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Bivalent verb classes in Uralic languages

Ksenia Shagal
(University of Helsinki)

Sergey Say
(Institute for Linguistic Studies, RAS & St. Petersburg State University)

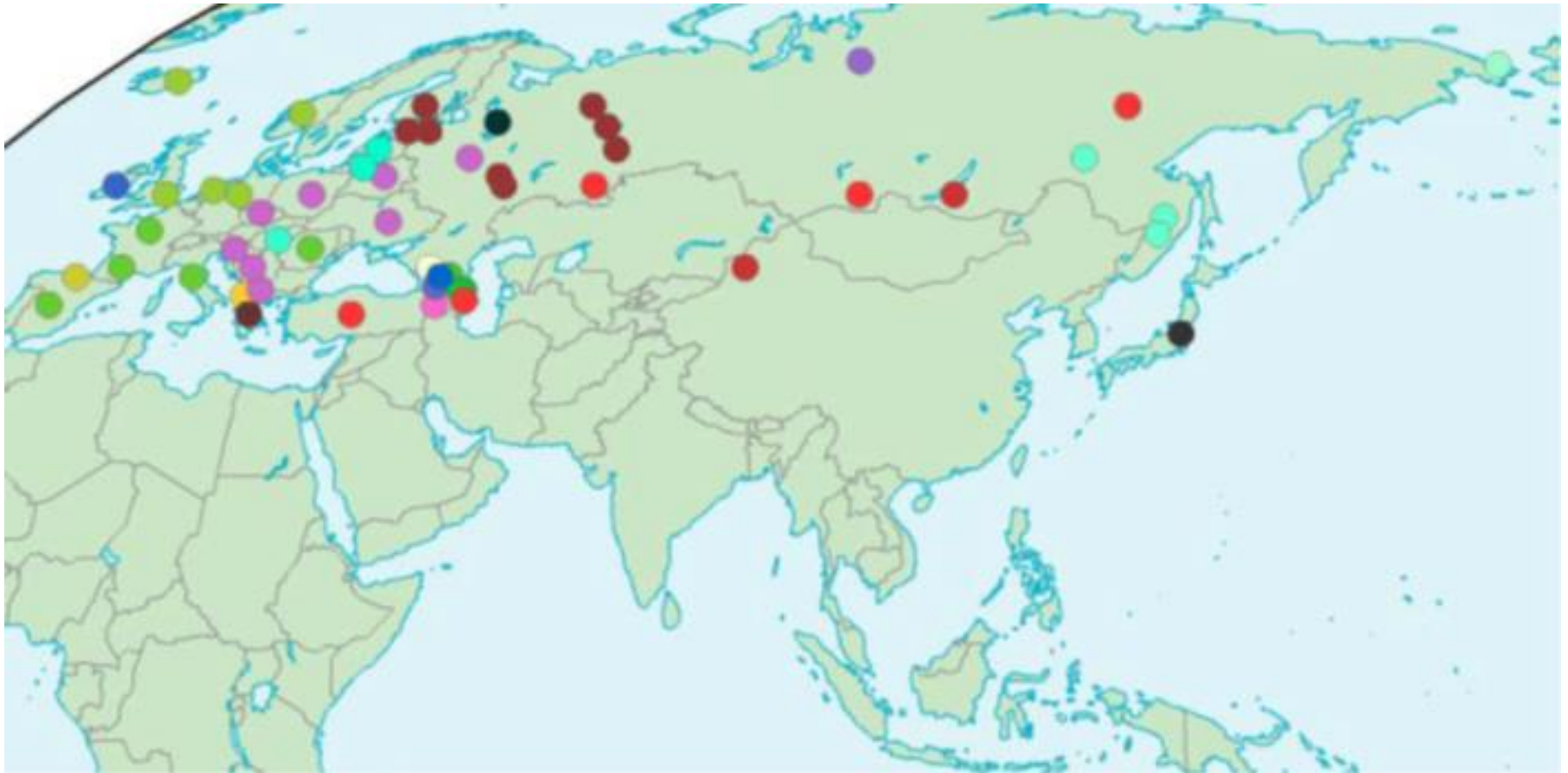
Outline of the talk

- Background and goals
- Data collection and annotation
- Preliminary results and observations
 - Transitivity in Uralic
 - Areal patterns in individual verbs and verb classes
- Further methodological challenges
- Conclusions

Background: a wide-scale project

- Bivalent verbs are especially prone to show deviant valency behaviour [Bickel et al. 2014]
 - 130 verb meanings given in context
 - ‘Peter ate an apple’
 - ‘Peter helped Mary’
 - ‘Peter fell in love with Mary’
 - ‘Peter is different from Michael’
 - 63 languages of Eurasia
 - Primary data (questionnaires filled in by language experts)
- Family-specific study: Uralic languages

Sample (Northern Eurasia)



Language sample: Uralic

- Standard Finnish
- Ingrian Finnish
- Estonian
- Erzya Mordvin
- Moksha Mordvin
- Hill Mari
- Komi-Zyrian
- Komi-Permyak
- Udmurt
- Hungarian
- Enets

Data needed on: North Saami, Khanty, Mansi, Tundra and Forest Nenets

Data collection

- Predicates
 - only predicates that can be expected to be bivalent
 - many predicates that are known to tend to deviate from the transitive prototype
- Translations
 - elicited from native speakers
 - annotated for argument coding devices (flagging and indexing) by language experts
 - variation in argument realization, synonyms etc. are disregarded: one pattern annotated for each predicate

Questionnaire

- 130 sentences

X-NOM + tappaa + Y-GEN

Pekka *tapp-oi*

Pekka.NOM kill-PST.3S

‘P. killed M.’

Mati-n.

Matti-GEN

X-NOM + vaikuttaa + Y-ILL

Ikä *vaikutta-a*

age.NOM influence-PRS.3SG

‘Age influences memory.’

muisti-in.

memory-ILL

Data annotation

- Transitivity
 - one class of verbs is identified as transitive in each language
 - by definition, this is the class which encompasses verbs like 'break' and 'kill' [Haspelmath 2011]
 - morphosyntactic devices employed to signal transitivity vary cross-linguistically, e.g.
 - case-frames
 - differential object marking
 - optional object indexing (Mordvinic, Hungarian)

Data annotation

- Transitivity ratio
 - the number of transitive verbs divided by the total number of verbs, cf. [Haspelmath 2015]
 - e.g. transitivity ratio in Udmurt = 52 (transitive) / 126 (total) = 0.41
- Transitivity profile
 - The set of verbs that are (in)transitive in individual languages
 - e.g. for Udmurt:

'be afraid'	INTR
'throw'	TR
'suffice'	INTR
'resemble'	INTR
etc.	...

Data annotation

- Valency classes
 - Valency classes: two verbs belong to the same valency class iff their two arguments are coded by identical devices respectively

Udmurt

<i>Петя</i>	<i>пуны-лэсь</i>	<i>кышка</i>	
Petja.NOM	dog-ABL	be.afraid.PRS.3SG	'Petja is afraid of the dog.'
<i>Петя</i>	<i>Маша-лэсь</i>	<i>мӧзм-е</i>	
Petja.NOM	Masha-ABL	miss-PRS.3SG	'Petja misses Masha.'
<i>Петя</i>	<i>вал</i>	<i>выл-ысь</i>	<i>васьк-уз</i>
Petja.NOM	horse.NOM	upper.part-ELA	dismount-PST.3SG 'Petja dismounted from the horse.'

- *Кышканы* 'be afraid' and *мӧзмыны* 'miss' belong to the same valency class, while *васькыны* 'dismount' belongs to a different class

Results: transitivity in Uralic

- Transitivity ratio

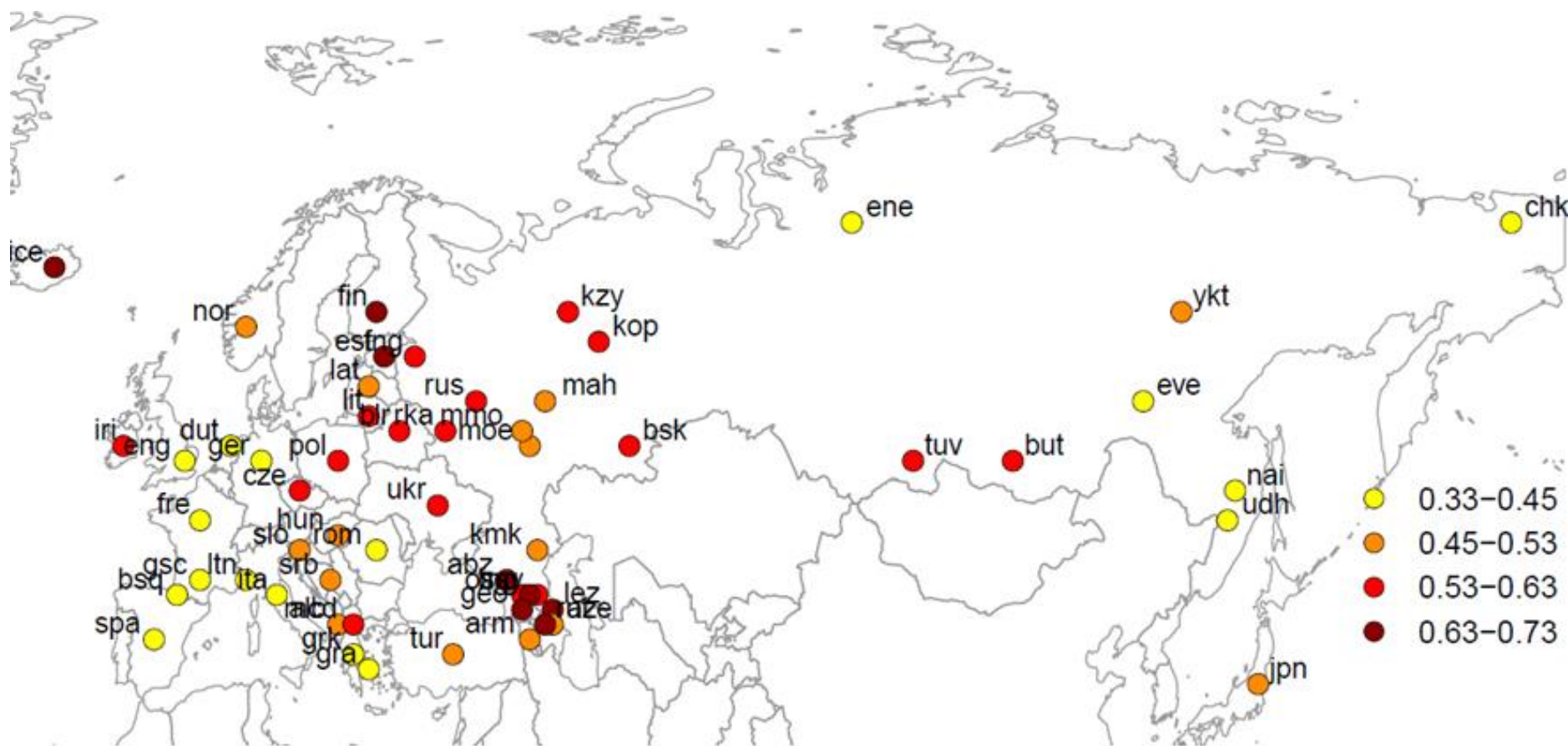
Enets	0.56
Moksha Mordvin	0.50
Hill Mari	0.50
Hungarian	0.49
Erzya Mordvin	0.47
Komi-Permyac	0.46
Komi-Zyrian	0.45
Udmurt	0.41
Ingrian Finnish	0.38
Estonian	0.34
Finnish	0.30

Results: transitivity in Uralic

- The range of transitivity ratios in Uralic languages is very large: 0.30 (Finnish) — 0.56 (Enets), cf.
 - Altaic: 0.46 (Bashkir) — 0.62 (Udihe)
 - comparable to that of Indo-European (more languages and larger extent): 0.36 (Icelandic) — 0.67 (modern Greek)
- Transitivity ratio is patterned geographically [Say 2014]:
 - High levels in Siberia (including Enets) and Standard Average European
 - Low levels in the Caucasus and in Eastern Europe: Baltic Finnic and neighboring languages

Results: transitivity in Uralic

The ratio of intransitive verbs



Results: transitivity in Uralic

- The relative Hamming distance: the ratio of predicates that are transitive in one language and intransitive in the other

	Komi-Permyak	Hungarian
'listen'	TR	TR
'wait'	TR	INTR
'kiss'	TR	TR
'believe'	INTR	INTR
'understand'	TR	INTR
'hit'	INTR	TR
'help'	INTR	INTR

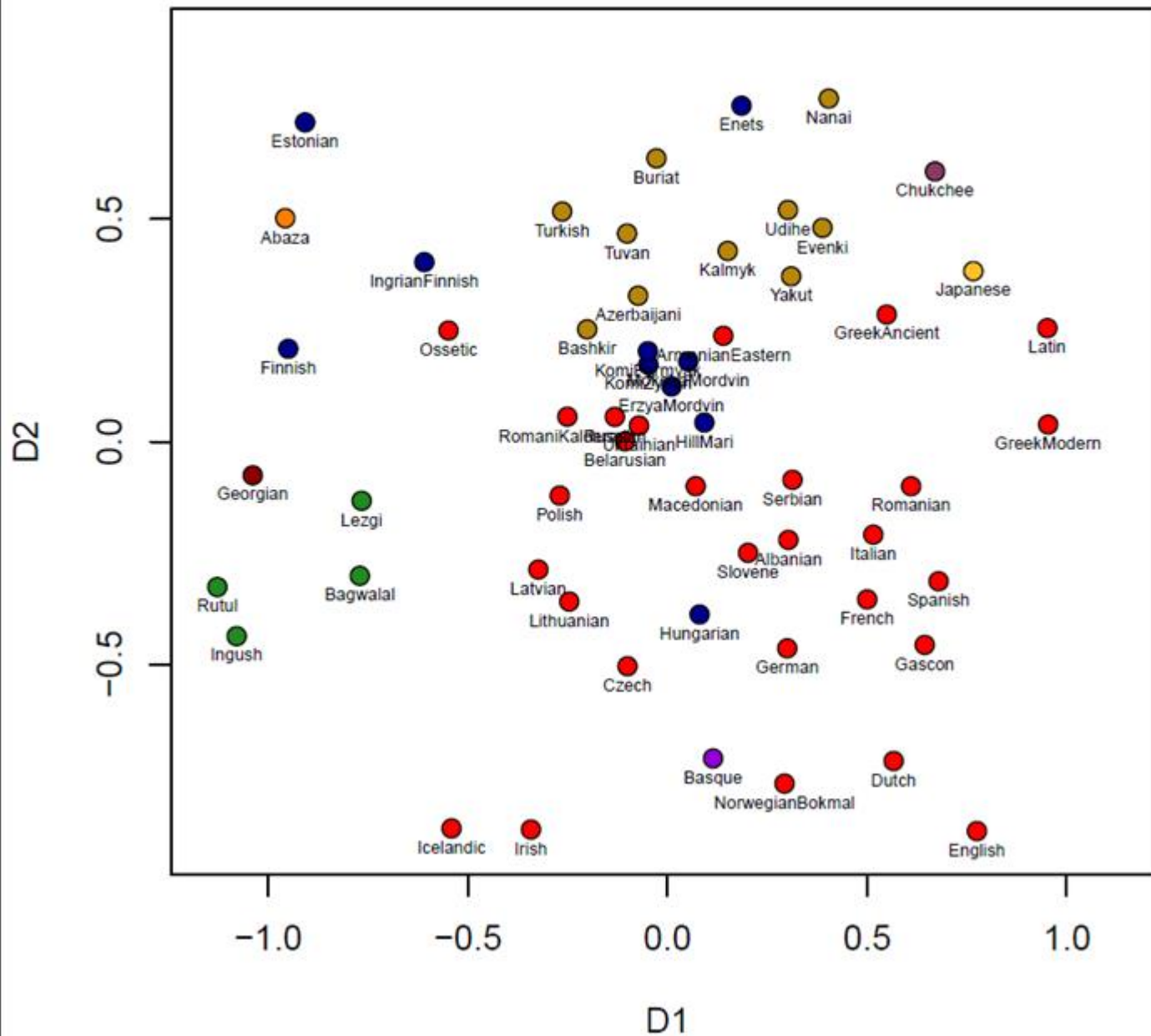
Results: transitivity in Uralic

- The transitivity ratios in Hungarian (0.49) and Komi-Permyak (0.46) are very close to each other, but there are many predicates that do not match in their transitivity values in the two languages

		Hungarian	
		TR	INTR
Komi-Permyak	TR	45	9
	INTR	11	46

- **Transitivity distance** between Hungarian and Komi-Permyak = $(9+11)/(45+9+11+46) = 20 / 111 = 0.18$
- We can build a distance matrix based on this metric, and visualize it as an MDS (multidimensional scaling) plot

MDS plot for DistTrProf = Hamming distance between transitivity profiles



Results: transitivity in Uralic

- Family-size taxa are clearly visible on the plot
- Uralic is more distorted than other big families
 - Enets patterns with other languages of Siberia
 - Hungarian patterns with Standard Average European languages
 - Permic, Mordvinic and Mari are between Slavic and Altaic
 - Baltic Finnic languages are unlike anything else
- This means that semantic underpinnings of syntactic transitivity in individual Uralic languages underwent significant changes, presumably due to contacts with other languages

Individual verbs and verb classes

- Which predicates behave similarly in all (or most of) the Uralic languages?
- Are there areal patterns in valency class organization?
- If a language (branch) differs in some respect from the rest of the family, can it be explained by contact?

Individual verbs and verb classes

- A fairly uniform class of reciprocal verbs (especially across Permic and Mordvinic)
 - ‘encounter’, ‘fight’, ‘be friends’, ‘get to know’, ‘speak’, ‘agree’, ‘have a quarrel’, ‘mix’ (= Russian NOM_s_INS)
- Different coding devices
 - Komi: NOM_COM
 - Udmurt, Hungarian: NOM_INS
 - Enets: NOM_LOC
 - Mordvinic: NOM_NOM_marto/martə
 - Hill Mari: NOM_NOM_dono
 - Finnish: NOM_GEN_kanssa

Individual verbs and verb classes

- Transitive verbs (transitive in all Uralic languages): 22
 - ‘take’, ‘eat’, ‘make’, ‘break’, ‘put on’, ‘lose’, etc.
- If a predicate is transitive in all the Uralic languages except for one language or branch, it is a Finnic language or Finnic languages in general (cf. lowest transitivity ratio)
 - e.g. ‘look for’, ‘love’, ‘kiss’
- If a predicate is intransitive in only one language or branch, its second argument is encoded by the partitive case

Exception: Estonian *järele jõudma* + ALL ‘catch up with someone’

Standard Finnish vs. Ingrian Finnish

- PART in Standard Finnish (0.30), TR in Ingrian Finnish (0.38)
- Ingrian: TR
 - drive [a cow to the pasture] (Finnish: NOM_PART)
 - call (Finnish: NOM_PART)
 - plough (Finnish: NOM_PART)
 - despise (Finnish: NOM_PART)
 - hold (Estonian, Finnish: NOM_PART)
 - hear (Estonian, Finnish: NOM_PART)
- Exception:
 - pour (Ingrian: NOM_PART)

Standard Finnish vs. Ingrian Finnish

- ALL used in more contexts in Ingrian Finnish (=DAT in Russian and other Uralic branches, e.g. Permic and Mordvinic)

X-NOM + auttaa + Y-PART

Pekka autt-oi Matti-a

Pekka.NOM help-PST.3SG Matti-PART

(M. didn't manage to do his homework by himself.) P. helped M.

auttaa + ALL

Mikka autto-i-Ø Eeva-l

Mikka help-PST-3SG Eeva-ALL

(E. didn't manage to do her homework by herself.) 'M. helped E.'

Hungarian and SAE

- Intransitive in most Uralic, but transitive in Hungarian
 - ‘attack’: Hungarian only (German, Czech, Slovene, Italian, etc.)
 - ‘govern’ (German, Czech, Slovene, Italian, etc.)

 - ‘avoid’ (German, Slovene, Italian, Serbian)
 - ‘influence’ (German, Czech, Italian)
 - ‘look’ (Czech, Slovene, Italian, Albanian)
 - ‘reach’ (German, Slovene, Albanian)
 - ‘follow’ (Italian, Serbian, Romanian, Albanian)
 - ‘get to know’ (German, Serbian)

 - be shy (Japanese, Moksha)

Enets and other Siberian languages

- Intransitive in most Uralic, but transitive in Enets
 - ‘shoot’ (Evenki, Nanai, Udege, Yakut, Buryat)
 - ‘like’ (Evenki, Nanai, Udege, Yakut)

 - ‘think’ (Nanai, Udege, Buryat)
 - ‘encounter’ (Yakut)
 - ‘resemble’ (Evenki)
 - ‘need’ (Nanai)

 - ‘be afraid’ (Latin, Spanish, Ancient and Modern Greek, Bengali, Chinese, Khmer)

Further methodological issues

- Etymological connections across Uralic languages:
 - Predicates
 - Case marking/postpositions
- Specific contact scenarios:
 - Can we prove the influence?
 - The direction of change
- Reconstructing the proto-system (Uralic, Finno-Ugric, Finnic)?
- Language-internal variation

Conclusions

- Uralic languages are more diverse in terms of their transitivity profiles than other language families in Northern Eurasia
- Uralic languages follow certain areal patterns with respect to both transitivity ratio and individual valency classes
 - Enets → other languages of Siberia
 - Hungarian → Standard Average European
 - Permic, Mordvinic and Mari → Slavic (Russian) and Altaic
 - Baltic Finnic languages on their own
- Language contact is an important factor in valency class organization in Uralic languages

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