ABSTRACT

PHONOLOGICAL MOVEMENT IN UKRAINIAN

This thesis proposes that there is a form of scrambling in Ukrainian that involves pervasive phonological movement as presented by Agbayani and Golston (2010a) for Classical Greek hyperbaton and applied to analyze scrambling in colloquial Russian by Henderer (2009). The evidence for phonological movement in Ukrainian includes (i) insensitivity of movement to syntactic constraints and semantic conditions that rely on syntactic relations, and (ii) sensitivity to phonology, including phonological constituency and prosodic constraints. This thesis proposes that this form of scrambling in Ukrainian is purely phonological in nature and involves movement of prosodic words (Split Scrambling) and phonological phrases (XP-Scrambling) rather than syntactic constituents.

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Ukrainian is one of three living East Slavic languages (the others being Russian and Belarusian) characterized by rich morphology and free word order. In Ukrainian, rendering meaning and syntactic relations in a sentence is dependent on endings of words rather than word order, so all six of the following orders are grammatical. 1

(1)  
SVO, SOV, VOS, OVS, OSV, VSO

a. Marija vidislala lysta.
   Maria.F.NM sent.3 letter.M.AC
   ‘Maria sent a letter’

b. Marija lysta vidislala.
   Maria.F.NM letter.M.AC sent.3

c. Vidislala lysta Marija.
   sent.3 letter.M.AC Maria.F.NM

d. Lysta vidislala Marija.
   letter.M.AC sent.3 Maria.F.NM

e. Lysta Marija vidislala.
   letter.M.AC Maria.F.NM sent.3

f. Vidislala Marija lysta.
   sent.3 Maria.F.NM letter.M.AC

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Unfixed word order is especially characteristic of colloquial Ukrainian and can involve moving not only what appear to be syntactic constituents, but also parts of syntactic constituents. Thus, individual words can be extracted out of their constituents, creating strings of discontinuous constituents like the following:

(2) Discontinuous constituents

a. Duže vin jiji za te kohaje prystrastno.
   very he her.AC for that.AC loves.3 passionately
   ‘He loves her very passionately for that.’

b. Duže vona istoriju cikavu rozpovila.
   very she story.F.AC interesting.F.AC told.3
   ‘She told a very interesting story.’

c. Garno vona spivaje duže.
   well she sings.3 very
   ‘She sings very well.’

In examples 2a and 2b, duže ‘very’ is extracted from the adverb phrase duže prystrastno ‘very passionately’ and the noun phrase duže cikavu istoriju ‘a very interesting story’ and is fronted to the left edge of the clause. In 2c this modifier is extracted from the adverb phrase duže garno ‘very well’ and is stranded at the right periphery of the clause while its head is moved all the way to the beginning of the clause.

This phenomenon of variable word order within a clause has been referred to as ‘scrambling’ in the literature. Ross (1967), who was the first to use this term, describes this phenomenon as a stylistically driven process that derives alternative word order in Latin and other languages. Scrambling is found in many languages including Slavic languages.
Two types of scrambling are distinguished in the literature: XP-Scrambling, where syntactic constituents are moved as one unit, and Split Scrambling, where the parts of constituents are extracted and placed in different positions within a clause (Sekerina 1997). 3a is an example of XP-Scrambling since the constituents are rearranged into VOS word order but they are not split, while in 3b Split Scrambling is responsible for breaking the nominal phrase cilyj košyk jabluk ‘a whole basket of apples’ into subparts and moving the subconstituent cilyj košyk ‘a whole basket’ to the left edge of the clause.

(3) XP-Scrambling and Split Scrambling in Ukrainian
   a. Rozpoviv meni cju istoriju Ivan mynulugo roku.
      told.3 me.DT this.F.AC story.F.AC Ivan.NM last. M.GN year.M.GN
      ‘Ivan told me this story last year.’
   b. Cilyj košyk vin zalyšyv vam jabluk.
      whole.M.AC basket.M.AC he left3 you.DT.PL apples.GN.PL
      ‘He left a whole basket of apples for you.’

While the definitions of XP-Scrambling and Split Scrambling given above describe scrambling as a syntactic phenomenon, it is treated differently in this thesis. The basic claim developed here is that these two types of scrambling in Ukrainian involve movement of phonological words and phrases rather than syntactic constituents. XP-Scrambling is treated here as movement of a phonological phrase and Split Scrambling is treated as movement of a prosodic word.

As has already been mentioned, scrambling is not uncommon among the world’s languages and ever since Ross (1967) introduced this term, there have been many attempts to analyze scrambling and explain why it is allowed in some languages and is not possible in others. Ross (1967) considered scrambling to be a
stylistic phenomenon and this view was later supported by other linguists (e.g., Chomsky & Lasnik 1977). Scrambling has also been viewed as a syntactic phenomenon and within this view there are two major approaches to scrambling: it is considered to be the result of base-generation (Fanselow 1988, Boškovic & Takahashi 1998, Chomsky 2000, 2001, Kariaeva 2009) by some authors, while Karimi (2003) cites others (e.g., Kerstens 1975, van Riemsdijk 1978, de Haan 1979, and Baylin 2001) who view it as syntactic movement.

The attempts that have been made to analyze scrambling explain certain processes but still fail to account for all cases of scrambling. A question that arises is whether scrambling should be treated in the same way cross-linguistically or not. Hale (1994) claims that free word order phenomena across languages can result from different processes.

The goal of this thesis is to investigate whether phonological movement as proposed by Agbayani and Golston (2010a) to account for hyperbaton in Classical Greek can be applied to analyze scrambling in Ukrainian. Agbayani and Golston 2010a (hereafter A&G) propose that Classical Greek hyperbaton is phonological movement rather than syntactic movement since it disregards a number of syntactic conditions while obeying a number of phonological ones. They argue that phonological movement in Classical Greek results from phonological constraint interaction and is blind to syntactic constraints. Their analysis shows that Classical Greek hyperbaton exhibits a number of non-syntactic behaviors: it moves strings of words that do not form a syntactic constituent (4), moves the fronted material (both heads and phrases) to extremely local positions (5), ignores the COORDINATE STRUCTURE CONSTRAINT (Ross 1967) which is exemplified in cases (6a-b), and freezing islands (7). Classical Greek hyperbaton is also insensitive to the LEFT-BRANCH CONDITION (Ross 1967), which is shown in case 8,

(4) Movement of non-constituent in Classical Greek

\[ \text{tōn} \quad \text{ állōn} \quad \text{ pēri} \quad \text{ nomēōn} \]

the.M.GN.PL other.M.GN.PL about herdsmen.M.GN.PL

‘about the other herdsmen’ (Plato, Statesman 268b)

(5) Movement to the extremely local position

\[ \text{Tēn} \quad \text{ tōn} \quad \text{ pollōn} \quad \text{ dōksan} \quad \text{ antrōpōn} \]

the.F.AC the.M.GN.PL many.M.GN.PL opinion.F.AC people.M.GN.PL

‘the opinion of the many people’ (Plato, Protagoras 353a)

(6) Extraction out of coordinate structures (insensitivity to CSC):

a. \[ \text{aukhmōn} \quad \text{ te} \quad \text{ pēri} \quad \text{ kai} \quad \text{ epombrίās} \]

drought.M.GN.PL both about and heavy.rain.F.GN.

‘about both drought and heavy rain’ (Aristotle, Meteorology 361b9)

b. \[ \text{aretēs} \quad \text{ pēri} \quad \text{ kai} \quad \text{ kākιās} \]

virtue.F.GN about and vice.F.GN.

‘about virtue and vice’ (Plato, Republic 365a5)

(7) Insensitivity to Freezing Island:

\[ \text{Hόsois} \quad \text{ ánthrōpoi} \quad \text{ sitoisin} \quad \text{ ē potōisin} \]


hugiaĩntes es díaitan krōntai being.well.M.NM.PL in diet.F.AC use.3PL

‘whatever food or drink healthy people use in their diets’

(Hippocrates, Affections 39.1)
(8) Insensitivity to the Left Branch Condition

\[ \text{Pántō pēri tōn állōn} \]

\text{all.N.GN.PL about the.N.GN.PL other.N.GN.PL}

‘about all the other things’    (Plato, \textit{Republic} 353b)

(9) Insensitivity to the Adjunct Condition

\[ \text{Eks állēs eltőnta kómmēs} \]

\text{From another.F.GN coming village.F.GN}

‘coming from another village’    (Herodotus 1.196)

A&G show that, while ignoring a number of robust syntactic conditions, Classical Greek hyperbaton appears to be sensitive to phonology. It respects a number of phonological conditions and is sensitive to prosodic constraints. As can be seen from cases 4-9, hyperbaton often moves strings of words that are not syntactic constituents. However, these strings of words always appear to be phonological constituents. Irrelevance of syntax and relevance of phonology lead A&G to conclude that hyperbaton in Classical Greek involves pervasive phonological movement.

Henderer (2009) applies A&G’s analysis to colloquial Russian. My assumption is that the same analysis might be extended to scrambling in Ukrainian since these two languages belong to the same (East Slavic) subgroup of languages, have similar structure and are characterized by free word order. This thesis will closely follow A&G’s argument for phonological movement in Classical Greek and Henderer’s (2009) analysis of scrambling in colloquial Russian.

The thesis is organized as follows. In chapter 2, I introduce previous analyses of scrambling, discuss their limitations and point out issues they do not address in relation to some special properties of scrambling in Ukrainian. Next, in
chapter 3, I present data from colloquial Ukrainian and discuss the phenomenon of scrambling. Chapter 4 establishes the argument for phonological movement in colloquial Ukrainian. Chapter 5 is the conclusion.
CHAPTER 2: SYNTACTIC APPROACHES TO SPLIT SCRAMBLING

Split Scrambling has received much attention in the literature. Several approaches to analyzing split constructions have been proposed: the movement approach (van Riemsdijk 1989, Corver 1992, Bašić 2004, Bošković 2005), the base-generation (non-movement) approach (Fanselow 1988, Bošković & Takahashi 1998, Chomsky 2000, 2001, Kariaeva 2009), and a combination of both these approaches (Fanselow & Čavar 2002, Pereltsvaig 2008).

2.1 Movement Approaches to Split Scrambling

Two analyses are proposed within movement approaches to scrambling in Slavic. The first analysis views split constructions as a result of Direct Extraction (van Riemsdijk 1989, Corver 1992, Bošković 2005), while according to the second one scrambling results from Remnant Movement (Bašić 2004). However, neither analysis accounts for the entire range of data in Slavic languages.

2.1.1 Direct Extraction

The Direct Extraction analysis developed by Corver (1992) and further modified by Bošković (2005) crucially relies on the assumption that languages allowing Left Branch Extraction (LBE) do not have a DP layer. Thus, according to Bošković (2005), 10 is ungrammatical in English but 11 is possible in Serbo-Croatian since Serbo-Croatian does not project DP on top of NP. This means that there is no D to project a minimality barrier, which is the case in English. That is why the extraction of prenominal material is allowed in 11 but blocked in 10.

(10) Left Branch Condition in English

*Whosei did you see [t_i father]?
(11)  Left Branch Extraction in Serbo-Croatian

Čiegi si vidio [t; oca]?
Whose are seen father
‘Whose father did you see?’

The core assumption of Bošković’s (2005) analysis is that the lack of DP in Serbo-Croatian-type languages leads to the NP-over-AP structure, which is why extraction of prenominal material in this type of languages does not involve non-constituent movement as opposed to English-type languages with overt determiners and AP-over-NP structure.

Some of the limitations of this type of analysis are as follows. First of all, as Bašić (2004) points out, an obvious disadvantage of this assumption is that the evidence from Slavic is not strong enough to question the universality of the DP-hypothesis. What is more, under this analysis we have to assume that verbal and nominal categories have different structure and that while VPs are dominated by functional layers, NPs are not. Furthermore, the existence of non-overt categories has been proposed for many languages in the literature and it is assumed that there is null D even in English, which is a language with overt determiners (Abney 1987, as cited in Bašić 2004). Thus, this analysis requires additional stipulations which do not seem to be justified.

Still another weakness of the Direct Extraction analysis is pointed out by Pereltsvaig (2008), who challenges this analysis with the fact that colloquial Russian allows non-constituent extraction while according to the Direct Extraction analysis, non-constituents cannot be moved. Corver (1992) proposes a solution for the cases of non-constituent extraction involving a preposition that is moved together with a host adjective. According to Corver (1992), this kind of movement occurs since a preposition as a light functional category cliticizes to a lexical word
and is moved with it as one unit. Pereltsvaig (2008), however, provides empirical evidence from colloquial Russian suggesting that this approach is untenable since in colloquial Russian both light/non-functional and heavy/lexical prepositions can be moved together with a host adjective. Instances of non-constituents consisting of an adjective and a heavy/lexical preposition are also common in colloquial Ukrainian. What is more, heavy/lexical prepositions can be stranded by themselves in colloquial Ukrainian and Russian, which cannot be accounted for under the Direct Extraction analysis. Still another limitation of this analysis is that both colloquial Russian and Ukrainian allow non-constituent extraction out of a vast array of XPs with both non-constituents being lexical words.

Furthermore, according to Bašić (2004) and Bošković (2005), multiple left-branch adjectival modifiers cannot be fronted. Under this analysis, 12 is falsely predicted not to occur, however, this is possible in colloquial Ukrainian.

(12) Fronting of multiple left-branch adjectival modifiers in Ukrainian

U velyku novu vony majut' perejihaty kvartury.

In big.FAC new.FAC they are.supposed.3PL to.move.in apartment.FAC

‘They are supposed to move in a big new apartment.’

Bošković (2005) also tentatively explores the possibility of the lack of DP being a prerequisite for scrambling. This leads him to suggest that heavily scrambling languages do not have DP. However, his analysis focuses only on adjectival and demonstrative LBE and falls short of explaining scrambling in VPs. Since VPs are not dominated by DPs, the possibility of scrambling of VP-level elements, such as adverbials duže ‘very’ in 2a and 2c cannot be accounted for under this analysis even if we assumed that Ukrainian lacks a DP layer.
In sum, while exhibiting certain similarities in extraction patterns with LBE, Split Scrambling in colloquial Ukrainian affects a wider range of syntactic constituents than LBE which provides an account only for left-branch material extracted out of a nominal phrase. What is more, there are important differences between LBE and nominal splits in Ukrainian which can be seen from 12 and the data discussed in the following chapter.

2.1.2 Remnant Movement

The Remnant Movement analysis was first proposed by Den Besten and Webelhuth (1990) to account for the phenomenon of remnant VP topicalization in German. They claim that remnant VP topicalization results from double movement: first the direct object (that becomes part B) is scrambled out of the VP into the middle field, which is followed by fronting of the remnant VP (part A) that contains the trace of the scrambled NP. It is assumed that the second step of movement involves topicalization of part A.

(13) VP-topicalization in German

\[
\text{Gelesen hat Hans das Buch.} \\
\text{Part A} \quad \text{Part B} \\
\text{read has Hans the book} \\
\text{‘Hans has read the book.’}
\]

This analysis is applied by Bašić (2004) to Serbo-Croatian and by Sekerina (1997) to Russian data. However, as Kariaeva (2009) points out, the Remnant Movement analysis fails to account for multiple word order permutations that are allowed in Ukrainian and Greek (as well as other languages). Pereltsvaig (2008) also argues against this analysis and points to unmarked word order in Russian splits which cannot be explained under the Remnant Movement analysis since it
implies topicalization of part A of the split, which is not always the case in colloquial Russian. She further argues that Bašić’s (2004) analysis implies that both parts of a split need to be a constituent, which is not always the case in Russian or Ukrainian. Still another weakness of this type of analysis is that it cannot be extended to cases of extremely local movement which is allowed in both Ukrainian and Russian.

2.2 Base-generation Approaches to Split Scrambling
According to base-generation approaches (Fanselow 1988, Chomsky 2000, 2001, Kariaeva 2009) to scrambling, discontinuous constituents are generated in the position in which they surface and do not result from movement. This account of scrambling, while perhaps appropriate for some languages, cannot be expanded to all languages allowing split constructions. Thus, Pereltsvaig (2008) challenges Fanselow’s (1988) analysis proposed for German splits with the fact that Russian splits with numerals seem to involve base-generation followed by some form of movement. This leads Pereltsvaig (2008) to conclude that scrambling in Colloquial Russian involves both base generation and movement. This analysis of split scrambling is referred to as the scattered deletion approach in the literature.

2.3 Scattered Deletion Approach to Split Scrambling
The scattered deletion approach (Čavar & Fanselow 2000, Fanselow & Čavar 2002, Nunes 2004) relying on the copy theory of movement (Chomsky 1993, Nunes 1995, Junghanns & Zybatow 1995), suggests that discontinuous constituents are derived by copying the whole phrase that is to be split into several locations and then deleting different parts of the phrase in its multiple copies (partial interpretation of copies). This approach is applied by Pereltsvaig (2008) to analyze split phrases in colloquial Russian. Following Fanselow and Čavar’s
(2002) analysis but relaxing its constraining mechanism, she claims that scrambling in Russian is feature-driven and multiple copies of the phrase to be split are partially interpreted at PF with one part of the split being interpreted by the PF interface in the higher copy and the second part of the split being interpreted in the lower copy, as shown in 14.

(14) Movement + partial interpretation of copies

a. Merger positions
   Možno kupit' klubnichnogo varen'ja
   possible to.buy strawberry.F.GN jam.F.GN
   ‘It’s impossible to buy strawberry jam.’

b. Step 1 (feature-driven movement, here scrambling)
   klubnichnogo varen'ja možno kupit' klubnichnogo varen'ja
   strawberry.F.GN jam.F.GN possible to.buy strawberry.F.GN jam.F.GN

c. Step 2 (PF-interpretation)
   klubnichnogo varen'ja možno kupit' klubnichnogo
   varen'ja
   strawberry.F.GN jam.F.GN possible to.buy strawberry.F.GN.SG
   jam.F.GN

   (Pereltsvaig 2008:22)

Pereltsvaig (2008) considers [topic] and [focus] to be interpretable features and claims that scrambling is triggered by the feature [contrastive], which is responsible for distinguishing Contrastive Topic from a regular topic and Contrastive Focus from a regular Focus. However, Kariaeva (2009) points out that under this analysis, the actual mechanism that determines the spell-out of the parts of a discontinuous constituent is unclear. The mechanism proposed by Pereltsvaig (2008) appears to be relatively unconstrained, which leads Kariaeva (2009) to
claim that under this analysis, the role of interpretable focus and topic features is quite arbitrary and irrelevant to the spell out rule. Thus, this type of analysis, being rather unconstrained, does not provide a clear mechanism for determining the order of discontinuous constituents in a sentence. What is more, it fails to account for cases of extremely local movement (such as 17-18 below) when material is fronted just to the left of its base position and there is no intermediate syntactic position where it can land.

2.4 Split Scrambling in Ukrainian

While many studies looked at scrambling in different languages (Serbo-Croatian, Turkish, Russian, Hungarian, Japanese), scrambling in Ukrainian has not received close attention.

Kariaeva (2009) proposes an analysis of discontinuous constituents in Ukrainian and Modern Greek from the point of view of the Radical Discontinuity Hypothesis (see Chomsky 2000, 2001) and assumes that discontinuous constituents in these two languages do not result from splitting a phrase but are the product of long-distance concord. In Kariaeva’s account of discontinuous constituents, the distribution of functional and lexical categories is asymmetrical because of their different properties. While lexical items can be generated at a distance from each other and foster relations through agreement, functional categories can relate to lexical items only structurally, which is why their distribution is much more restricted. According to Kariaeva, the surface realization of lexical and functional items is determined by two distinct mechanisms: Merge for lexical items and the interface linearization mechanism for functional categories. Thus, nominal functional categories are required to be base-generated next to the noun by the theory of extended projection (Grimshaw
while adjectival modifiers as lexical categories are not tied and can be generated at a distance from the noun they modify. However, this analysis is challenged by the fact that some prepositions can be stranded in colloquial Ukrainian and can appear at a distance from the noun that heads the PP.

To summarize, the syntactic accounts of scrambling that have been proposed lead to different generalizations and leave a number of controversial issues. The analyses proposed for a certain lexical constituent often fail to extend to the similar phenomenon in another lexical constituent. In light of these facts, the question arises whether there is an alternative solution that would straightforwardly capture the problematic cases of word order permutations and obvious insensitivity of scrambling to syntactic constraints. Chapter 4 discusses a possible alternative to syntactic accounts of scrambling with the basic claim being that in Ukrainian movement may be purely phonological in nature. Data from colloquial Ukrainian discussed in the following chapter show that scrambling is sensitive to prosodic constraints, and insensitive to a wide range of syntactic constraints, which I take as evidence that scrambling involves movement in the phonology rather than syntax.
CHAPTER 3: DATA AND GENERALIZATIONS

Ukrainian is an underlying SVO, right-branching language. Head-initial order in Ukrainian is pragmatically neutral and can be considered as the base order.

(15) Head-initial order in DP, NP, AP, PP, VP and CP
a. taka vroдlyva divчyna
   such.F.NM beautiful.F.NM girl.F.NM
   ‘such a beautiful girl’
b. čaška kavy
   cup.F.NM coffe.N.GN
   ‘a cup of coffee’
c. duže dobra ludyna
   very kind.F.NM person.F.NM
   ‘a very kind person’
d. u velykomu budynku
   in big.M.PREP house.M.PREP
   ‘in a big house’
e. pročytaty knygu
   to.read book.F.AC
   ‘to read a book’
f. jakščo ty rozpovisy meni
   if you tell.2 me.DT
   ‘if you tell me’

Ukrainian (like many other Slavic languages) does not have overt determiners, which leads some to believe that Slavic languages (with the
exception of Bulgarian and Macedonian) lack a DP layer (Corver 1990, Bošković 2005). There is a great deal of controversy in the literature concerning the presence/absence of a DP layer in Slavic. In this paper I assume the universality of the DP-hypothesis and treat demonstrative words cej/cja/ce/ci ‘this/these’, takyj/taka/take ‘such’ and jakyjs’/jakas’/jakes’/jakis’ ‘some’ as determiners.

Due to the elaborate case system and rich agreement in number and gender in Ukrainian, it is quite common for lexical heads to undergo movement involving left branch extraction resulting in movement of the head to the beginning of a phrase as in 16a. However, the movement can be extremely local when the head is fronted just one word to the left of its original base (16b).

(16)  Head movement involving left branch extraction
a.  taku  vona  spivala  garnu  pisn’u
    such.F.AC  she  sang.3  beautiful.F.AC  song.F.AC
    ‘She sang such a beautiful song.’
b.  Duže  ja  l’ubl’u  cej  fil’m.
    Very  I  like.1  this.M.AC  movie.M.AC
    ‘I like this movie very much.’

Also possible are cases when the head occurs at the end of the phrase. Below are examples of complements fronted to the left of their heads.

(17)  Head-final positions of XPs
a.  roslyna  taka
    plant.F.NM  such.F.NM
    ‘such a plant’
b.  sonjašnykiv  pole
    sunflowers.GN.PL  field.N.NM
    ‘a field of sunflowers’
c. švydko duže
quickly very
‘very quickly’

Subconstituents from inside the complements can also be fronted around lexical heads. Below are cases of lexical heads preceded by a subconstituent of their complements in DP (18a), NP (18b), AP (18c), VP (18d) and CP (18e).

(18) Lexical heads preceded by a subconstituent of their complements
a. škody narobyly takoji
damage.F.GN caused.3PL such.F.GN
‘(they) caused such damage’
b. cukerok korobka šokoladnyx
candies.GN.PL box.F.NM chocolate.GN.PL
‘a box of chocolate candies’
c. pisneju zahoplena cieju
song.F.INSTR fond.F.NM this.F.INSTR
‘(she) is fond of this song’
d. istoriju rozpovila smišnu
story.F.AC she.told.3 funny.F.AC
‘(she) told a funny story’
e. (Ja tobi kazala) togo ne robyla ščob ty
I.NM you.DT told.1 it.GN not do.3 (sothat) you.NM
‘I told you not to do it.’

Note that cases like 18a, 18c and 18d challenge Bošković’s (2005) analysis of LBE since they allow fronting of the nouns and leaving prenominal modifying elements behind. These cases are also problematic for Bašić’s (2004)
account of split constructions, under which fronting of just the NP to a very local position is highly unexpected.

In Ukrainian, extracted material does not always form a constituent or a subconstituent. Thus, in 19a, the determiner cej ‘this’ is preceded by material from its complement duže včynok ‘very deed’ that does not form a syntactic constituent. Below are examples of non-constituents being extracted from DP (19a), NP (19b), AP (19c), VP (19e), and CP (19f).

(19) Extraction of a non-constituent
a. duže včynok cej smilyvyj
very deed.M.NM this.M.NM brave.M.NM
‘this is a very brave deed’
b. kasyvyx červonyx pole makiv
beautiful.GN.PL red.GN.PL field.N.NM poppies.GN.PL
‘a field of beautiful red poppies’
c. cieju radisnoju sxvyl'ovanyj novynoju
this.F.INSTR good.F.INSTR excited.M.NM news.F.INSTR
‘(he is) excited by this good news’
e. Dovgogo pro ce napysala lysta.
long.M.GN about that.M.PREP she.wrote.3 letter.M.GN
‘(She) wrote a long letter about that.’
f. Vona zavdannja, ja vpevnena, ščo vykonaje.
she task.M.AC I am.sure.1 that will.perform.3
‘I’m sure that she will perform the task.’

Note that in all the cases provided above, the fronted material, while not always forming a syntactic constituent, consistently appears to be a phonological constituent. Consider 19c, where each element of the fronted string of words
"cieju radisnoju" belongs to a different syntactic constituent. Prosodically, however, this fronted string forms a phonological word (ω). Below is example 19c phrased prosodically:

(20) Prosodic constituency

```plaintext
((Cieju radisnoju)_ω (sxvy{l}ovanyj)_ω (novynoju)_ω)ɸ
this.F.INSTR good.F.INSTR excited.M.NM news.F.INSTR

(he is) excited by this good news
```

The assumption that movement occurs within phonology allows cases of fronting strings of words consisting of function words moved together with the following lexical words (as examples 12, 19c, and many others). These cases, which are very common in Ukrainian, are problematic for a syntactic analysis of scrambling since they form a string of disjointed non-constituents. In phonology, however, strings like function word + lexical word are phrased as one prosodic word since function words are invisible in the mapping from syntactic structure to prosodic structure (Selkirk 1984). According to Selkirk (1986, 1995), the right edge of a noun, verb, or adjective defines the right edge of a prosodic word (ω). The right edge of an NP, VP, or AP marks the end of a phonological phrase (ϕ). So, adjacent function words form one prosodic word with the following lexical word, which allows cases like 12, where the string "u velyku novu" ‘in big new’ is fronted. While syntactically it does not form a constituent, prosodically, this string consists of two phonological words (u velyku)_ω (novu)_ω. Fronting of this string of words does not violate any conditions if we assume that scrambling involves movement in the phonological component rather than movement in the syntactic component. The assumption that scrambling in Ukrainian is sensitive to phonology is further supported by some surprising facts about split prepositional phrases.
As in Russian (Henderer 2009), PPs in Ukrainian can split only under the following two conditions: (i) a preposition cannot be stranded by itself and (ii) no part of the prepositional object can precede the preposition. The sensitivity to these two conditions is exemplified in 21.

(21) Split PPs in colloquial Ukrainian

a. Na temnomu zori s'ajut' nebi.
   on dark.N.INSTR stars.NM.PL twinkle.3PL sky.N.INSTR
   ‘Stars are twinkling in the dark sky’

b. *Temnomu nebi zori s'ajut' na.
   dark.N.INSTR sky.N.INSTR stars.NM.PL twinkle.3PL on

c. *Nebi zori s'ajut' na temnomu.
   sky.N.INSTR stars.NM.PL twinkle.3PL on dark.N.INSTR

d. *Temnomu zori s'ajut' nebi na
   dark.N.INSTR stars.NM.PL twinkle.3PL sky.N.INSTR on

However, there seems to be one exception to this rule. As in Russian, prepositions in Ukrainian can behave as other XPs when a preposition is longer than one syllable. Henderer (2009) shows that in colloquial Russian, a preposition that is longer than one syllable can be moved to the left of its original position when it is focused. She cites the following example (22):

(22) Split PPs with stranded prepositions in colloquial Russian

Vazno idti navstreču soznatel'nogo etomu strahu.
important to.go toward consciously this.M.DT fear.M.DT
‘It is important to consciously go toward this fear’

(RNC 1974)
Note that in 22, the stranded preposition navstreču ‘towards’, being focused and polysyllabic, is a prosodic word. This leads Henderer (2009) to suggest that the movement in Russian is phonological.

The same pattern is found in colloquial Ukrainian. As a rule, complex prepositions that are mostly of nominal origin can be moved around the sentences just as lexical words can. Since many of them were formed as a result of a combination of a preposition and a noun, it comes as no surprise that they tend to behave as prosodic words with respect to fronting.

(23) Split PPs with stranded prepositions in colloquial Ukrainian
a.  V mežah vin dijav dozvolenogo.
within bounds.of he acted.3 allowable.N.AC
‘He acted within the bounds of what was allowed.’
b.  Prot'agom vony zustričals' lita.
during they met.3PL summer.N.GN
‘They were seeing each other during the summer.’
c.  Vin vsupereč vystupyv zaborony
he against acted3 prohibition.F.GN
‘He protested against prohibition.’

Below are examples of subconstituents being extracted from a PP complement.

(24) Subconstituent fronted around preposition
a.  hvylyn čerez desjat'
minutes.GN.PL in ten
‘in ten minutes’
b.  litriv na p'jat' bil'se
liters.GN.PL on five more
‘five liters more (than …)’

c. *vidsotkiv* na dvadc’at’ zris riven’
percent.GN.PL on twenty increased.3 level.M.NM

‘The level increased by twenty percent’

Note that 24c also disobeys the Freezing Island Condition (Lasnik & Saito 1992) since the subconstituent *vidsotkiv* 'percent' has moved from the complement *na dvadc'at' vidsotkiv* 'by twenty percent' that has itself moved from a position following the verb.

In 25, the preposition is preceded by the left branch of the complement. Note that as long as the preposition is not stranded, the material around it can be extracted from within the PP.

(25) Left Branch Movement

a. *duže* v tisnyh stosunkah
very in close.PREP.PL relationship.PREP.PL
‘in very close relationship’

b. *nadzvyčajno* v tjažkyh umovah
extremenly in hard.PREP.PL conditions.PREP.PL
‘in extremely hard conditions’

c. *zanadto* u velykij zaležnosti
too in great.F.PREP dependence.F.PREP
‘in too great dependence’

As can be seen from the data provided above, scrambling in colloquial Ukrainian is hard to account for syntactically. Cases 21, 23, 24, and 25 show that prepositional phrases disregard a number of syntactic constraints while being sensitive to prosody. Prepositions cannot be stranded by themselves and are usually moved together with the following prosodic word. However, when
focused and consisting of more than one syllable, prepositions can be moved around the clause like all other lexical heads.

The data discussed below show that Split Scrambling in Ukrainian disregards a host of syntactic island conditions. For instance, it can involve extraction out of coordinate structures, which shows insensitivity to the Coordinate Structure Constraint (Ross 1967).

(26) Disobedience to Conjunction Islands
a. bagato grošej vin na te poklav i zusyl’
a lot of money.GN.PL he on this.NM.AC put.3 and effort.GN.PL
‘he put a lot of money and effort into this’
b. mašynu maje i kvartyru
car.F.AC he.has.3 and apartment.F.AC
‘he has a car and an apartment’

Split Scrambling also disregards the Adjunct Condition (Huang 1982, Chomsky 1986) and extracts material out of adjuncts.

(27) Insensitivity to the Adjunct Condition
a. v riznyx meškajut’ mistah
in different.PREP.PL they.live.3PL cities.PREP.PL
‘They live in different cities.’
b. iz odnogo pohodjat’ džerela
from same.N.GN they.come.3PL source.N.GN
‘(they) come from the same source’

Wh-islands are also disobeyed in Ukrainian. Case 28 illustrates that the movement of synja “blue” cannot be A-bar movement. Synja would not be allowed to move over de “where” since de “where” has already been moved to the specifier of a CP, thus making CP an island for further extraction.
Splits including Wh-islands

Synja ne znaeš de moja suknja?

‘Don’t you know where my blue dress is?’

Split Scrambling also disregards freezing islands (Lasnik & Saito 1992) and allows extracting material out of an already extracted phrase. In 29a, skil'ky ‘how many’ is extracted from skil'ky svojih knyg ‘how many of his books’, which has already been fronted out of the object position of the verb podaruvav ‘gave’. In this case, not only is skil'ky ‘how many’ moved out of an already extracted phrase, but also the remaining part svojih knyg ‘his books’ is further split. The same is seen in 29b, where jaku ‘what’ is extracted out of an already extracted phrase jaku dorogu rič ‘what expensive thing’ with the remainder of the phrase dorogu rič being split apart.

(29) Disobedience to the Freezing Condition

a. Skil'ky, ty ne znaješ, vin svojih jij knyg podaruvav?
   ‘Don’t you know how many of his books he gave her?’

b. Jaku, ty ne spytav, vin dorogu pryviz rič iz Franciji?
   ‘Didn’t you ask (him) what expensive thing he brought from France?’

Syntactic movement out of the subject of a sentence is generally blocked by the Subject Condition. However, this condition is disobeyed in Ukrainian. In
30a, the subject *bagato rokiv* ‘a lot of years’ is split by the predicate. In 30b, a
subconstituent of the subject is stranded at the end of the clause.

(30) Disobedience to the Subject Condition

a. *Bagato* mynulo  *rokiv*  z tyh pir, jak my bačylys'
vostann'e.

a lot of passed.3PL years.NM.PL since we saw.1.each.other.

last time

‘A lot of years have passed since we saw each other last time.’

b. *Čolovík z p'jat'na naše prohannja vidpovily studentiv.*

People.GN.PL around five to our.F.AC request.F.AC responded.3 students.GN.PL

‘Around five (people of) students responded to our request.’

The argument that Split Scrambling in colloquial Ukrainian is
phonological in nature can be further supported by the fact that it is semantically
vacuous for anaphor binding, which is presumably dependent purely on syntax.
In cases 31-32 the c-command relation is ignored. In 31, antecedent *ja* ‘I’ is
preceded by its anaphor *sebe* ‘self’. The same pattern is found in 32, where the
anaphor *odyń vid odnogo* ‘one from another’ is followed by its antecedent *vony*
‘they’. Note that fronted reflexives and reciprocals in these sentences are
interpreted as if they were in situ, following their antecedents.

(31) Fronted reflexives

gavel self.AC I workF.D without doubt.N.PREP

‘I gave (devoted) myself to work without doubt’
b. Sebei, ja, pro ce ves' čas pytaju
Self.AC I about this.AC all time ask.1
‘I ask myself about this all the time.’

(32) Fronted reciprocals
Duže [odyn vid odnogo], vony, vidriznjajut'sa.
Greatly one.AC from another.AC they differ.3PL
‘They differ greatly one from another.’

As in colloquial Russian, DP possessors in Ukrainian can be extracted and
moved around an intonational phrase. In 33a, the DP possessor Marijky
‘Marijka’s’ is moved to the left of its original position while in 33b, the
possessed DP is fronted. Case 33a is also an example of insensitivity to the Left
Branch Condition (Ross 1967) since the leftmost constituent Marijky ‘Marijka’s’
is moved out of the DP.

(33) Extracted DP possessors
a. Marijky vin zgadav ljubov.
Marijka.AC he remembered.3 love.F.AC
‘He remembered Marijka’s love’

b. Tam don'ku vin zustriv Borysa.
There daughter.F.AC he met.3 Borys.GN
‘He met Borys’ daughter there’

Another example of insensitivity of Split Scrambling in Ukrainian to
syntactic constraints comes from the fact that proper names can be split and
moved around an intonational phrase, which would be impossible if syntactic
considerations were taken into account since proper names in syntax are a single
unit. In phonology they are separate prosodic words.
(34) Splits with proper names

a. V Olsesja ž Gončara často zustričajemo podibni zvoroty.
   ‘We often find such terms in Oles Gončar’s (books).’

b. Olenu ja s'ogodni zustriv Verbyc'ku.
   ‘Today I met Olena Verbyc'ka.’

The most surprising cases involve splits with lexical compounds. Even though they are quite rare, sentences like 35 are possible in colloquial speech.

(35) Splits with lexical compounds

v školi vin navčavsja internati.
   ‘He studied in a boarding school.’

The following chapter discusses a phonological analysis of scrambling in colloquial Ukrainian which straightforwardly captures a number of properties of this language that are otherwise unaccounted for under the syntactic approaches discussed in Chapter 2.
A&G propose that Classical Greek hyperbaton involves pervasive phonological movement since it meets two conditions: it ignores syntactic constraints (including syntactic constituency, syntactic islands, and semantic conditions that rely on syntactic relations) and is sensitive to phonology.

Colloquial Ukrainian, with its free word order that can involve moving not only constituents, but also parts of constituents, appears to be a good candidate for phonological movement as well.

The examples provided above show that Split Scrambling in colloquial Ukrainian disregards a number of syntactic conditions (the Coordinate Structure Constraint, the Adjunct Condition, the Left Branch Condition, the Subject Condition, Freezing Islands, Binding of Anaphors), which suggests that Ukrainian meets the first condition formulated by A&G. As for the second condition, the data provided below show that Split Scrambling in Ukrainian appears to be sensitive to prosodic constraints. Thus, while strings of words that are moved do not always form a syntactic constituent, they do always form a prosodic constituent. For example, in 21a and 27a the fronted strings Prep + Adj (na tennonu ‘in dark’ in 21a and v riznyh ‘in different’ in 27a), while not a syntactic constituent, are a prosodic word.

Furthermore, Split Scrambling in Ukrainian is sensitive to prosodic conditions on well-formedness. It never brings together identical phonological elements within a prosodic word, which would violate the Obligatory Contour Principle (Leben 1973).
(36) The Obligatory Contour Principle:

a. *(Tomu tomu čolovikovi)ₒ (vona ne mogla)ₒ (dovirjaty)ₒ.
   that’s why that.M.GN man.M.GN she not could.3 trust.INF
   ‘That’s why she couldn’t trust that man.’

b. (Tomu tij žinci)ₒ (vona ne mogla)ₒ (dovirjaty)ₒ.
   that’s why that.F.GN woman.F.GN she not could.3 trust.INF
   ‘That’s why she couldn’t trust that woman.’

The coordinate conjunction tomu ‘that’s why’ is homophonous with the
masculine genitive form of the determiner ‘that’ in Ukrainian. In 36a the DP
tomu čolovikovi ‘that man’ cannot be fronted and put immediately after the
conjunction tomu since this would result in bringing together two homophonous
function words tomu tomu within a phonological phrase. As we can see from
36b, fronting of the DP tij žinci in the same sentence is possible since the
feminine genitive form of the determiner ‘that’ is not identical to the preceding
function word.

It is interesting that cases like 36 have also been analyzed by the
proponents of copy-deletion approaches with the phonological component in
mind. According to this analysis (Boškovič 2002, as cited in Hornstein et al.
2005), movement involves creating multiple copies with only one of them
realized at PF. Thus, the sentence 36a is ungrammatical since it brings together
two identical words tomu tomu. In order for this sentence to become
grammatical, the higher copy of “that” tomu should be deleted by the
phonological system and the lower copy should be realized as illustrated in 37.
The Obligatory Contour Principle:

Tomu čolovikovi tomu vona ne mogla dovirjaty.

That’s why that man. she not could.3 trust. INF

‘That’s why she couldn’t trust that man.’

Thus, the copy-deletion approach acknowledges that there is no difference between 36a and 37 from a syntactic point of view and that it is phonology that comes into play here. While such an account for movement is not implausible, the analysis proposed in this paper provides a much simpler and more consistent explanation of how scrambling works. Instead of assuming that there are multiple copies created each time with different factors influencing the choice of the copy that will be realized, the phonological account of scrambling offers a simpler condition: the movement must be done in the phonological component and should obey prosodic constraints.

Constraints on split prepositional phrases provide another piece of evidence for the sensitivity of Split Scrambling to phonology. As can be seen from 21 and 23 above, only polysyllabic prepositions can be moved out of a prepositional phrase while monosyllabic prepositions cannot be moved by themselves since the latter are not prosodic words. No syntactic constraints would take into consideration the number of syllables in a word since its function in the sentence is what matters for syntax. However, phonology should in principle be sensitive to such a restriction.

Sensitivity to prosodic constraints is further illustrated by the examples with fronted reflexives and reciprocals (31-32), extraction of DP possessors (33), splits with proper names (34) and lexical compounds (35). In all these cases the
fronted material always forms a phonological constituent and it would be an odd coincidence if syntax would somehow ensure that the displaced material was always a legal phonological constituent. This sensitivity of Split Scrambling in Ukrainian to phonology is also hard to account for under base-generation analyses since it is unclear why a string of non-constituents (as in cases 21a and 27a discussed above) would be assembled together, base-generated in fronted position in syntax, and then lowered in LF into the regular constituent position for interpretation.

In sum, the data provided above suggest that Ukrainian is a good candidate for phonological movement since it meets both conditions for phonological movement as proposed by A&G: it disobeys syntactic constraints and is sensitive to phonology. If so, the question about the type of relationship between syntax and phonology and the point at which they diverge arises.

A&G argue that “phonological movement arises as the result of constraint interaction in the phonological component, subsequent to the interface between syntax and phonology” (p. 137). Thus, in their model, syntax is responsible for defining only the hierarchical structure of the sentence (sisterhood relations) and does not influence linear-precedence relationships. It is the phonological component where left/right order is decided.

In order to explain how the output is derived as a result of syntax and phonology interaction, A&G assume a three-part serial model of grammar where syntax first feeds an interface module which later feeds phonology. Henderer (2009) adapts this model for scrambling in colloquial Russian, and it can be applied to describe movement in colloquial Ukrainian as well.
Syntax/phonology interface model (adapted from A&G)

Syntax \([\text{VP}_v \text{vidislala}], \text{[NP} \text{lysta]}\) (immediate dominance)
\[\downarrow\]

Interface \(((\text{vidislala}_\omega) (\text{lysta}_\omega)_{\phi})_{\phi}\) (linear precedence)
\[\downarrow\]

Phonology \(((\text{lysta}_\omega)_{\phi} (\text{vidislala}_\omega))_{\phi}\) (scrambling)

It is assumed that syntax determines immediate dominance but is not responsible for linear-precedence relations. In the model provided in 38, syntax determines that \textit{vidislala} “sent” and \textit{lysta} “a letter” are sisters within VP, however, it is not syntax that decides which of these two words will precede the other one. The syntax feeds the interface component, which creates prosodic constituency and simultaneously determines linear-precedence relations taking into account the prosodic hierarchy and alignment constraints. In the model in 38, the interface determines that \textit{vidislala} and \textit{lysta} are each a prosodic word (\(\omega\)), that the XPs headed by \textit{vidislala} and \textit{lysta} are each a phonological phrase (\(\phi\)), and that the linear order is \textit{vidislala} \textit{lysta} rather than \textit{lysta} \textit{vidislala}. The output of the interface component \(((\text{vidislala}_\omega) (\text{lysta}_\omega)_{\phi})_{\phi}\) is the input to phonology, where scrambling occurs if it is forced by lexical or pragmatic considerations.

### 4.1 The Interface

The assumption is that the interface determines linear-precedence relations based on the interaction of constraints. A&G point out that these are well-studied alignment constraints, however, “their effects have been underappreciated in the literature” (p. 155). A&G follow Selkirk (1995) and assume that LAYEREDNESS and HEADEDNESS are two universally undominated constraints that cannot be violated in the mapping from syntax to prosody.
(39) Universally undominated constraints

**LAYEREDNESS:**

No $C^i$ dominates a $C^j$, $j > i$ (e.g. no $\sigma$ dominates a foot).

**HEADEDNESS:**

Any $C^i$ must dominate a $C^{i+1}$ (e.g. a $\omega$ must dominate a foot).

(40) Constraints determining word order in XPs (see Selkirk 1995)

**ALIGNR($X^0$, $\omega$):**

The right edge of every lexical $X^0$ is aligned with that of a $\omega$.

**ALIGNR($\omega$, $X^0$):**

The right edge of every $\omega$ is aligned with that of a lexical $X^0$.

**ALIGNR(XP, $\phi$):**

The right edge of every lexical XP is aligned with that of a $\phi$.

(41) Lexical XP: *vidislala lysta* “sent a letter”

<table>
<thead>
<tr>
<th>[vidislala$<em>v$, lysta$</em>{NP}$]$_{VP}$</th>
<th>ALIGNR($X^0$, $\omega$)</th>
<th>ALIGNR($\omega$, $X^0$)</th>
<th>ALIGNR(XP, $\phi$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.(vidislala$<em>\omega$lysta$</em>\omega$)$_\phi$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b.(lysta$<em>\omega$vidislala$</em>\omega$)$_\phi$</td>
<td></td>
<td></td>
<td>*!</td>
</tr>
<tr>
<td>c.(vidislala$<em>\omega$lysta$</em>\sigma$)$_\phi$</td>
<td>*!</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d.(lysta$<em>\omega$vidislala$</em>\omega$)$_\phi$</td>
<td>*!</td>
<td></td>
<td>*</td>
</tr>
</tbody>
</table>

In tableau 41, ALIGNR($X^0$, $\omega$) requires every lexical head (in this example, both *vidislala* and *lysta*) to right-align with a prosodic word boundary, which is the case in (a-b). In (c-d) though, this constraint is violated because one of the words is parsed as a syllable. ALIGNR(XP, $\phi$) determines the head-initial status of 41a and rules out the head-final case 41b.
If a sentence does not involve phonological movement (as in 41), the surface order will be identical to the output of the interface component. So, the above example 41 will surface as *Vidislala lysta* with the complement following the verb.

However, if pragmatic considerations force the complement to be focused, phonological movement will occur. In order to keep the output of the postlexical phonology similar to the input, A&G propose three faithfulness constraints.

(42) Constraints against movement

\[
\text{STAY}_\omega: \text{No daughter of } \omega \text{ moves.}
\]

\[
\text{STAY}_\phi: \text{No daughter of } \phi \text{ moves.}
\]

\[
\text{STAY}_t: \text{No daughter of } t \text{ moves.}
\]

The tableau in 44 shows how these constraints maintain faithfulness to the input and prohibit phonological movement. Below is the example 15d *u velykomu budynku* ‘in a big house’ repeated with the prosodic structure and linear order defined by the interface constraints.

(43) \((u \ velykomu)_\omega \ (budynku)_\omega)_\phi\)

\[
\text{in big.M.PREP house.M.PREP}
\]

‘in a big house’

The output of the interface *u velykomu budynku* is the input to the postlexical phonology where identity constraints maintain faithfulness to the input.

(44)

\[
\begin{array}{|c|c|c|}
\hline
\text{Input} & \text{STAY}_\omega & \text{STAY}_\phi \\
\hline
\text{a. (u}_\omega \ \text{velykomu}_\omega)\omega \ (budynku)_\omega)_\phi & \checkmark & \\
\hline
\text{b. (budynku)_\omega} \ (u}_\omega \ \text{velykomu}_\omega)\omega)_\phi & & \ast! \\
\hline
\text{c. (velykomu}_\omega \ (u}_\omega \ (budynku)_\omega)_\phi & & \ast! \\
\hline
\end{array}
\]
Candidate (a) does not violate any constraints. In (b) budynku ‘house’, which is a daughter of $\phi$, is moved leftwards and this violates STAY$\phi$. Candidate (c) violates STAY$\omega$ since u ‘in’, a daughter of $\omega$ velykomu ‘big’, is moved to the right and becomes a part of a different $\omega$ budynku ‘house’.

4.2 Split Scrambling

As has been mentioned before, if pragmatic considerations (focus, topic, foregrounding) force a certain part of an utterance to be focused, phonological movement will occur. It can involve movement of prosodic words ($\omega$), which is the case of Split Scrambling, and movement of phonological phrases ($\phi$), which is the case of XP-Scrambling. Case 46 below is an example of Split Scrambling because a prosodic word (lysta)$_\omega$ ‘letter’ is moved. In 52, which is the case of XP-Scrambling, the whole phonological phrase ((vidislala)$_\omega$ (lysta)$_\omega$)$_\phi$ ‘sent a letter’ receives maximal prominence and is fronted past the subject.

To account for the cases where pragmatic considerations trigger phonological movement, A&G propose the following two constraints:

(45) Constraints that require movement

PROML: Prominent material occurs to the left of its interface position.

1PROM: Maximally prominent material is initial in 1.

The analysis proposed by A&G for Classical Greek hyperbaton is adapted by Henderer (2009) to account for scrambling in colloquial Russian. She mentions that the above two constraints “are enough to account for all possible word orders in Russian” (p. 25). In this paper, the same analysis is applied to explain all possible word orders resulting from scrambling in colloquial Ukrainian. Depending on the degree of prominence, the material can be moved to different positions in a sentence. Thus, prominent material (underlined) will
move only one word to the left of its interface position, while maximally prominent material (double-underlined) will move all the way to the left edge of an intonational phrase.

(46) SOV

Marija lysta vidislala.

Marija.F.NM letter.M.AC sent.3

‘Maria sent a letter.’

(47) 

<table>
<thead>
<tr>
<th>Candidate</th>
<th>STAYω</th>
<th>PROML</th>
<th>STAYϕ</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (((Marija)ω)(lysta)ω)ϕ</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>b. (((Marija)ω)(vidislala)ω)(lysta)ω)ϕ</td>
<td></td>
<td>*!</td>
<td></td>
</tr>
<tr>
<td>c. ((lysta)ω)ϕ (((Marija)ω)(vidislala)ω)ϕ</td>
<td></td>
<td><em>!</em></td>
<td></td>
</tr>
</tbody>
</table>

Candidate (a) is optimal since it minimally violates only STAYϕ which is low-ranked. Candidate (c) violates the same constraint to a greater degree than (a) by moving the prominent material too far from its interface position. Candidate (b) violates PROML since it fails to move the prominent material lysta to the left.

OSV order is derived when the direct object is fronted all the way to the left edge of the intonational phrase as a maximally prominent material.

(48) Lysta Marija vidislala.

Letter.M.AC Maria.F.NM sent.3

‘Maria sent a letter.’
Candidate (a) has prominent *lysta* as far to the left as it can be and violates only low-ranked STAYϕ; (b, c) lose out to (a) because the prominent material is further from the left edge of ɩ.

It is interesting that scrambling results in rearrangement of prosodic constituents in candidate (a). The prosodic structure for SVO order is as follows:

(50) Prosodic structure for SVO order

```
        v
         i
        / \ 
       /   \
      φ   φ
     / \   \ 
    ω  ω  ω
Marija vidislala lysta
Maria sent letter
```

However, the prosodic structure for OSV order will have three phonological phrases instead of two since *lysta Maria* does not form a phonological phrase. So, the tree for OSV order will look as follows:
(51) Prosodic structure for OSV order

4.3 XP-Scrambling

The two examples above (46-49) are cases of Split Scrambling where a single prosodic word is moved from its interface position. In the case of XP-Scrambling (52-53) the whole phonological phrase is fronted. VOS order is a good example of XP-Scrambling where the entire VP receives maximal prominence.

(52) Vidislala lysta Marija.
    sent.3 letter.M.AC Maria.F.NM

‘Maria sent a letter’

(53)

<table>
<thead>
<tr>
<th></th>
<th>STAY₀</th>
<th>PROML</th>
<th>STAY₁</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. (((Marija)ₐ)ᵦ (vidislala)₀ (lysta)₀)ᵦ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. (((lysta)₀)ᵦ (Marija)₀)ᵦ (vidislala)₀)ᵦ</td>
<td><em>!</em></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. (((Marija)₀)ᵦ (vidislala)₀ (lysta)₀)ᵦ</td>
<td></td>
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Two more possible variants of this sentence are the sentences with VSO and OVS order. VSO order is derived when maximal prominence is on the prosodic word that contains the verb (in this case, *vidislala* ‘sent’). OVS order results when maximal prominence appears on the $\phi$ that contains the object (*Lysta vidislala Maria*) and the $\omega$ containing the verb receives minimal focus. Note that both VSO and OVS are the cases of Split Scrambling.

Thus, scrambling in Ukrainian sentences may be derived phonologically, by alignment constraints without any syntactic movement or parameters on headedness.
CHAPTER 5: CONCLUSION

The focus of this thesis has been on scrambling in Ukrainian as phonological movement. This thesis attempted to show that scrambling in Ukrainian involves movement of phonological words and phrases rather than syntactic constituents. What has traditionally been treated as Split Scrambling is treated here as movement of a prosodic word and what has traditionally been treated as XP-Scrambling is treated here as movement of a phonological phrase. Following A&G, it was proposed that two conditions must be met to establish that movement is derived phonologically: (i) the movement must be insensitive to syntactic constraints and ignore semantic conditions that rely on syntactic relations; (ii) it must be sensitive to phonology, including phonological constituency and prosodic constraints. In this study the attempt was made to show that scrambling in colloquial Ukrainian meets both these conditions and, therefore, along with Classical Greek and colloquial Russian is a good candidate for phonological movement.

Scrambling has raised considerable interest in the literature and a number of proposals have been put forward in an attempt to account for its insensitivity to a host of well-established syntactic constraints. Whereas these approaches assume that syntax defines linear word order in a sentence and that insensitivity of scrambling to certain syntactic conditions can be accounted for by introducing additional stipulations concerning the syntactic constraints on movement, I have argued that scrambling in colloquial Ukrainian results from prosodic constraint interaction in the phonological component and that syntax does not play a direct role in defining linear word order in a sentence.
A major argument developed in this thesis is that the hierarchical structure of sentences is derived syntactically, while linear-precedence relations are established at the syntax/phonology interface and are determined by prosodic constraints. Thus, it is prosodic alignment, not syntax, that decides which word in a sentence precedes the other.

The data presented in this thesis provide additional empirical evidence for A&G’s (2010a) proposal for phonological movement. Thus, this thesis adds to the list of languages that have phonological movement: Classical Greek (A&G 2010a), Russian (Henderer 2009), Latin (A&G 2010b), and now Ukrainian.

Further research is needed in the area of functional categories since this thesis mainly focused on lexical constituents. Another area that needs to be studied in greater detail is the prosodic hierarchy in sentences with scrambled word order. It was shown in this thesis that scrambling can result in rearrangement of prosodic constituents in sentences with OSV order (51), which means that phonological movement is not structure-preserving in the phonological component (cf. Emonds 1976). However, this paper did not look into this question in detail. Another future area of research should look into the prosodic factors that trigger the movement since there is no consensus of opinion regarding the causes of the movement.
REFERENCES
REFERENCES


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