece.’

b. Discontinuous

[Marija        pročytala        knyžku        u        Hreciji        pro  
 Mary          read              book              in          Greece          about  
vidomoho    likarja]<sub>i</sub>  
 famous        doctor

c. PP-extraction

[Pro    vidomoho    likarja<sub>top</sub>],    [Marija        pročytala        knyžku  
 about    famous        doctor              Mary          read              book  
 u        Hreciji]<sub>i</sub>  
 in        Greece

To conclude this section, consider now an example of an additional i-phrase created on extraposed material to the right. In the example (31), illustrated in Fig.16, the expression *pro Xoms'koho* is a kind of afterthought.

- (31) Cikavyj        ja        bačyla        film –        pro        Xoms'koho.  
 interesting    I        have seen        movie –        about        Chomsky  
 ‘I saw an interesting movie about Chomsky.’

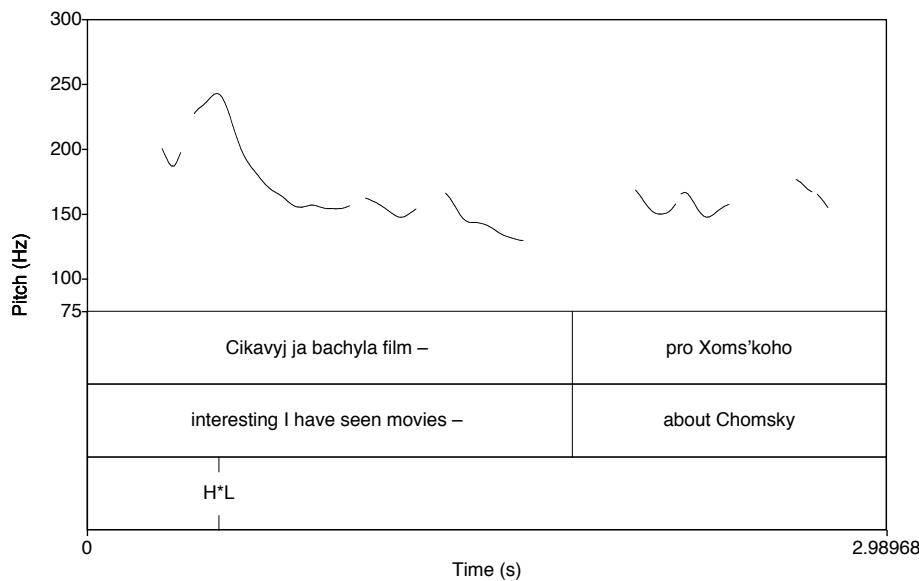


Fig.16 Non-cohesive discontinuous construction with an extraposition

The existence of split and other types of discontinuous constructions is clearly linked to informational needs, when the two parts of the constructions require different information contents. Just like cohesive splits, non-cohesive splits illustrate that it is not possible for both parts of a split construction to be deaccented and backgrounded, and it is also not possible for both parts to participate in the same focus, or in the same topic. This does not only hold for Ukrainian or the other Slavic languages (see the references given above). Similar observations have been made by

Mathieu (2003) for French, Kathol and Rhode (1999) for Ojibwe, Russell and Reinholtz (1995) for Swampy Cree, De Kuthy (2002) for German, Fanselow and Ćavar (2002) for Croatian, Mchombo, Morimoto and Féry (to appear) for Chichewa. The two parts of a split construction must have different informational content, like topicalization and focus, or backgrounding, etc. In most of the examples of non-cohesive split constructions, the natural reading is one in which the first part is topicalized and there is a focus in the main clause. Topicalization of the left part is in fact induced by the need to separate the two parts of the split constructions prosodically in order to be able to assign the right tonal contours (rising and falling tones) to the right parts of constituents (see Féry to appear for an analysis of German split constructions in these terms).

We have shown in this section that split constructions are not a homogeneous construction, and that, rather, it is useful to distinguish between cohesive and non-cohesive splits, a distinction which is orthogonal to the syntactic distinction between simple and inverted splits. In the next section, we show that the distinction between cohesive and non-cohesive split constructions is sustained by morphosyntactic facts.

### 3. Morphosyntax

The distinction in prosodic structure that we have found between the two kinds of split constructions is not just a superficial phonological difference, but reflects a more substantial property. We show in this section that morpho-syntactic facts also speak for a fundamental difference between cohesive and non-cohesive splits. The distinction is reflected in grammatical features such as case and number. In cohesive constructions, the parts of the split construction always seem to take the shape they would have in a continuous DP, while this is not necessarily the case in a non-cohesive split construction. A second phenomenon pointing to the same distinction is the doubling of prepositions in non-cohesive split constructions, attesting the independent status of the fronted part.

#### 3.1. Feature mismatches

In (32), the case of the fronted constituent is not identical with the one it would have in a continuous DP. In the canonical order in (32a), the numeral *try* ‘three’ requires *krisla* ‘chairs’ to be in nominative plural (see Bilodid 1972 and Hryščenko 1997 on case in Ukrainian). When *krisel* is the left part of a split, it is preferably genitive plural (32b), though nominative plural is marginally acceptable as well (see (32c)). But sentence (32d), in which *try* and *krisel* (in the genitive plural) are adjacent in a continuous constituent is definitely ungrammatical.

- (32) a. Canonical order  

[Marija	maje	<u>try-ACC</u>	<u>krisla-NOM.PL</u> ].
Mary	has	three	chairs

‘Mary has got three chairs.’
- b. Inverted split  

<u>[Krisel-GEN.PL<sub>Top</sub>]</u> ,	<u>[Marija</u>	<u>try]</u> <sub>i</sub>	
chairs	Mary	has	three
- c. Inverted split

[Krisla	maje	Marija	<u>try]</u>
chairs	has	Mary	three
d.	*Marija	maje	try krisel
	Mary	has	three chairs

(33) illustrates the same constellation, except for the fact that the numeral *pjat'* 'five' requires genitive plural on an adjacent (or cohesive split) noun.

- (33) a. Canonical order

[Vona	napysala	pjat'	romaniv-GEN.PL].
She	has written	five	novels

'She has written five novels.'

- b. Inverted split

[Romaniv-GEN.PL	vona	napysala	<u>pjat'</u> ].
novels	she	has written	five

- c. Inverted split

[Romany-NOM.PL]	vona	napysala	<u>pjat'</u> ].
novels	she	has written	five

d.	*Vona	napysala	pjat'	romany-NOM.PL
	She	has written	five	novels

The existence of two morphological patterns may indicate that non-cohesive constructions can be derived in two different ways, one in which the noun is literally extracted out of the remnant, and one in which the sentence-initial noun is introduced into the structure in a more independent way (see below).

The example in (34) shows that the two parts of a non-cohesive split constituent can differ in number as well (see Riemsdijk 1989 for similar observations concerning German). In the canonical order of this sentence, the numeral, the adjective and the noun are in nominative singular. In the b. version, the fronted noun is in genitive plural, and the numeral plus adjective are in singular. This constellation is again not possible in a cohesive split construction. The sentence (34c) in which the two parts of the split, as they appear in (34b), are adjacent to each other is ungrammatical.

- (34) a. Canonical order

U	neji	odyn-NOM.SG	červonyj-NOM.SG	svetr-NOM.SG
By	her	one	red	sweater

'She has a red sweater.'

- b. Inverted split

[Svetriv-GEN.PL <sub>TOP</sub> ]	u	neji	odyn-NOM.SG	červonyj-NOM.SG
sweaters	by	her	one	red

'Sweaters she has one red (of).'

c.	*U	neji	odyn-NOM.SG	červonyj-NOM.SG	svetrev-GEN.PL
	By	her	one	red	sweater

### 3.2. Preposition doubling

A further phenomenon illustrates that non-cohesive split constructions allow a syntactic analysis different from the one necessary for cohesive splits. Preposition

doubling, which has been described for German by Fanselow and Čavar (2002) also exists in Ukrainian, as attested by examples (35) to (40). Ukrainian differs from German in that preposition doubling seems optional: In inverted splits, the preposition *u/v* ‘in’ or *na* ‘to’ can appear twice: it is obligatory in the left constituent, and optional in the right constituent. The optionality of doubled prepositions is reminiscent of the optionality of morphological mismatches discussed in the preceding section, and may again be indicative of a difference in syntactic derivation.

Preposition doubling also correlates with the prosodic phrasing. When the two parts of a split construction are phrased independently from each other, each of them is a separate PP, which has to be headed by a P. The preposition is not doubled when the split is cohesive and simple, as in (35c), with focus on *bahat'ox* ‘many’, and the remainder of the sentence deaccented and obligatorily phrased together. In this case, there is only one PP, and of course only one P. Needless to say, a continuous PP tolerates only one instance of the relevant preposition. The three versions of this sentence are illustrated in Fig. 17 to 19.

(35) Preposition doubling in inverted splits

a. Canonical order

[Vin žyv u bahat'ox harnyx budynkax] <sub>i</sub>
he lived in many nice houses
‘He lived in many nice houses.’

b. Split

[U harnyx budynkax <sub>Top</sub> ] <sub>i</sub>	[žyv vin u bahat'ox] <sub>i</sub>
in nice houses	lived he in many

c. Simple split

[u bahat'ox vin žyv (*u) harnyx budynkax] <sub>i</sub>
in many he lived in nice houses

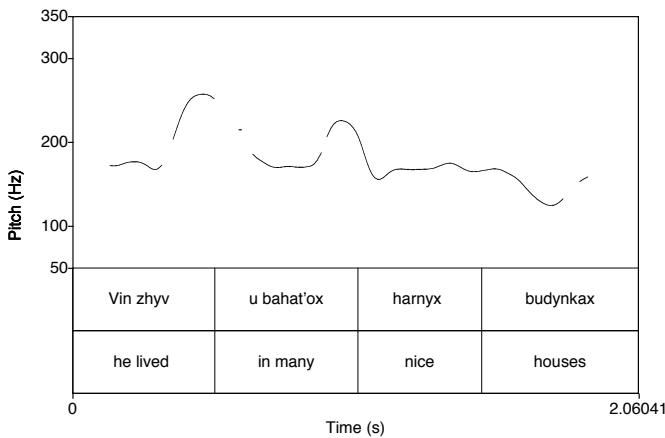


Fig. 17 Canonical word order: One phrase, one preposition

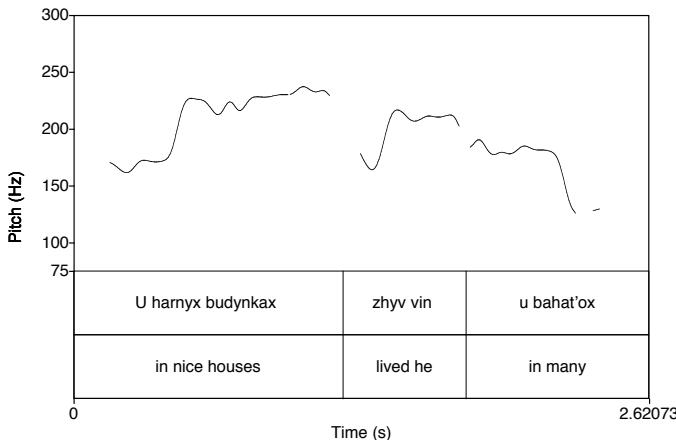


Fig. 18 Split construction: Two phrases, two prepositions

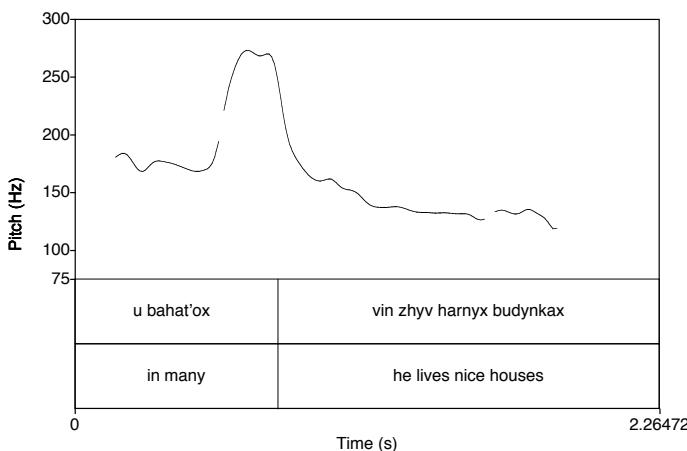


Fig. 19 Split construction: One phrase, one preposition

The examples in (36) and (37) show further cases of preposition doubling.

(36) a. Canonical order

[Vin vystupav na nebahat'ox važlyvyx konferencijax].  
He appeared at few important conferences  
'He appeared at a few important conferences.'

b. Split

[Na važlyvyx konferencijax<sub>TOP</sub>] [vin vystupav (na)  
at important conferences he appeared (at)  
nebahat'ox]<sub>i</sub>  
few

(37) a. Canonical order

[Vin vidpovidav na čyslenni nudni lysty].  
He responded to many boring letters  
'He responded to many boring letters.'

b. Split

[Na nudni lysty<sub>TOP</sub>] [vin vidpovidav na čyslenni].  
to boring letters he responded to many

As shown in section 2, a simple split is usually cohesive. The emergence of a second P is not possible in a sentence like (39b), which is obligatorily cohesive. A wh-word cannot be phrased in a different i-phrase from its head.

- (38) a. Canonical order  
 [U jakomu klasi vona včyt'sja?]  
 in which class she learn  
 'In which class does she learn?'  
 b. Simple split  
 [U jakomu vona včyt'sja klasi?]  
 in which she learn class  
 c. \*U jakomu vona včyt'sja v klasi?  
 In which she learn in class

There are cases in which only the intonation can give information on the status of a split construction as being cohesive or non-cohesive. Consider the following inverted split in which the adjective *červonyx* 'red' has been fronted. In this case also, it is possible to double the preposition, but only if two i-phrases are built. In (39) *bahat'ox* 'many' is obligatorily stressed. This split version can be realized in a single i-phrase, as in (39a) or in two i-phrases, as in (39b). This is expected if the expression *vin žyv u bahat'ox budynkax* is a well-formed sentence, and if *u červonyx* can be either integrated into a cohesive split construction with the remainder of the sentence, or topicalized in a separate phrase.

- (39) a. Split  
 [U červonyx vin žyv bahat'ox budynkax]  
 in red he lived many houses  
 'He lived in many red houses.'  
 b. Split  
 [U červonyx<sub>Top</sub>] [vin žyv u bahat'ox budynkax]  
 in red he lived in many houses

In a clearly inverted split constructions as in (40), we observed the same effect. This sentence can be pronounced as cohesive or as a non-cohesive sentence. In (40a), illustrated in Fig.20, there is only one i-phrase, and only one preposition. But in (40b), as shown in Fig.21, the two parts of the sentence are separated by a break, and two i-phrases are formed.

- (40) a. Inverted split (one preposition)  
 [U budynkax vin žyv bahat'ox]  
 in houses he lived many  
 'He lived in many houses.'  
 b. Inverted split (two prepositions)  
 [U budynkax<sub>Top</sub>] [vin žyv u bahat'ox]  
 in houses he lived in many

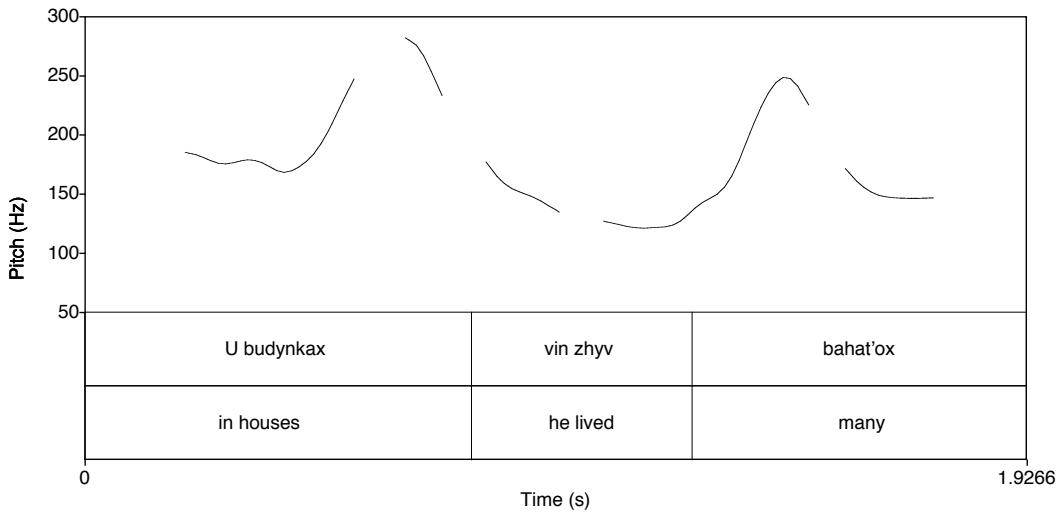


Fig. 20 Inverted split: One preposition

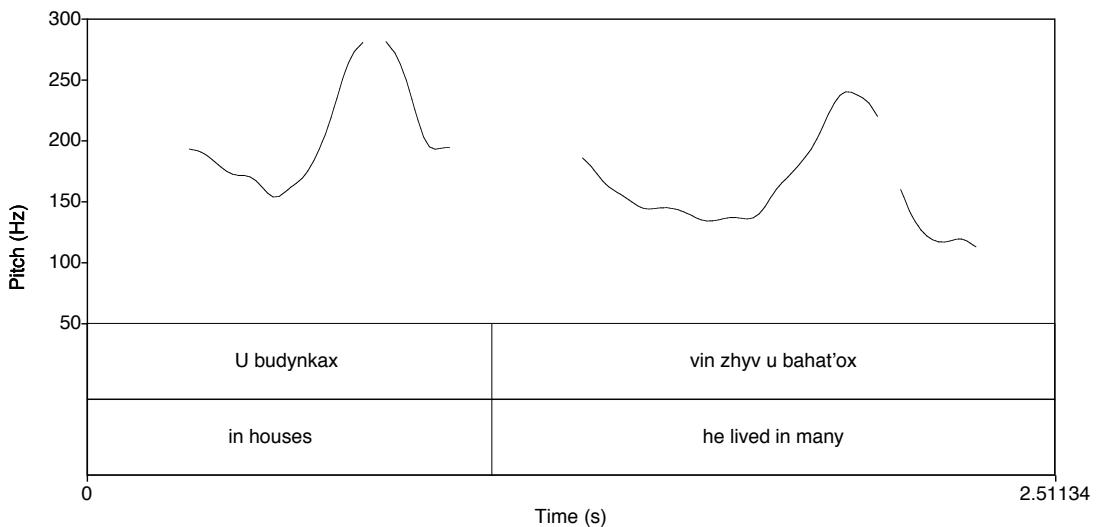


Fig. 21 Inverted split: Two prepositions

Preposition doubling can also appear in simple splits, as long as the construction is non-cohesive. If both parts of the split constructions are contrastively stressed, P doubling is even sometimes obligatory, as in (41). In this sentence, both the numerals *tr'ox* and *čotyr'ox* as well as the nouns *pys'mennykiv* and *poetiv* are pairwise contrastively stressed. As a result, each clause is divided into two i-phrases.

- (41) Obligatory preposition doubling in a simple split  
 [Pro tr'ox]<sub>i</sub> [Marija hovoryla pro pys'mennykiv]<sub>i</sub>  
 About three Mary has-talked about writers,  
 [a pro čotyr'ox]<sub>i</sub> - [pro poetiv]<sub>i</sub>  
 and about four - about poets  
 'Mary has talked about three writers and four poets.'

These contrasts show again that the distinction between simple and inverted split construction is not enough to explain the prosodic facts, since there is no one-to-one mapping between simple splits and cohesion on the one hand, and inverted and non-

cohesion, on the other hand. The prosodic structure of the sentences plays a major role in fully understanding them.

### 3.3. Syntactic analysis

Split constructions are not uncommon among the world's languages, and quite a number of detailed analyses have been proposed for a variety of languages, among which German, Hungarian, Modern and Ancient Greek, Latin, Quechua, Warlpiri, and, of course, the Slavic languages.

In simple split constructions, the highest head in the extended projection of the noun is displaced to the left. Just like the extraction of possessors from noun phrases, such a movement violates the left branch condition (Ross 1967). More seriously, the movement of, for example, a preposition and a numeral, stranding a noun, does not appear to displace a constituent. Both problems can, in principle, be solved in a remnant movement theory (see den Besten and Webelhuth 1990 and Müller 1996), in which the category consisting of A and N *harnyx budynkax* is first scrambled out of the PP *u bahat'ox harnyx budynkax* in the derivation (42) of (43). This yields a constituent containing a trace  $[_{pp} u \text{ bahat'}_0x t]$ , which can then be moved to the left periphery, resulting in a simple PP-split. See Sekerina (1997) and the references cited therein, as well as Gouskova (2001) for an analysis in these terms for Russian; see also Franks and Progovac (1994) and Bašić (2005) for a similar proposal for Serbo-Croatian.

- (42) a ... b ... [c  $[t_i]$ ]<sub>DP/PP</sub>  
           a ... b ... [[t] c]<sub>DP/PP</sub>

- (43) Simple split  
       [u      bahat'ox      vin      žyv      (\*u)      harnyx      budynkax]<sub>i</sub>  
       in      many          he      lived     in      nice          houses  
       ‘He lived in many nice houses.’

The remnant (“double”) movement theory captures the basic aspects and constraints of simple splits in a straightforward way, and also gives an answer to the question of why the noun appears preverbally in simple PP splits, as we have observed above. It faces the problem that XPs can be split up that are islands for standard movement otherwise (for Slavic languages, this is true for PPs, for adjuncts and to different degrees for DPs with non-structural cases). Therefore, the first movement step creating the remnant should not be well-formed, and the derivation sketched in (42) should be impossible. Several accounts for the low island-sensitivity of split DPs and PPs have been proposed (see, e.g., Gouskova 2001, Bailyn 1995, but also Corver 1990). In particular, within the copy-and-deletion theory of movement developed by Chomsky (1995), authors like Junghanns and Zybatow (1997), Fanselow and Ćavar (2000), and Hinterhölzl (2002) proposed a modification of the remnant movement idea that is able to avoid the island-sensitivity problem on more principled grounds. That simple (and inverted) splits do not show the expected negative intervention effects in Ukrainian and other Slavic languages is a problem for syntactic movement accounts that has rarely been addressed in the literature. This is only illustrated in (43) as it would be the theme of another paper. Suffices it to say here that the division of a sentence with a negation into two i-phrases would greatly impair the

processing of this sentence, whereas a sentence like (44) in which only one i-phrase should present no difficulty.

- (44) [Skil'ky Petrovi ne podobajet'sja mašyn?]  
 How many Peter not likes cars  
 ‘How many cars doesn't Peter like?’

Inverted split constructions have also been analyzed as involving movement (see Gouskova 2001, Sekerina 1997 and Fanselow and Čavar 2002 among many others). They pose a set of challenges to movement analyses that are different from those we find with simple splits. For instance, we have observed above that the morphological features in an inverted split construction may be different from those that would show up in a continuous DP. This point was considered highly problematic for movement accounts of split NPs by Haider (1985) focusing on German. Likewise, some split constructions cannot be reconstructed into their canonical continuous shape on word order grounds. Only the split construction (45a) is well-formed, (45b) is not.

- (45) a. Inverted split  
 Takož druziv vin ne maje žodnyx.  
 Also friends he NEG has none  
 ‘Also friends he has none.’  
 b. \*Vin ne maje žodnyx takož druziv.  
 He NEG has none also friends

This point is, of course, illustrated most clearly by the preposition doubling facts discussed above: a continuous PP cannot host two prepositions. Therefore, one also finds proposals in the literature which assume that inverted splits do not arise by movement (the pre-movement base cannot be identified), but rather involve the base generation of two independent NPs or PPs, one of which is in a topic position. Such analyses must guarantee that the XP in topic position and the corresponding DP or PP within IP “fit together” in the relevant sense, and several proposals have been made in this respect, see van Hoof (2004) for an overview.

Which of these two basic alternative analyses is correct for Ukrainian? We propose that no choice has to be made. Recall that at least in Ukrainian P-doubling is optional in inverted splits. Likewise, the morphological mismatches described above may, but need not arise in inverted split constructions. As a result of the discussion of the preceding section, it is tempting to assume that Ukrainian inverted split constructions in fact have two different grammatical sources: they may arise by movement or by base-generation of a topic in a left peripheral position. When they arise by movement, there can be no preposition doubling and morphological mismatches cannot be generated either, but we expect to observe both properties with base-generated topics.

One advantage of this view certainly is that it helps us to better understand the relation between syntactic and prosodic split types. Base-generated topics automatically come with a separate i-phrase, thus, prosodically cohesive splits can never be due to a base-generation of the two parts of the split. In this view, the absence of P-doubling in cohesive splits, both in simple and in inverted splits, as well as the fact that morphological feature mismatches are only possible in non-cohesive splits, as shown above, comes as no surprise.

The further correlation of prosodic and syntactic split categories is due to the topicalhood of the left part. In an inverted split, the left periphery of the clause is occupied by a noun or an adjective plus a noun. It refers to a set of individuals/objects which can easily function as a topic. This is different with simple splits since a numeral does not easily function as a topic. Where it does, as seems to be the case in (41), we not only observe non-cohesive prosody but also the doubling of the preposition, and we are confronted with a structure in which a simple split has been base generated.

These remarks are meant to illustrate a possible relation between syntactic and prosodic split types. A full-fledged syntactic analysis of Ukrainian split constructions is, however, beyond the scope of the present paper<sup>7</sup>.

#### 4. Conclusion

In order to fully understand the nominal and prepositional split constructions in Ukrainian one needs to take into consideration facts coming from prosody, syntax and information structure. In particular, the prosodic structuring of sentences is crucial to understand their syntactic properties. Cohesive splits are realized in a single intonation phrase and the two parts of this kind of split construction are probably separated by a syntactic movement operation, whereas non-cohesive constituents may (but need not) be base-generated as two independent constituents. Even if cohesive splits are often simple splits (in which the order of the constituents is preserved) and non-cohesive ones generally correspond to inverted splits (in which the order is changed), this correspondence is not perfect, and some examples of non-cohesive simple splits have been shown. The reverse case, cohesive inverted splits are much rarer, if they occur at all, an expected result if the inversion of parts of true constituents is highly marked because it is costly in terms of processing. Both types of splits are triggered by an asymmetric information structure: the two parts of the discontinuous phrase are separated from each other because they bear different information structural features, like topic, focus and givenness. Cohesive split constructions mostly arise because of the need to focus one part of the constituent, and non-cohesive ones are often the result of topicalization.

Ukrainian is an ideal language to examine for properties of split constituents because it is an intonation language, with free assignment of accents, and because adjectives, quantifiers and numerals can form their own nominal phrases.

It remains to be seen whether the results presented here for Ukrainian can be applied to other languages as well. We suspect that this is the case and will look forward to extensive studies in this domain.

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<sup>7</sup> We will also leave it open how the fronting of adjectives is effected when both the numeral and the noun are left behind. See Bašić (2005) for ideas of how similar facts in Serbo-Croatian might be dealt with.

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