Variability of languages in time and space

Linguistic Typology - Morphology

Anja Nedoluzhko
### Serbian – Russian accents and tones

<table>
<thead>
<tr>
<th>Serbian</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>говорити</td>
<td>говорить [govoriti] ‘speak’</td>
</tr>
<tr>
<td>мухоловка</td>
<td>мухоловка [mucholovka] ‘flytrap’</td>
</tr>
<tr>
<td>мёд</td>
<td>мёд [mjad] ‘honey’</td>
</tr>
<tr>
<td>брод</td>
<td>брод [brod] ‘ford’</td>
</tr>
<tr>
<td>брода</td>
<td>брода [broda] ‘ford’, GSG</td>
</tr>
<tr>
<td>брода</td>
<td>борода [boroda] ‘beard’</td>
</tr>
<tr>
<td>брвь</td>
<td>боров [borov] ‘hog’</td>
</tr>
<tr>
<td>красота</td>
<td>красота [krasota] ‘beauty’</td>
</tr>
<tr>
<td>блато</td>
<td>болото [boloto] ‘bog’</td>
</tr>
<tr>
<td>злато</td>
<td>золото [zoloto] ‘gold’</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Serbian</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>бесповоротно</td>
<td>бесповоротно [bespovorotno] ‘irreversibly’</td>
</tr>
<tr>
<td>мрзь</td>
<td>мороз [moroz] ‘frost’</td>
</tr>
<tr>
<td>кроткй</td>
<td>кроткий [krotoy] ‘gentle’</td>
</tr>
<tr>
<td>седобородый</td>
<td>седобородый [sedoborodyj] ‘grey-bearded’</td>
</tr>
<tr>
<td>беумный</td>
<td>беумный [beumnyj] ‘mad’</td>
</tr>
<tr>
<td>волчица</td>
<td>волчица [volčica] ‘she-wolf’</td>
</tr>
<tr>
<td>блохa</td>
<td>блохa [blocha] ‘flea’</td>
</tr>
<tr>
<td>тлстй</td>
<td>тлстй [tolstij] ‘fat’</td>
</tr>
<tr>
<td>волокно</td>
<td>волокно [volokno] ‘fibre’</td>
</tr>
<tr>
<td>слбй</td>
<td>слбй [slabyj] ‘weak’</td>
</tr>
</tbody>
</table>

### Translation Exercises

1. **Translate from Russian into Serbian:**

<table>
<thead>
<tr>
<th>Russian</th>
<th>Serbian</th>
</tr>
</thead>
<tbody>
<tr>
<td>город [gorod] ‘town’</td>
<td>город [gorod] ‘town’</td>
</tr>
<tr>
<td>голова [golova] ‘head’</td>
<td>голова [golova] ‘head’</td>
</tr>
<tr>
<td>колода [koloda] ‘block’</td>
<td>колода [koloda] ‘block’</td>
</tr>
<tr>
<td>безголовый [bezgolovyj] ‘headless’</td>
<td>безголовый [bezgolovyj] ‘headless’</td>
</tr>
<tr>
<td>глотать [glotat’] ‘swallow’</td>
<td>глотать [glotat’] ‘swallow’</td>
</tr>
<tr>
<td>сестра [sestra] ‘sister’</td>
<td>сестра [sestra] ‘sister’</td>
</tr>
</tbody>
</table>

2. **Translate from Serbian into Russian:**

<table>
<thead>
<tr>
<th>Serbian</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>вр’aна</td>
<td>вр’aна</td>
</tr>
<tr>
<td>вёдро</td>
<td>вёдро</td>
</tr>
<tr>
<td>за’мка</td>
<td>за’мка</td>
</tr>
<tr>
<td>обрезати</td>
<td>обрезати</td>
</tr>
<tr>
<td>нёбо</td>
<td>нёбо</td>
</tr>
<tr>
<td>вёдро</td>
<td>вёдро</td>
</tr>
<tr>
<td>носки</td>
<td>носки</td>
</tr>
</tbody>
</table>
Syllable Structure

• **Syllable** - well-recognized unit in linguistic analysis which explains quite well the number of rhythmic units that will be perceived in a word or longer utterance. This number is usually equal to the number of vowels in the utterance.

• Easy concept – if listeners differ in syllabifying particular words, it is generally the case that both possible syllabifications can be permitted.

\[ \text{pastry} = \text{past.ry} \text{ or } \text{pas.try} \]
Canonical syllable pattern

• Languages differ according to which syllable types are permitted, sequencing of segments within syllables

• C - consonant  V - vowel
Simple syllable structure

only CV

(C)V

it is permitted not to have an initial consonant
Distribution in WALS

- Simple syllable structure: 61
- Moderately complex syllable structure: 274
- Complex syllable structure: 151

Total: 486

https://wals.info/feature/12A#2/16.7/153.1
 Moderately complex syllable structure

**(C)V, CVC, CCV**

strict limits on what kinds of combinations are permitted: The second of two consonants is commonly limited to being one of a small set belonging to either “liquids” (r, l) or “glides” ([w] in en. *wet*)

Darai Nepal

the most elaborated syllable permitted is CCVC

/bwak/ ‘(his) father’

the only possible second consonant in a sequence of two is /w/
Distribution in WALS

<table>
<thead>
<tr>
<th>Value</th>
<th>Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple syllable structure</td>
<td>61</td>
</tr>
<tr>
<td>Moderately complex syllable structure</td>
<td>274</td>
</tr>
<tr>
<td>Complex syllable structure</td>
<td>151</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>486</strong></td>
</tr>
</tbody>
</table>

https://wals.info/feature/12A#2/16.7/153.1
Complex syllable structure

- English - (C)(C)(C)V(C)(C)(C)(C) –
  strengths /stɹɛŋkθs/
  texts /tɛksts/
Distribution in WALS

<table>
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<td>151</td>
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<tr>
<td><strong>Total:</strong></td>
<td><strong>486</strong></td>
</tr>
</tbody>
</table>

https://wals.info/feature/12A#2/16.7/153.1
Correlations

• small consonant inventories $\leftrightarrow$ simple syllable structure
• large consonant inventories $\leftrightarrow$ complex syllable structures
Given words in Japanese borrowed from English

redzonansu, oputimisuto, pen, endzin, medo in dz’apan, janki, noto-bukku, supu, n’ujoku-tajmudzu, sekus’on, mota, dokuta, dzigudzagu, tikketto, indakus’on, s’okku, s’oppu,
burokku, baransu, uisuki, majru, ojru, surogan, rajburari, ibuningu, bandaridzumu, intab’u,
pasento, massadzi, ba, suta, atorakus’on, oba-koto, supido, dz’anaridzumu

1. Find their English equivalents.

2. Translate to Japanese:

<table>
<thead>
<tr>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>elevator</td>
<td>？</td>
</tr>
<tr>
<td>seal</td>
<td>？</td>
</tr>
<tr>
<td>yard</td>
<td>？</td>
</tr>
<tr>
<td>bolt</td>
<td>？</td>
</tr>
<tr>
<td>cook</td>
<td>？</td>
</tr>
<tr>
<td>trust</td>
<td>？</td>
</tr>
<tr>
<td>crane</td>
<td>？</td>
</tr>
<tr>
<td>knob</td>
<td>？</td>
</tr>
<tr>
<td>viktor</td>
<td>？</td>
</tr>
<tr>
<td>clerk</td>
<td>？</td>
</tr>
<tr>
<td>lucky</td>
<td>？</td>
</tr>
<tr>
<td>colour</td>
<td>？</td>
</tr>
<tr>
<td>supper</td>
<td>？</td>
</tr>
<tr>
<td>error</td>
<td>？</td>
</tr>
</tbody>
</table>

Note: dz – a single phoneme [dz], like c [ts] in Czech
Typology of grammar

• Classical typology sought a global characterization of the entire language according to a small number of typological characteristics. This holistic approach has proved to be too ambitious, and modern typologists practice partial typology, where specific phenomena or individual grammatical constructions are studied.

• Over the past two decades, linguistic typology has been moving increasingly away from its original goal of classifying languages into ideal types that would be constrained by categorical universals.

• What has been emerging as a new paradigm instead starts from the distribution of structures in the world, asking “what’s where why?”
Typology of grammar

Verbs

• temporal categories
• aspect
• modality
• evidentiality
• causality

• gender
Turkish – Latin – English
verbal grammar

yazmışım  —  I’ve probably written
yazmışsun  —  You<sub>sg</sub> have probably written
yazmış  —  He has probably written
yazmışsunız  —  You<sub>pl</sub> have probably written
yazar  —  (he) writes
yazarlar  —  (they) write

Translate:
*into Turkish:* scribo, They have probably written
*into Latin:* (he) writes, yazarsınız
*into English:* scribitis, yazmışlar

çalışırım  —  laboro
calışır  —  laborat
calışırsın  —  laboras
calışırsınız  —  laborant
calışırsınız  —  laboratis
yazarsın  —  scribis
Epistemic Possibility

<table>
<thead>
<tr>
<th>Value</th>
<th>Representation</th>
</tr>
</thead>
<tbody>
<tr>
<td>The language can express epistemic possibility with verbal constructions</td>
<td>65</td>
</tr>
<tr>
<td>The language cannot express epistemic possibility with verbal constructions, but with affixes on verbs</td>
<td>84</td>
</tr>
<tr>
<td>The language cannot express epistemic possibility with verbal constructions or with affixes on verbs, but with other kinds of markers</td>
<td>91</td>
</tr>
</tbody>
</table>

Total: 240

https://wals.info/feature/75A#2/16.6/148.4
<table>
<thead>
<tr>
<th>Turkish</th>
<th>Czech</th>
</tr>
</thead>
<tbody>
<tr>
<td>yazmak</td>
<td>psát</td>
</tr>
<tr>
<td>yazılmak</td>
<td>psát se („Prahy“ se piše s tvrdým y)</td>
</tr>
<tr>
<td>burmak</td>
<td>točit</td>
</tr>
<tr>
<td>burulmak</td>
<td>točit se (nít se točí kolem týče)</td>
</tr>
<tr>
<td>giyimek</td>
<td>oblíkat</td>
</tr>
<tr>
<td>giyinmek</td>
<td>oblíkat se (kluk se oblíká)</td>
</tr>
<tr>
<td>sevişmek</td>
<td>milovat (Milují se)</td>
</tr>
<tr>
<td>görünmek</td>
<td>být vidět (Dům je vidět z dálky)</td>
</tr>
<tr>
<td>görüşmek</td>
<td>vidět se (Vidíme se často)</td>
</tr>
<tr>
<td>öpüşmek</td>
<td>líbat se</td>
</tr>
<tr>
<td>doğmak</td>
<td>rodit se</td>
</tr>
<tr>
<td>doctrumak</td>
<td>rodit</td>
</tr>
<tr>
<td>batmak</td>
<td>topit se</td>
</tr>
<tr>
<td>pişmek</td>
<td>vařit se</td>
</tr>
<tr>
<td>pişirmek</td>
<td>vařit</td>
</tr>
<tr>
<td>geçmek</td>
<td>přecházet</td>
</tr>
<tr>
<td>düşmek</td>
<td>padat</td>
</tr>
<tr>
<td>tutmak</td>
<td>držet</td>
</tr>
</tbody>
</table>

Přeložte do čj:

<table>
<thead>
<tr>
<th>Turkish</th>
<th>Czech</th>
</tr>
</thead>
<tbody>
<tr>
<td>tutunmak</td>
<td>tutulmak</td>
</tr>
<tr>
<td>düşürmek</td>
<td>geçirmek</td>
</tr>
<tr>
<td>öpmek</td>
<td>batırılmak</td>
</tr>
<tr>
<td>görülmek</td>
<td>görmek</td>
</tr>
</tbody>
</table>
Evidentiality

• In Turkish: a distinction is made between witnessed past (the morpheme \(-di\) ) and unwitnessed (\(-miş\) )

(8) Turkish

a. Ahmet \(gel-di\).
   
   Ahmet \(come-PST.DIR.EVD\)
   
   ‘Ahmet came.’ (witnessed by the speaker)

b. Ahmet \(gel-miş\)
   
   Ahmet \(come-PST.INDIR.EVD\)
   
   ‘Ahmet came.’ (unwitnessed by the speaker)

• evidential-type information through modal verbs
  
in germanic languages - Dutch: \(zouden\), Danish: \(skulle\), German: \(sollen\)

• Maps in WALS https://wals.info/feature/78A#2/16.6/149.8
Typology of grammar

Nouns

– agreement classes
– case
– ezāfe, head-marking
– number
– determination
– possessivity
Nouns → Cases → Syntactic

• Subject (≈ ACTor in PDT)
• Object (≈ PATiens in PDT)
• indirect Object, oblique (≈ ADDRessee in PDT)
• other (≈ORIG, EFF in PDT, Instrument)
Semantic Roles
(Semantic cases, Thematic roles)

• Grammatical relations (subject, object, oblique...) are morphosyntactic, whereas semantic roles (agent, patient, instrument...) are conceptual notions.

• Semantic roles represent the dependency type

• Ch. Fillmore (1968, 1971)
Nouns → Cases → Semantic

Example:
If, in some real or imagined situation, someone named John purposely hits someone named Bill, then John is the AGENT and Bill is the PATIENT of the hitting event. Therefore, the semantic role of Bill is the same (patient) in both of the following sentences:

• John hit Bill.
• Bill was hit by John.

In both of the above sentences, John has the semantic role of agent.
**Semantic Roles**

- Semantic roles do not correspond directly to grammatical relations.
- Notice what varying semantic roles a subject can play:

<table>
<thead>
<tr>
<th>Sentence</th>
<th>Grammatical relation</th>
<th>Semantic role</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Bob</em> opened the door with a key.</td>
<td><em>Bob</em> = SUBJECT</td>
<td><em>Bob</em> = AGENT</td>
</tr>
<tr>
<td><em>The key</em> opened the door.</td>
<td><em>The key</em> = SUBJECT</td>
<td><em>The key</em> = INSTRUMENT</td>
</tr>
<tr>
<td><em>The door</em> opened.</td>
<td><em>The door</em> = SUBJECT</td>
<td><em>The door</em> = PATIENT</td>
</tr>
</tbody>
</table>
Semantic Roles

**Agent**: The ‘doer’ or instigator of the action denoted by the predicate.

**Patient**: The ‘undergoer’ of the action or event denoted by the predicate.

**Experiencer**: The living entity that experiences the action or event denoted by the predicate.

**Goal**: The location or entity in the direction of which something moves.

**Benefactive**: The entity that benefits from the action or event denoted by the predicate.

**Causer**: The referent which instigates an event rather than actually doing it.

**Source**: The location or entity from which something moves

**Instrument**: The medium by which the action or event denoted by the predicate is carried out.

**Locative**: The specification of the place where the action or event denoted by the predicate in situated.

……...
• **AGENS** (zprav. personální původce děje, důležitý rys kontroly děje) – *voják běží, stařec rozdělal oheň, sestra vypráví pohádku* ale ne *vítr rozbil okno*

• **PATIENS** (objekt dějem zasažený) - *Kain zabil Abela, ale také Zeď spadla, kluk spí*

• **PROŽÍVATEL** nebo **EXPERIENCER** (účastník situace, který vnímá informaci) *Janičce se stýská, sestra Tě nepoznává, voják spatřil oheň atd.*

• **STIMUL** (podnět nějaké reakce nebo vjemu) *Martina se bojí psů.*

• **ADRESÁT** (účastník, kterému agens sděluje informaci) *Sestra mi vypráví pohádku.*

• **RECIPIENT** (příjemce něčeho) *Babička dala Zuzce máslový dort.*

• **BENEFICIENT** (účastník, v jehož /ne/prospěch se něco děje) *Pavel objednal Šárce pivo.*

• **INSTRUMENT** (nástroj sloužící k provádění děje) *Šárka přitloukla hřebík kladivem.*

• **LOKUS** (místo) *Náhle jsme se octli v háji.*

• **DIREKCE** (směr) *Lenka přišla do redakce.*
Semantic Roles ➔ Patient

• Also known as: affected, undergoer
• The entity undergoing a change of state or location, or which is possessed, acquired or exchanged, a person who experiences an event, the thing or person that is affected by an event

John hit Bill.
The dog ate the meat.
Mary became sad.
Semantic Roles → Patient

• The entity predicated with a state or location:
The door is open.
John is at home.

• The entity undergoing a change of state or location:
He opened the door.
The door swung open.
He threw the ball across the yard.
The ball rolled off the table.

• The entity which is possessed, acquired, or exchanged:
John has a new book.
John bought a new book.
John gave Mary a new book.
Semantic Roles $\rightarrow$ Recipient

**Recipients** are arguments that receive something (whether good or bad) in a situation.

They gave *the workers* a raise.

I paid *my landlord* the rent.
Benefactive, Recipient, Addressee: Syntactic and Semantic Realization

- languages use cases to distinguish types
- but roles are combined
- Benefactive, Recipient, Addressee: mostly Dative, BUT
  - in Sanskrit Accusative is used for the Addressee
  - Dravidian languages: a special case for **Benefactive**, while Recipient + Addressee + Patient get Accusative
Other examples of Semantic Roles ➔ Causer

Referent which instigates an event rather than actually doing it.

*The rain* destroyed the crops.
Semantics Roles → Comitative

relationship of "accompaniment": "in company with", "together with"

John washed the car with Mary.

Estonian

suffix “-ga”

<table>
<thead>
<tr>
<th>ja</th>
<th>Barber</th>
<th>rüüpa-b</th>
<th>koos</th>
<th>Balthasari-ga</th>
<th>sügava</th>
<th>sõõmu</th>
</tr>
</thead>
<tbody>
<tr>
<td>and</td>
<td>Barber</td>
<td>drink-3.sg</td>
<td>together</td>
<td>Balthasar-COM</td>
<td>deep.GEN</td>
<td>mouthful.GEN</td>
</tr>
</tbody>
</table>

And Barber takes a sip together with Balthasar.

Chukchi

circumfix

<table>
<thead>
<tr>
<th>a'acek</th>
<th>ньтоскычат-гьэ</th>
<th>га-мэлгар-ма</th>
</tr>
</thead>
<tbody>
<tr>
<td>boy</td>
<td>ran.out-PERF</td>
<td>COM.PRED-gun-COM.PRED</td>
</tr>
</tbody>
</table>

The boy ran out with a gun.

Hungarian

suffix “-stul/-stül,”

<table>
<thead>
<tr>
<th>ruhá-stul</th>
<th>és</th>
<th>cipő-stül</th>
<th>feküd-t-em</th>
<th>az</th>
<th>ágy-ban</th>
</tr>
</thead>
<tbody>
<tr>
<td>clothes-COM</td>
<td>and</td>
<td>shoe-COM</td>
<td>lie-PAST-INDEF.1.SG</td>
<td>the</td>
<td>bed-INE</td>
</tr>
</tbody>
</table>

I was lying in bed with my clothes and shoes on.
the lack or absence of the marked noun

*John washed the car without Mary.*

- especially used in Uralic languages

<table>
<thead>
<tr>
<th>Finnish</th>
<th>Hungarian</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>raha</em> &quot;money&quot;</td>
<td><em>pénz</em> &quot;money&quot;</td>
</tr>
<tr>
<td><em>rahatta</em> &quot;without money&quot;</td>
<td><em>pénztelen</em> &quot;without money&quot;</td>
</tr>
<tr>
<td><em>ilman raha</em> &quot;without money&quot;</td>
<td><em>haza</em> &quot;home(land)&quot;</td>
</tr>
<tr>
<td></td>
<td><em>hazátlan</em> &quot;(one) without a homeland&quot;</td>
</tr>
</tbody>
</table>
## Locative Cases

<table>
<thead>
<tr>
<th>basic localization</th>
<th>case</th>
<th>some combinations in Hungarian</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN – inside</td>
<td>LOKATIVE=ESSIV E (where, LOC)</td>
<td>Inessive</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elative</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Illative</td>
</tr>
<tr>
<td>APUD – near</td>
<td></td>
<td>Superessive</td>
</tr>
<tr>
<td>SUB – under</td>
<td>ABLATIVE=ELATIVE (from where, DIR1)</td>
<td>Delative</td>
</tr>
<tr>
<td>SUPER – over</td>
<td></td>
<td>Sublative</td>
</tr>
<tr>
<td>POST – behind</td>
<td></td>
<td>Adessive</td>
</tr>
<tr>
<td>AD – on surface</td>
<td>LATIVE=DIREKTIVE (to where, DIR3)</td>
<td>Ablative</td>
</tr>
<tr>
<td>CIRKUM – around</td>
<td></td>
<td>Allative</td>
</tr>
<tr>
<td>ULTRA – far from</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Given Alutor words and their English translations:

<table>
<thead>
<tr>
<th>Alutor Word</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>kujatenək</td>
<td>near to the glass</td>
</tr>
<tr>
<td>raralqək</td>
<td>on the roof</td>
</tr>
<tr>
<td>rarayinəŋ</td>
<td>into the basement</td>
</tr>
<tr>
<td>anqakin</td>
<td>from the sea</td>
</tr>
<tr>
<td>anqan</td>
<td>the sea</td>
</tr>
<tr>
<td>kənən</td>
<td>the bear</td>
</tr>
<tr>
<td>kənəlqəkin</td>
<td>from the bear</td>
</tr>
<tr>
<td>raralqən</td>
<td>the roof</td>
</tr>
<tr>
<td>kujən</td>
<td>into the glass</td>
</tr>
<tr>
<td>kənək</td>
<td>inside the bear</td>
</tr>
<tr>
<td>anqatenək</td>
<td>on the beach</td>
</tr>
</tbody>
</table>

Translate into Alutor:

the basement, inside the house, the glass, from the roof, to the bear