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## How to distinguish semantically close cases : A case study on Mordvin illative and lative

Erkkilä, Riku

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# HOW TO DISTINGUISH BETWEEN SEMANTICALLY CLOSE CASES

A case study on Mordvin illative and lative



# BACKGROUND

- Mordvin languages (Erzya and Moksha) have two spatial cases expressing GOAL of an action
- The variation has been explained in various ways
  - Lative is not a case, but a derivational affix (e. g. Wiedemann 1865) or an allomorph of illative (e. g. GMJa 1962)
  - The difference between illative and lative lies in the meanings/semantic roles they convey (e. g. GMJa 1980; Bartens 1996; EK 2000; MK 2000)
  - In addition to the meanings the difference has something to do with the properties of the landmark noun (e. g. Ahlquist 1861; Alhoniemi 1985; EMJa 2018; Erkkilä 2019)
- In this paper I will explore different parameters that affect the choice between GOAL-cases in Mordvin languages



# MORDVIN SPATIAL CASE SYSTEM

- Productive inflection makes a four-way distinction
  - In content nouns GOAL-marking varies between two cases
  - Relational nouns inflect according to one of the case series according to their lexical preference

## Content nouns

LOCATION	inessive
SOURCE	elative
GOAL	illative/lative
PATH	prolative

## Relational nouns

LOCATION	inessive	locative
SOURCE	elative	ablative (partitive)
GOAL	illative	lative
PATH	prolative	



# THEORETICAL BACKGROUND (COGNITIVE LINGUISTICS)

- Conceptualization of situations
  - Based on generalizations made from recurring events and general world knowledge
  - Categorized based on similarities with previous situations
- Relations expressed by cases and relational nouns
  - Relation between trajector and landmark
    - Trajector = entity that is located
    - Landmark = entity in relation to which trajector is related
  - Can be situated in various cognitive domains (e. g. spatial, temporal, causal)



# THEORETICAL BACKGROUND (COGNITIVE LINGUISTICS; CONT.)

- Meanings of cases
  - One case can have several meanings
  - Different meanings are activated in different contexts
  - Meanings have proto-scenes (schematic "skeletons" abstracted from actual situations)
    - Proto-scenes (and meanings) are differentiated by a functional element (an element in the proto-scene which when changed changes the whole proto-scene)
- Relational nouns (postpositions/adverbs)
  - Focus the attention to some part of the landmark noun
  - Difference between inflected content nouns and relational noun constructions is that of conceptualization and scope of attention, not one of meaning → content nouns and relational nouns can be studied together



# THEORETICAL BACKGROUND (PROPERTIES OF THE LANDMARK NOUN)

- The properties of the landmark noun have been proven meaningful in studies of cognitive psychology
  - Humans have pre-linguistic spatial prototypes which help the categorization of entities (Azañón 2020)
  - The shape of the landmark noun affects the acceptance of spatial expressions containing *über* 'above' and *unter* 'below' in German (Kluth et. al. 2019)
  - The size of the landmark affects the acceptance of the use of *near* in spatial descriptions (Carlson & Covey 2005)



# DATA

- 200 examples of both illative and lative in Erzya and Moksha
  - Data includes both content nouns and relational nouns that have productive inflection (i. e. no lexicalized forms)
- MokshEr corpus (University of Turku)
  - Standard literary language
  - Mostly newspaper texts and prose





# MEANINGS OF GOAL-CASES IN MORDVIN LANGUAGES

meaning	conextual variant (submeaning)	Erzya		Moksha	
		ill.	lat.	ill.	lat.
TARGET	TARGET	X	X	X	X
	PATH	X	X	X	X
	COGNITIVE	X	X	X	
	APPEARING	X		X	
	MEASURE			X	
DIRECTION	DIRECTION	X	X	X	X
	PATH	X	X	X	X
	COGNITIVE		X		X
STAYING		X		X	X
PLACE		X	X	X	X
LOCATION		X	X	X	X
TEMPORAL		X	X	X	X
RESULT		X		X	X
REASON		X	X	X	X
PART				X	



# CLASSIFICATION OF LANDMARK NOUNS

- Spatial landmarks
  - Functionally 2-dimensional or 3-dimensional
  - Bounded or unbounded
- Other landmarks
  - Objects, institutions, abstract entities, temporal entities
- Examples

bounded 2D	bounded 3D	unbounded 2D	unbounded 3D	object	institution	abstract	temporal
<i>kalmelanga</i> 'graveyard' (M)	<i>vel'e</i> 'village' (E)	<i>moda</i> 'earth' (E)	<i>meñel'</i> 'sky, heaven' (E)	<i>šufta</i> 'tree' (M)	<i>mil'ićija</i> 'militia' (E)	<i>t'ev</i> 'work' (M)	<i>il'äd'</i> 'evening' (M)



# CLASSIFICATION OF LANDMARK NOUNS (CONT.)

- Prototypicality of the landmark noun as a representative of its category
  - A four-point scale for spatial landmarks
  - No prototypicality assessment for objects, institutions, abstract entities, and temporal entities
- Examples (bounded 2D, Moksha)

prototypical	less prototypical	less unprototypical	unprototypical
<i>šra langa</i> 'top of table'	<i>šama</i> 'face'	<i>ulav</i> 'load'	<i>ird'əz</i> 'rib'



# RESULTS (LANDMARK TYPE; ERZYA)

ill	target (target)	7	9	21	5	15	0	27	0	84
	target (path)	11	4	3	3	1	4	13	0	39
	target (cognitive/communication)	1	0	4	3	8	0	4	1	21
	target (appearing)	0	0	0	0	0	0	8	0	8
	target (measure)	0	0	0	0	0	0	0	0	0
	direction (direction)	0	1	0	0	0	0	0	0	1
	direction (path)	0	1	0	0	0	0	0	0	1
	direction (cognitive/communication)	0	0	0	0	0	0	0	0	0
	staying	1	0	2	0	0	0	1	0	4
	place	6	1	6	0	1	0	0	0	14
	location	3	0	2	0	0	1	1	0	7
	temporal	0	0	0	0	0	0	0	8	8
	result	1	1	0	0	2	0	3	0	7
	reason	0	0	0	0	1	0	5	0	6
	part	0	0	0	0	0	0	0	0	0
	total	30	17	38	11	28	5	62	9	200
			bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time
lat	target (target)	6	14	1	3	0	6	0	0	30
	target (path)	21	14	2	2	0	6	0	0	45
	target (cognitive/communication)	1	0	0	0	0	0	0	0	1
	target (appearing)	0	0	0	0	0	0	0	0	0
	target (measure)	0	0	0	0	0	0	0	0	0
	direction (direction)	2	16	0	1	1	0	0	0	20
	direction (path)	29	41	2	3	1	3	1	0	80
	direction (cognitive/communication)	0	12	0	0	0	0	0	0	12
	staying	0	0	0	0	0	0	0	0	0
	place	1	3	0	0	0	0	0	0	4
	location	0	3	0	1	0	0	0	0	4
	temporal	0	0	0	0	0	0	0	1	1
	result	0	0	0	0	0	0	0	0	0
	reason	1	0	0	1	0	0	1	0	3
	part	0	0	0	0	0	0	0	0	0
	total	61	103	5	11	2	15	2	1	200



# RESULTS (LANDMARK TYPE; ERZYA)

ill	target (target)	7	9	21	5	15	0	27	0	84
	target (path)	11	4	3	3	1	4	13	0	39
	target (cognitive/communication)	1	0	4	3	8	0	4	1	21
	target (appearing)	0	0	0	0	0	0	8	0	8
	target (measure)	0	0	0	0	0	0	0	0	0
	direction (direction)	0	1	0	0	0	0	0	0	1
	direction (path)	0	1	0	0	0	0	0	0	1
	direction (cognitive/communication)	0	0	0	0	0	0	0	0	0
	staying	1	0	2	0	0	0	1	0	4
	place	6	1	6	0	1	0	0	0	14
	location	3	0	2	0	0	1	1	0	7
	temporal	0	0	0	0	0	0	0	8	8
	result	1	1	0	0	2	0	3	0	7
	reason	0	0	0	0	1	0	5	0	6
	part	0	0	0	0	0	0	0	0	0
	total	30	17	38	11	28	5	62	9	200
	lat		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time
target (target)		6	14	1	3	0	6	0	0	30
target (path)		21	14	2	2	0	6	0	0	45
target (cognitive/communication)		1	0	0	0	0	0	0	0	1
target (appearing)		0	0	0	0	0	0	0	0	0
target (measure)		0	0	0	0	0	0	0	0	0
direction (direction)		2	16	0	1	1	0	0	0	20
direction (path)		29	41	2	3	1	3	1	0	80
direction (cognitive/communication)		0	12	0	0	0	0	0	0	12
staying		0	0	0	0	0	0	0	0	0
place		1	3	0	0	0	0	0	0	4
location		0	3	0	1	0	0	0	0	4
temporal		0	0	0	0	0	0	0	1	1
result		0	0	0	0	0	0	0	0	0
reason		1	0	0	1	0	0	1	0	3
part		0	0	0	0	0	0	0	0	0
total		61	103	5	11	2	15	2	1	200



# RESULTS (LANDMARK TYPE; MOKSHA)

ill	target (target)	7	9	19	2	16	2	18	0	73
	target (path)	4	6	8	1	0	0	12	1	32
	target (cognitive/communication)	1	3	3	0	22	0	1	0	30
	target (appearing)	0	0	0	0	0	0	8	0	8
	target (measure)	0	0	0	0	0	0	1	0	1
	direction (direction)	0	2	2	1	2	0	0	0	7
	direction (path)	1	1	1	0	0	0	1	0	4
	direction (cognitive/communication)	0	0	0	0	0	0	0	0	0
	staying	0	0	1	2	0	0	2	0	5
	place	7	1	3	0	0	0	0	0	11
	location	1	1	2	1	3	0	6	0	14
	temporal	0	0	0	0	0	0	0	9	9
	result	0	0	0	0	0	0	1	0	1
	reason	0	0	0	0	1	0	3	0	4
	part	0	0	0	0	0	0	1	0	1
	total	21	23	39	7	44	2	54	10	200
		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time	total
lat	target (target)	21	6	2	0	0	14	2	0	45
	target (path)	24	7	2	4	0	7	1	0	45
	target (cognitive/communication)	0	0	0	0	0	0	0	0	0
	target (appearing)	0	0	0	0	0	0	0	0	0
	target (measure)	0	0	0	0	0	0	0	0	0
	direction (direction)	6	13	0	0	0	3	0	0	22
	direction (path)	26	22	3	2	0	6	1	0	60
	direction (cognitive/communication)	0	6	0	0	0	0	0	0	6
	staying	4	3	0	0	0	0	0	0	7
	place	3	0	0	0	0	0	1	0	4
	location	3	1	0	0	0	1	0	0	5
	temporal	0	0	0	0	0	0	0	2	2
	result	0	0	0	0	0	2	1	0	3
	reason	0	0	0	0	0	0	1	0	1
	part	0	0	0	0	0	0	0	0	0
	total	87	58	7	6	0	33	7	2	200



# RESULTS (LANDMARK TYPE; MOKSHA)

ill	target (target)		7	9	19	2	16	2	18	0	73
	target (path)		4	6	8	1	0	0	12	1	32
	target (cognitive/communication)		1	3	3	0	22	0	1	0	30
	target (appearing)		0	0	0	0	0	0	8	0	8
	target (measure)		0	0	0	0	0	0	1	0	1
	direction (direction)		0	2	2	1	2	0	0	0	7
	direction (path)		1	1	1	0	0	0	1	0	4
	direction (cognitive/communication)		0	0	0	0	0	0	0	0	0
	staying		0	0	1	2	0	0	2	0	5
	place		7	1	3	0	0	0	0	0	11
	location		1	1	2	1	3	0	6	0	14
	temporal		0	0	0	0	0	0	0	9	9
	result		0	0	0	0	0	0	1	0	1
	reason		0	0	0	0	1	0	3	0	4
	part		0	0	0	0	0	0	1	0	1
	total		21	23	39	7	44	2	54	10	200
				bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time
lat	target (target)		21	6	2	0	0	14	2	0	45
	target (path)		24	7	2	4	0	7	1	0	45
	target (cognitive/communication)		0	0	0	0	0	0	0	0	0
	target (appearing)		0	0	0	0	0	0	0	0	0
	target (measure)		0	0	0	0	0	0	0	0	0
	direction (direction)		6	13	0	0	0	3	0	0	22
	direction (path)		26	22	3	2	0	6	1	0	60
	direction (cognitive/communication)		0	6	0	0	0	0	0	0	6
	staying		4	3	0	0	0	0	0	0	7
	place		3	0	0	0	0	0	1	0	4
	location		3	1	0	0	0	1	0	0	5
	temporal		0	0	0	0	0	0	0	2	2
	result		0	0	0	0	0	2	1	0	3
	reason		0	0	0	0	0	0	1	0	1
	part		0	0	0	0	0	0	0	0	0
	total		87	58	7	6	0	33	7	2	200



# RESULTS (LANDMARK PROTOTYPICALITY; ERZYA)

ill	prototypical	14	3	8	3	4	0	0	0	32
	less prototypical	6	6	20	5	12	0	0	0	49
	less unprototypical	8	3	8	2	5	0	0	0	26
	unprototypical	2	5	2	1	7	0	0	0	17
	N/A	0	0	0	0	0	5	62	9	76
	total	30	17	38	11	28	5	62	9	200
		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time	total
lat	prototypical	27	6	3	5	0	0	0	0	41
	less prototypical	26	15	2	5	0	0	0	0	48
	less unprototypical	8	60	0	1	2	0	0	0	71
	unprototypical	0	22	0	0	0	0	0	0	22
	N/A	0	0	0	0	0	15	2	1	18
	total	61	103	5	11	2	15	2	1	200





# RESULTS (LANDMARK PROTOTYPICALITY; ERZYA)

ill	prototypical	14	3	8	3	4	0	0	0	32
	less prototypical	6	6	20	5	12	0	0	0	49
	less unprototypical	8	3	8	2	5	0	0	0	26
	unprototypical	2	5	2	1	7	0	0	0	17
	N/A	0	0	0	0	0	5	62	9	76
	total	30	17	38	11	28	5	62	9	200
		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time	total
lat	prototypical	27	6	3	5	0	0	0	0	41
	less prototypical	26	15	2	5	0	0	0	0	48
	less unprototypical	8	60	0	1	2	0	0	0	71
	unprototypical	0	22	0	0	0	0	0	0	22
	N/A	0	0	0	0	0	15	2	1	18
	total	61	103	5	11	2	15	2	1	200



# RESULTS (LANDMARK PROTOTYPICALITY; MOKSHA)

ill	prototypical	8	2	12	3	8	0	0	0	33
	less prototypical	4	6	13	4	24	0	0	0	51
	less unprototypical	9	12	12	0	7	0	0	0	40
	unprototypical	0	3	2	0	5	0	0	0	10
	N/A	0	0	0	0	0	2	54	10	66
	total	21	23	39	7	44	2	54	10	200
		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time	total
lat	prototypical	31	9	3	0	0	0	0	0	43
	less prototypical	49	19	3	4	0	0	0	0	75
	less unprototypical	7	23	1	2	0	0	0	0	33
	unprototypical	0	7	0	0	0	0	0	0	7
	N/A	0	0	0	0	0	33	7	2	42
	total	87	58	7	6	0	33	7	2	200



# RESULTS (LANDMARK PROTOTYPICALITY; MOKSHA)

ill	prototypical	8	2	12	3	8	0	0	0	33
	less prototypical	4	6	13	4	24	0	0	0	51
	less unprototypical	9	12	12	0	7	0	0	0	40
	unprototypical	0	3	2	0	5	0	0	0	10
	N/A	0	0	0	0	0	2	54	10	66
	total	21	23	39	7	44	2	54	10	200
		bounded 3D	unbounded 3D	bounded 2D	unbounded 2D	object	institution	abstract	time	total
lat	prototypical	31	9	3	0	0	0	0	0	43
	less prototypical	49	19	3	4	0	0	0	0	75
	less unprototypical	7	23	1	2	0	0	0	0	33
	unprototypical	0	7	0	0	0	0	0	0	7
	N/A	0	0	0	0	0	33	7	2	42
	total	87	58	7	6	0	33	7	2	200



# CONCLUSIONS

- Illative and lative in Mordvin languages are two different cases with variation of use on different levels
  - Differences in the attested meanings of illative and lative within and between Mordvin languages
  - The landmark type seems to affect the choice of GOAL-case
  - The prototypicality of the landmark seems to affect the choice of GOAL-case
- The exact reason for this, and the interaction between the parameters should be studied further



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