

# SCRAMBLING TYPES IN THE SLAVIC LANGUAGES

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# Basic terminology

- Scrambling = a characteristics of languages generating well-formed sentences which can be linearized in two or more ways.
- Linearization = an operation preserving syntactic structure i.e. a hierarchy of syntactic positions but changing the linear order of sentence categories manifested by spelled-out (non-zero) elements. T
- The scrambling condition is defined in a scrambling language  $L_{Sc}$  for any two sentence categories  $x$  and  $y$  if their relative order may be inverted in the linear variants of the same sentence structure with a fixed number of positions and a fixed number of non-zero categories filling these positions:  $x \dots y \sim y \dots x$ .

# Scrambling types

Linguistically interesting cases pertain to scrambling of sentence categories of the same type and/or the same phrase level:

- a) scrambling of verbal arguments;
- b) scrambling of adjuncts;
- c) scrambling of modifiers;
- d) scrambling of verbal heads;
- e) scrambling of phrasal constituents.

The term ‘argument’ is used both for internal arguments (‘objects’) and external arguments (‘subjects’).

# Framework

- The theory of formal grammars and its applications to NLP;
- Formal grammars capable of generating languages with partly unordered sentence trees, cf. [Stabler 1997], [Michaelis & Gärtner 2007], [Rambow 1994].
- The mode of representation of sentence trees as dependency trees vs constituency trees does not affect generative capacity of a language; in this paper I opt for a constituency notation.
- Natural languages are treated mainly as instantiation of formal languages and their grammars: the data from natural languages are considered relevant for checking and revising formal grammars and parsing procedures.
- A word order system is defined as a set of language-specific constraints on word order or as set of type-specific word order constraints shared by similar languages.

# Minimalist Grammars

- Stablerian Minimalist Grammars [Stabler 1997], [Michaelis & Gärtner 2007] and Chomsky's Minimalist Program [Chomsky 2005] are mildly context-sensitive.
- In the Minimalist-type grammars scrambling may be licensed due to two reasons: a) the pair of sentence categories  $\dots x, y \dots \sim \dots y, x \dots$  remains unordered if the grammar has a special *scrambling operator*, so neither order results from a reordering mechanism; b) the order  $\dots y, x \dots$  is derived from the order  $\dots x, y \dots$  by a unidirectional mechanism called *movement*.
- I am assuming that the direction of movement can be established in all pairs  $\dots x, y \dots \rightarrow \dots y, x \dots$  and that each instance of movement has some functional motivation.
- Unverifiable stipulations concerning the amount of movement and scrambling patterns licensed on the level of Universal Grammar (UG) are rejected.
- Word order systems of natural languages do not violate UG but the proportion of language-specific and universal features is irrelevant for my analysis.
- I am not aiming at describing cross-linguistic variation or singling out language types in this paper: the data from Slavic languages are used merely as a motivation for revising formal models.

# Scrambling languages

- All natural languages are restrictive: no language allows for all possible linear orders of sentence categories in 100 % of sentences, linearization constraints are salient for all word order systems.
- Scrambling is a condition when sentence categories may be linearized in two or more different ways, at least in some well-formed sentences.
- It has become customary to classify natural languages into a class of languages with a fixed order of lexical sentence categories and a class of scrambling languages.

The class of scrambling languages can be defined in a twofold way –

- a) languages displaying a number of diagnostic movement patterns responsible for the alternations like  $SVO > VSO$ ,  $SVO > OSV$ ,  $SVO > OVS$ ,  $SVO > SOV$ ;
  - b) languages completely lacking any fixed order of diagnostic sentence categories, say S and O or S, O and V, cf. [Kosta 2006].
- 
- An English sentence like *Pete ate a tomato* does not have a linear variant *\*A tomato ate Pete*, since this language blocks for OVS orders.

# Scrambling and Movement

- A movement approach to scrambling languages capitalizes the idea that there is a unidirectional relation between different linear variants of the same numeration, one of the variants being the source of the others,
- f. the presumably base-generated order in Rus. [ ... ] *Петя съел помидор* and the derived order [*Помидор<sub>i</sub>*] *Петя съел t<sub>i</sub>*:
- With a non-movement approach to scrambling all linear variants as considered representing the same level of derivation, cf. Rus. *Петя съел помидор* (SVO) ~ *Петя помидор съел* (SOV) ~ *Помидор Петя съел* (OSV) ~ *Помидор съел Петя* (OVS) ~ *Съел Петя помидор* (VSO) ~ *Съел помидор Петя* (VOS).
- The domain where categories scramble may be called scrambling domain.

# Local Scrambling

- In the standard case argument scrambling is bounded with a single clause, while all scrambled arguments S, O..U..W belong to one and the same verbal head  $v^{\circ}$ :

(i) Local Scrambling: [<sub>S</sub> {SCRAMBLING DOMAIN ...S... $v^{\circ}$ ...O...}].

- Scrambling of the type (i) is ‘local’ or ‘bounded’; it does not pose problems with either non-movement or movement analysis, since all positions available for a scrambled category are located in one and the same domain.

# Unbounded Scrambling

- There is uncontested evidence that world's languages have unbounded scrambling, where the permuting arguments may belong to different verbal heads  $v^1, v^2 \dots v^n$ .
- In German CPs, unbounded argument scrambling takes place in the domain between a complementizer (Comp) and the verbal complex, cf. (ii).

(ii)  $[_{CP} \text{Comp} \{_{\text{SCRAMBLING DOMAIN}} A^1 + B^2 + C^3\} [_{VP} [v^3, [v^2, [v^1]]] \text{AUX}]$

- Note that the verbal heads themselves are placed in German in a rigid order, so that the scrambling domain is smaller than the complement clause:

# Problems and solutions

- A reasonable linguistic interpretation of unbounded scrambling in (ii) is only possible under movement analysis: otherwise the question how an element of an already ordered subtree shows up in a higher clause remains unexplained.
- I am adopting movement analysis for all theoretically possible types of scrambling.
- Under movement analysis, the scrambling type (local vs unbounded) is established in the **end positions** scrambled elements assume after the movement has taken place, not in their **initial positions** before the reordering.

# Short vs Long-Distance Scrambling

- In generative linguistics Scrambling is frequently understood as a characteristic of the initial domains.
- [Baylin 2004] sorts out ‘short’ scrambling when an element moves to a target position in the same clause, and ‘long-distance scrambling’ when an element is extracted (raised) into a higher clause. This distinction makes sense only if initial positions of the moved sentence material are relevant:
- extraction won’t entail scrambling in the final domain if the moved element **takes just one position in the higher clause.**
- The term ‘scrambling’ remains ambiguous but one may check which theoretically possible combinations of local vs unbounded scrambling & short vs long-distance scrambling are attested.
- In the standard case, under local scrambling, where the scrambled elements remain in the same clause, the initial and the final movement domains match or coincide.

# (Pan)-Slavic Scrambling

*Do not let us see Slavic Scrambling, meaningless and ruthless.*

- Slavic languages are known for a wide variety of movement patterns [КОВТУНОВА 1976], [Kosta 2006], [Baylin 2004], [ЦИММЕРЛИНГ 2008], [Franks 2009].
- Most combinations of scrambling types are available for sentence categories represented by non-clitic words, while the number of scrambling types available for clitics is more reduced.
- Unless the opposite is explicitly stated, the scrambling types attested for non-clitic words are treated to be Pan-Slavic.
- The general prediction is that other Slavic languages likely have well-formed sentences within the same scrambling type but no prediction that an exact equivalent of a well-formed sentence with scrambling will be equally well-formed in other Slavic languages is made.

# Scrambling of non-clitic elements

	<b>A.Local Scrambling</b>	<b>B. Unbounded scrambling</b>
1.Short scrambling	+	(+)
2.Long Distance Scrambling	+	+

# Local Short Scrambling (1)

## A1. Short & Local Scrambling.

- The moved element is not extracted to a higher clause, no unprojective crossing of constituents arises:

a. Профессор Иванов посетил нашу лабораторию в июне  
(S+V+O+Adv<sub>Temp</sub>)

Professor<sub>Nom.Sg.M.</sub> Ivanov<sub>Nom.Sg.M.</sub> visit<sub>3Sg.M.Pst.</sub> our<sub>Acc.Sg.F.</sub> laboratory<sub>Acc.Sg.F.</sub>  
in june<sub>Loc.Sg.</sub>

“Professor I. visited our laboratory in June”

b. ⇒ [Нашу лабораторию]<sub>i</sub> профессор Иванов посетил t<sub>i</sub> в  
июне (O+V+S+Adv<sub>Temp</sub>).

our<sub>Acc.Sg.F.</sub> laboratory<sub>Acc.Sg.F.</sub> visit<sub>3Sg.M.Pst.</sub> Professor<sub>Nom.Sg.M.</sub> Ivanov<sub>Nom.Sg.M.</sub>  
in june<sub>Loc.Sg.</sub>

# Local Short Scrambling (2)

(2) a. ... že Maria profesora<sub>i</sub> [v jeho<sub>i</sub> bytě] už několikrát navštívila.

That Maria<sub>Nom.Sg.F.</sub> professor<sub>AccSg.M.</sub> in his<sub>Gen.Sg.M.</sub> flat<sub>Loc.Sg.</sub> already several.time  
visit<sub>3Sg.F.Pst.</sub>

«...that Mary has already several times visited the professor<sub>i</sub> [in his<sub>i</sub> flat] »

b. ⇒ ... že [v jeho<sub>i</sub> bytě] Maria profesora<sub>i</sub> t<sub>i</sub> už několikrát navštívila.

That in his<sub>Gen.Sg.M.</sub> flat<sub>Loc.Sg.</sub> Maria<sub>Nom.Sg.F.</sub> professor<sub>AccSg.M.</sub> already several.time  
visit<sub>3Sg.F.Pst.</sub>

c. ⇒ **ЧЕШ.** že Maria [v jeho<sub>i</sub> bytě] profesora<sub>i</sub> t<sub>i</sub> už několikrát navštívila.

That Maria<sub>Nom.Sg.F.</sub> in his<sub>Gen.Sg.M.</sub> flat<sub>Loc.Sg.</sub> professor<sub>AccSg.M.</sub> already several.time  
visit<sub>3Sg.F.Pst.</sub>

“the same”.

Czech examples in (2) are from [Kosta 2006].

# Long-Distance & Local Scrambling

- The scrambling condition is found in the initial domain but not in the final domain. The extracted element has just one target position in the higher domain.
- Cf. a Bulgarian example with extraction out an NP containing an embedded relative clause:

(4) a. Bulg. Ще=бъдат [две тоалетните, [като всеки от състезателите ще=може да ползва [която пожелае]].

Fut.Pcl. be<sub>3Pl.Fut</sub> two toilet<sub>Nom.Pl.Def.</sub> which any from sportsman<sub>3Pl.Def.</sub> Fut.Pcl can<sub>3Sg.Pres.</sub>  
Comp use<sub>3Sg.Pres.</sub> who want<sub>3Sg.Pres.</sub>

“There will be two toilet rooms [which can be used by any of the sportsmen [who wants]]”.

b. ⇒ [[Тоалетните]<sub>i</sub> ще бъдат [две t<sub>i</sub>, като всеки от състезателите ще=може да ползва [която пожелае]]].

toilet<sub>Nom.Pl.Def.</sub> Fut.Pcl. be<sub>3Pl.Fut</sub> two which any from sportsman<sub>3Pl.Def.</sub> Fut.Pcl can<sub>3Sg.Pres.</sub>  
Comp use<sub>3Sg.Pres.</sub> who want<sub>3Sg.Pr</sub>

# Long-Distance & Unbounded Scrambling

- Long-distance unbounded scrambling is typically triggered by non-projective embedding of a constituent or its element into a higher clause.
- Let  $A^\circ B^\circ C^\circ D^\circ E$  be the basic word order,  $A^\circ B^\circ C^\circ D^\circ$  be lexical heads and each next head be a dependent of the preceding one. It gives a projective structure (5), where blocks DE, CDE, BCDE, ABCDE are embedded constituents.
- (5)  $[A^\circ [B^\circ [C^\circ [D^\circ E]]]]$ .
- (5') Rus. *Арбитры<sup>1</sup> не имели права<sup>1</sup> [IP фиксировать<sup>2</sup> [победу<sup>2</sup> «Триумфа»]]*.
- Referee<sub>Nom.Pl.</sub> not have<sub>3Pl.Pst.</sub> right<sub>Gen.Sg.</sub> fix<sub>Inf</sub> win<sub>Acc.Sg.</sub> 'Triumph'<sub>Gen.Sg.</sub>
- 'The referees<sup>1</sup> had no right<sup>1</sup> to fix<sup>2</sup> the win<sup>2</sup> of 'Triumph'.

Moving the blocks DE, CDE and embedding the heads  $A^\circ, B^\circ$  into lower constituents one can get orders like  $[CDE]_i A^\circ B^\circ t_i, [[DE]_j C^\circ t_j]_i A^\circ B^\circ t_i, [[DE]_j \dots A^\circ_k \dots C^\circ t_j]_i t_k B^\circ t_i, \dots A^\circ_k \dots [[DE]_j C^\circ t_j]_i t_k B^\circ t_i$ , where  $t_{i,j,k}$  – traces of the moved heads or blocks.

# Long-Distance Unbounded Scrambling in Russian

	Pattern	Illustration
Basic word order	$[A^\circ [B^\circ [C^\circ [D^\circ E ]]]]$	(6a) рус. <i>Арбитры<sup>1</sup> не имели права<sup>1</sup> [IP фиксировать<sup>2</sup> [победу<sup>2</sup> «Триумфа»]].</i>
Derived orders	$[CDE]_i A^\circ B^\circ t_i,$	(6b) $\Rightarrow$ [IP Фиксировать победу «Триумфа»] <sub>i</sub> арбитры не имели права <sub>t<sub>i</sub></sub> .
	$[[DE]_j C^\circ t_j]_i A^\circ B^\circ t_i,$	(6c) $\Rightarrow$ [Победу «Триумфа»] <sub>j</sub> [IP фиксировать <sub>t<sub>j</sub></sub> ] <sub>i</sub> арбитры не имели права <sub>t<sub>i</sub></sub> .
	$[[DE]_j \dots A^\circ_k \dots C^\circ t_j]_i t_k B^\circ t_i$	(6d) $\Rightarrow$ [Победу «Триумфа»] <sub>j</sub> арбитры <sub>k</sub> [IP фиксировать <sub>t<sub>j</sub></sub> ] <sub>i</sub> <sub>t<sub>k</sub></sub> не имели права <sub>t<sub>i</sub></sub> .
	$\dots A^\circ_k \dots [DE]_j C^\circ t_j]_i t_k B^\circ t_i$	(6e) $\Rightarrow$ Арбитры <sub>k</sub> [победу «Триумфа»] <sub>j</sub> [IP фиксировать <sub>t<sub>j</sub></sub> ] <sub>i</sub> <sub>t<sub>k</sub></sub> не имели права <sub>t<sub>i</sub></sub> .

# Short & Unbounded Scrambling

- If the initial domain does not contain embedded structures, Short Unbounded Argument Scrambling may only arise due non-projective crossing of groups not involved in an immediate dominance relation.
- (7)  $[_x AB] \dots [_y CD] \Rightarrow [_x A [_y C \dots B] \dots _y D]$ .
- Sentences with disjoint constituents and embedding are slightly more acceptable than examples with non-projective crossing..
- (8) a.  $[_x \text{Жители}^\circ \text{столицы}] [_y \text{любят}^\circ [_y \text{пивную продукцию}^\circ \text{Клина}]]$ .
- Resident<sub>Nom.Pl.</sub> capital<sub>Gen.Sg.</sub> love beer<sub>AdjAcc.Sg.F.</sub> production<sub>Acc.Sg.F.</sub> Klin<sub>GenSg.</sub>
- “The residents of (our) capital love the beer production <from the city of> Klin”
- b.  $??[_y \text{Клина}]_i [_x \text{жители}^\circ \text{столицы}] [_y \text{любят}^\circ [_y \text{пивную продукцию}^\circ t_i]]$ .
- Klin<sub>GenSg.</sub> resident<sub>Nom.Pl.</sub> capital<sub>Gen.Sg.</sub> love beer<sub>AdjAcc.Sg.F.</sub> production<sub>Acc.Sg.F.</sub>
- c.  $*[_y \text{Клина}]_i [_x \text{столицы}]_j [_y \text{любят}^\circ [_y \text{пивную продукцию}^\circ t_i]] [_x \text{жители}^\circ t_j]$ .
- Klin<sub>GenSg.</sub> capital<sub>Gen.Sg.</sub> love beer<sub>AdjAcc.Sg.F.</sub> production<sub>Acc.Sg.F.</sub> resident<sub>Nom.Pl.</sub>

# Long-Distance Short Scrambling (2)

- If one cancels the requirement that the scrambled elements must represent one and the same sentence category or the requirement that they must be hierarchically independent, Short Unbounded Scrambling may be found in other constructions, especially in constructions with second-position clitics splitting the initial constituent, as in (9a-b).
- (9) a. Old. Rus. а и-Суждальской {<sub>Scrambling</sub> =*ти* (1) **земле** (2)} Новагорода не рядити (ГВНП, №. 1, 1264 г.).
- And from Suzhdal<sub>Adj.Gen.Sg.F.</sub> you<sub>2Dat.Sg.</sub> land<sub>Gen.Sg.F.</sub> Novgoroda<sub>Gen.Sg.M</sub> not rule<sub>Inf</sub>
- “And from Suzdal’s **land** (2), you (1) should not rule Novgorod”.
- b. а и-земле (1) {<sub>Scrambling</sub> =*ти* (2) суждальской (2)} Новагорода не рядити}.
- And from **land**<sub>Gen.Sg.F.</sub> you<sub>2Dat.Sg.</sub> Suzhdal<sub>Adj.Gen.Sg.F.</sub> Novgoroda<sub>Gen.Sg.M</sub> not rule<sub>Inf</sub>
- c.\*а [и-Суждальской земле] =*ти*.

# Clusterizing clitics and Scrambling

- Cross-linguistically, clusterization of clitics always takes place in some canonical syntactic position and may be blocked in other positions.
- Clusterizing clitics are a subclass of fixed position clitics. At the same time, clusterizing clitics move, the whole clitic cluster may shift its location in a clause or be split in certain contexts.
- All Slavic languages except for Modern Russian, Modern Ukrainian and Modern Belorussian have clusterizing clitics [Dimitrova-Vulchanova 1999].
- No Slavic language has phrase-level clusterizing clitics (in NPs or other non-predicative phrases), cf. [Čavar, Wilder 1999], [Циммерлинг 2011].
- In most cases Slavic languages put clitic clusters/ single clusterizing clitics after the first spelled-out constituent / first phonetic word or after the complementizer: main clauses vs subordinate clauses, finite clauses vs non-finite clause apply the same set of clusterizing clitics. These facts lead to the following generalization:
  - **(iii) Slavic clusterizing clitics are clause-level second-position clitics (2P clitics).**

# Possessor Raising in Bulgarian

- [Schürcks & Wunderlich 2004] argue that Bulgarian allows Raising of possessive datives out of DPs, while [Cinque & Krapova 2011] argue against a PR.
- The only candidates for the role of a clitic cluster in DPs are combinations of the definite article and the possessive pronoun, cf. Bulg. *ужасни-те* (1) *си* (2) *грешки* lit. awful<sub>pl.</sub>-Det.Pl. (1) Refl.Poss (2) mistake<sub>pl.</sub> (3) ‘one’s awful mistakes’ ~ *грешки-те* (1) *си* (2) *ужасни* (3) mistake<sub>pl.</sub> Det.Pl. (1) Refl.Poss (2) awful<sub>pl.</sub> (3) ‘the same’.
- The enclitic definite article is attached to the first stressed word of DP, while the possessive pronoun is cliticized to the first element containing a definiteness morpheme. Hence, the Bulg. definite article is merged pre-syntactically on the morphological level, while Bulg. dative possessives are merged in syntax. Consequently, no clitic cluster arises:  $[_{DP} [\text{ужасни-те (1)}] = \text{си (2)} \text{°грешки}]$  ~  $[_{DP} [\text{°грешки-те (1)}] = \text{си (2)} \text{ужасни}]$ .

# 2P cliticization

- Systems with clusterizing clitics into systems with clause-level 2P clitics vs systems with clause-level Verb-Adjacent clitics, cf. [Franks & King 2000], [Franks 2009].
- Bulgarian word retains a constraint on the number of groups preceding pronominal and auxiliary clitics. Cf. examples with a compound verbal form consisting of an *I*-participle and a BE-auxiliary in the past tense in (10): the compound form takes one position as shown in (10a) but a combination of a compound form with another constituent before the clitic *Я* is excluded in whatever order as shown in (10b) and (10c):
- (10) a. Bulg. #<sub>[VP]</sub> Купил бих]=я книгата.
- [bought<sub>PerfPart.Sg.M.</sub> Be.Aux<sub>1Sg.Cond.</sub>] she<sub>Acc.Sg.</sub> book-the<sub>Acc.Sg.F.Def.</sub>
- ‘I would rather buy this book’, lit. ‘[bought would<sub>1Sg.</sub>] = *it* the book’,
- b. \*<sub>[DP]</sub> Книгата] [<sub>VP</sub> купил бих]=я,
- book-the<sub>Acc.Sg.F.Def.</sub> [bought<sub>PerfPart.Sg.M.</sub> Be.Aux<sub>1Sg.Cond.</sub>] she<sub>Acc.Sg.</sub>
- c. \*<sub>[VP]</sub> купил бих] [<sub>DP</sub> книгата]=я.
- The principle of 2P placement is not violated in Bulgarian. Bulgarian clusterizing pronouns .

# Clitic Clusters and Scrambling

- Clitic clusters are contact strings of clitics excluding permutation of elements and insertion of non-clitic words [Зализняк 1993: 289].
- If  $a^\circ$ ,  $b^\circ$  and  $c^\circ$  are clusterizing clitics and the fixed order of clitics is [ $_{\text{Clitic Phrase}} a^\circ$ ,  $b^\circ$ ,  $c^\circ$ ], no other order like  $*[_{\text{Clitic Phrase}} b^\circ, a^\circ, t_i c^\circ]$ ,  $*[_{\text{Clitic Phrase}} c^\circ, a^\circ, b^\circ t_i]$  should be possible in the canonical position of clusterisation.
- Clusterizing clitics do not have short scrambling in sentences without cluster splitting.
- With cluster splitting orders as  $\dots X^0 = [_{\text{Clitic Phrase}} c^\circ] \dots Y^0 [_{\text{Clitic Phrase}} a^\circ, b^\circ] \dots$  where the clitic  $c^\circ$  is placed earlier than clitics  $a^\circ$ ,  $b^\circ$  preceding it in the cluster may arise, if parts of the cluster are attached to different sentence categories.
- Such cases are difficult to recognize as scrambling, since the clitic(s) leaving the clusterization position (or not reaching it) almost invariably end up in a position adjacent to a verbal head [Циммерлинг 2011].

# Old Novgorod Clitic Template

A. Particles					B. Pronouns		C. Present Tense Indicative Be- auxiliary
1	2	3	4	5	6	7	8 = AUX1
Affirm	Quest	Case	Evid	Opt	Dative 1-2 p. (incl. Dat.Refl)	Accusative 1-3 p. (incl. Acc.Refl)	1-2 Sg.Du.Pl. p.
<b>Že</b>	<b>Li</b>	<b>Bo</b>	<b>Ti</b>	<b>B y</b>	<b>Mi, ti, si, ny, vy, na, vā</b>	<b>M'a, t'a, s'a, ny, vy, na, vā, i, ju, je, ě, ja</b>	<b>Jesm', jesi, jesme, jeste, jesvē, jestā</b>

# Clitic Scrambling (1)

- Clusterizing clitics that lack options for short scrambling do allow extraction into a higher clause: the parameter responsible for extraction is known as Clitic Climbing.
- Most though not all Slavic languages have Clitic Climbing of argument and reflexive pronouns out of embedded non-finite clauses. Clitic Templates generating clitic clusters have slots for the clitics raised from embedded clauses [Franks & King 2000], [Kosta, Zimmerling 2011].
- Clitic Climbing is a prerequisite of Clitic Scrambling but not its sufficient condition.

# Clitic Scrambling (2)

- (a) If the extraction is obligatory, no scrambling relation arises.
- (b) If the extraction is optional and the extracted clitic has one and only one available target position in a higher clause, Clitic Climbing leads to a condition resembling or identical with Local Unbounded Scrambling.
- (c) If the extraction is optional and the extracted clitic has multiple (more than one) target positions in a higher clause, Long-Distance Unbounded Scrambling arises.

# Scrambling of clusterizing clitics in Slavic

	<b>A. Local Scrambling</b>	<b>B. Unbounded Scrambling</b>
1.Short Scrambling	-	-
2.Long-Distance Scrambling	Clitic Climbing (+)	Clitic Scrambling +

# Clitic Climbing and Optional Movement

- (12) [TP... [CliticP a<sup>1</sup> b<sup>1</sup> c<sub>i</sub><sup>2</sup> d<sup>1</sup> ] v<sup>1°</sup>] [IP v<sup>2°</sup> t<sub>i</sub> ] .
- (13) Rusin. *же=бу<sup>1</sup>=**=ше<sup>2</sup>=му<sup>2</sup>** }<sub>i</sub> и я пошол<sup>o1</sup> [IP поклоніц<sup>o2</sup> t<sub>i</sub>]. (Mat. 2.8).*

That Cond.Pcl Refl.Pcl. him<sub>3Dat.Sg.M.</sub> and I<sub>1Nom.Sg.</sub> go<sub>1Sg.Pst.</sub> bow<sub>Inf.</sub>

Lit. 'that=*Pcl*<sup>1</sup>=**=REFL<sup>2</sup>=to-him<sup>2</sup>** } and I went<sup>o1</sup> to bow.low.<sup>o</sup>

- (14) a. Rusin. \**же=бу<sub>i</sub> и я пошол поклоніц=ше=му.*
- b. Rusin. \**же=бу и я пошол=ше=му поклоніц.*

Slavic idioms with optional Clitic Climbing exist.

- (15) a. Old Novg. *а холоп и роба не оучноу<sup>T</sup> = ся<sub>i</sub> [IP тяга<sup>T</sup> t<sub>i</sub>]* (a XV century copy from a 1396 letter).
- And servant<sub>NomSg.M.</sub> and bondmaid<sub>Nom.Sg.F.</sub> not start<sub>3Pl.Pres.</sub> Refl. litigate<sub>Inf.</sub>  
«And (if) a servant and a bondmaid do not start litigating ».
- b. *а холоп и роба не оучноут [IP тягать=ся].*

# Long-Distance Unbounded Clitic Scrambling

- A combination of two non-trivial parametric settings — 1) Clitic Climbing should be optional, not obligatory; 2) clusterizing clitics extracted from an embedded clause should have more than one target position in a higher domain.
- (16) a. Slov. [<sub>S</sub> { SCRAMBLING On= $jo^2$  <sub>i</sub> = $je^1$  hotel<sup>1°</sup> [<sub>IP</sub> nehati<sup>°</sup> [<sub>IP</sub> hoteti<sup>°</sup> [<sub>IP</sub> videvati<sup>°</sup> t<sub>i</sub> vsak dan]]]} ].
- He<sub>3Nom.Sg.M</sub> her<sub>3Acc.Sg.F</sub> BE<sub>Aux.3Sg.Pres</sub> want<sub>3Sg.Pst</sub> not.want<sub>Inf</sub> want<sub>Inf</sub> see<sub>Inf</sub> every day
- “He wanted to stop wanting to see her every day”.
- Lit. ‘he=**her**=**BE.AUX** wanted to stop to want to see her every day’.

# Conclusions

- Scrambling in pairs of sentence categories (x, y) may be effectively triggered by optional movement of one of these categories. Two pairs of parameters – local/unbounded scrambling and short/long-distance scrambling give rise to four scrambling types all of which are attested in Slavic languages.
- Local vs Unbounded Scrambling are opposed by the final movement domains, Short vs Long-Distance Scrambling – by the initial movement domains. The combination of Short and Long-Distance Scrambling is rare but theoretically not excluded since the final movement domain with Long-Distance Scrambling may be smaller than a single clause.
- Clusterizing clitics have more reduced scrambling possibilities than non-clitic sentence categories. They do not have Short Scrambling but may under certain conditions have Long-Distance Scrambling. The movement domains for elements of this class must be checked in positions where the raised clitics clusterize with other clitics, not in positions where they are base-generated.

# Acknowledgments

- This paper was supported by the project RGNF 11-04-00282a “Типология морфосинтаксических параметров” (“Typology of morphosyntactic parameters”).
- I am grateful to the anonymous reviewer of ‘Dialogue 2011’ for the criticism and valuable suggestions. The responsibility for the final formulations is my own.

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