

# On the nature of classifiers in Russian Sign Language

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# Classifiers in sign languages

- Classifier: a handshape reflecting some visual/semantic properties of an argument
- Classifiers combine with verbs of movement/location to form classifier predicates
  - Parallel: verbal classifiers in spoken languages (Aikhenvald 2003)
- Various theoretical analyses possible and available
- **Our aim:** a formal analysis of classifiers in Russian Sign Language (RSL)

# Outline

1. Basic properties of classifiers
2. Methodology
3. Basic data
4. Possible analyses
5. Our proposal
6. Conclusions

# Classifier predicates

- Classifier predicates (CLPs):  
verbs of movement/location (MOVE, BE) (Zwitserslood 2012)
  - Phonologically: movement only
- Classifiers (CLs):  
morphemes classifying arguments
  - Phonologically: handshape
  - Similar to verbal classifiers in spoken languages:

sa            kam      put-ra-ho-o                      [Waris]  
coconut    1SG      CL:ROUND-get-BEN-IMP  
'Give me a coconut!'

# Types of classifiers

- Whole-entity classifiers (e.g. human, car, plane)
- Body-part (e.g. leg, hand, head)
- Handling (e.g. holding a thin object, holding a round object)
  - We do not consider them further in this talk (Kimmelman et al. 2017)

# Classifiers in lexical signs

- The same handshapes with apparently the same underlying meaning occur in lexical signs (Zwitserlood 2012):

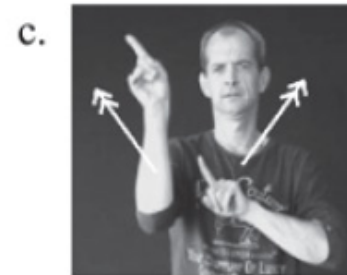
(7)



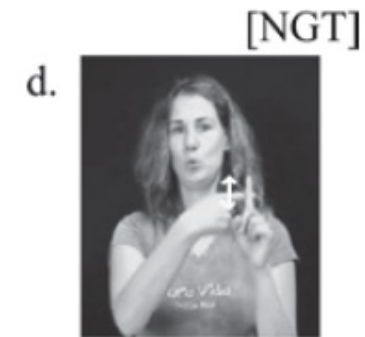
'to knit'



'handicap'



'fireworks'



'temperature'



'key'



'to fish'



'to brush teeth'



'curtains'

# Possible analyses of classifiers

- Non-linguistic entities/linguistic entities but not parallel to any phenomena in spoken languages (Cogill-Koez 2000)

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- Pronominal arguments
- Argument-introducing functional heads
- Agreement markers



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- Noun incorporation
- Pronominal arguments
- Argument-introducing functional heads
- Agreement markers
- Predicate modifiers

# Methodology

- Russian Sign Language (RSL)
  - Used by at least 120 000 people in Russia
  - $\approx$  200 years old
- On-line corpus of RSL (Burkova 2015):  
<http://rsl.nstu.ru/site/index/language/en>
  - 230 recordings (5 hours 30 minutes) by 43 signers
  - Glosses for signs and sentence-level translation
- Additional elicitation:
  - Picture-description task (Zwitserlood 2003) by 7 native signers
  - Acceptability judgments by 4 native signers

# Basic data

- RSL has various classifiers of various types:
  - Whole-entity classifiers (CAR, TREE, UPRIGHT.BEING, TWO.LEGGED, etc.)
  - Body-part classifiers (LEG, ARM, HEAD, TAIL)
  - (Handling classifiers)
- Classifiers combine with verbal roots of movement/location to form classifier predicates
  - The same handshapes also occur in lexical signs
- Morphological and syntactic aspects of classifiers and classifier predicates in RSL are roughly similar to what has been described for other sign languages (with some exceptions)

# Noun incorporation

Idea: a classifier handshape is an incorporated noun

- Problem 1: classifiers do not saturate arguments of classifier predicates (Zwitserlood 2003)

(1) \*(MAN) CL(B)-COME  
'A man came.'

# Noun incorporation

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(1) \*(MAN) CL(B)-COME

'A man came.'

- Problem 2: what is incorporated? The nominal sign and the classifier often do not share the form (Glück & Pfau 1988).

(2) MAN/WOMAN/CHILD CL(B)-COME

'A man/woman/child came.'

# Pronominal arguments

Idea: even when a full NP argument is present, it is in fact an adjunct, and the classifier itself is the argument (Baker 1996)

- Predictions of Pronominal Argument Hypothesis
  - Free word order, including discontinuous noun phrases
  - Null anaphora
  - No true D-quantifiers
  - No movement from the “argument” NPs

# Pronominal arguments

- Predictions of Pronominal Argument Hypothesis
  - Free word order, including discontinuous noun phrases
    - Word order is more rigid with classifier predicates (V-final)
    - Discontinuous noun phrases possible with all types of predicates
  - Null anaphora
    - Possible, but with all types of predicates (with some limitations)
  - No true D-quantifiers
    - (3) NOBODY CL(B)-COME  
'Nobody came.'
  - No movement from the "argument" NPs
    - (4) GIRL IX-a, POSS-a SISTER CL(B)-COME  
'This girl, her sister is coming.'

# Argument-introducing functional heads

- Benedicto & Brentari (2004): argument structure of classifier predicates in ASL depends on the type of classifier:
  - Whole-entity classifier -> unaccusative predicate
  - Body-part classifier -> unergative predicate
  - Handling classifier -> transitive predicate
- Analysis: classifiers are functional heads introducing argument-hosting projections. The heads determine the thematic role of the argument.



# Argument-introducing functional heads

- Problem: both whole-entity and body-part classifier predicates can be intransitive or transitive:

(5) CHAIR CL( $\dot{I}$ )-MOVE  
'A chair moves.'

(6) IX-1 CHAIR CL( $\dot{I}$ )-MOVE  
'I move a chair.'

(7) MY LEG CL( $\dot{B}$ )-MOVE  
'My leg moves.'

(8) IX-1 LEG CL( $\dot{B}$ )-MOVE  
'I move my leg.'

- And the same is true for instrumental classifiers, as also shown for other sign languages (de Lint 2018)

# Agreement markers

- The most common theory: since the choice of the classifier is dependent on some features of the argument and it does not saturate the argument, it is an agreement marker
  - E.g. Zwitserlood 2003: gender agreement

# Agreement markers

- Problem 1: the noun does not fully determine the choice of the classifier

(9) GIRL CL(B)/CL(b)-COME  
'A girl came.'

- Problem 2: the verbal root might influence the choice of the classifier: CL(b)-JUMP, never \*CL(B)-JUMP

# Agreement markers

- Problem 3: agreement with internal arguments (not subjects) is unusual (Moravcsik 1978)
- Problem 4: there is no gender/class marking on the noun phrase itself or anywhere else except for on the predicate – this is unusual (Aikhenvald 2003)

# Our proposal

- Davidson (2015) without much detail analyses classifier handshapes as modifying/restricting the reference of the argument.
- Similar phenomena in spoken languages: some types of indefinites and incorporation does not saturate arguments, but restricts its reference (Chung & Ladusaw 2004).

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- Similar phenomena in spoken languages: some types of indefinites and incorporation does not saturate arguments, but restricts its reference (Chung & Ladusaw 2004).
- Semantic analysis:

$[[\text{MOVE}]] = \lambda x \lambda e [\text{move}(x, e) \ \& \ \text{theme}(x)]$

$[[\text{CL}(b)]] = \lambda x [\text{two-legged}(x)]$

$[[\text{CL}(b)\text{-MOVE}]] = \text{Restrict}(\lambda x \lambda e [\text{move}(x, e) \ \& \ \text{theme}(x)], \lambda x [\text{two-legged}(x)]) = \lambda x \lambda e [\text{move}(x, e) \ \& \ \text{theme}(x) \ \& \ \text{two-legged}(x)]$

# Our proposal

## Morphosyntax:

- A classifier is a root
  - Shouldn't it be an open class then? Well it sort of is: three-legged creatures

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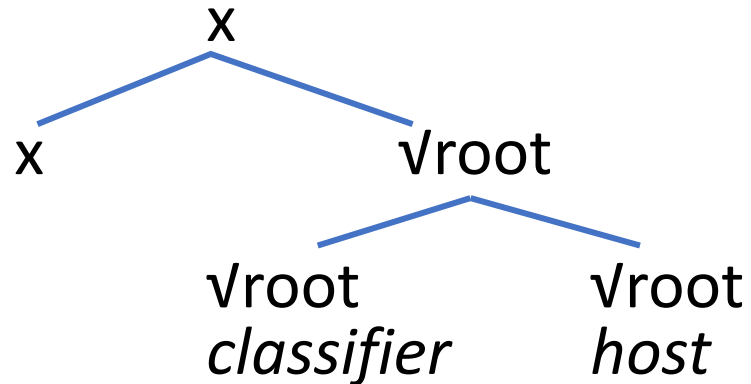
- A classifier is a root
  - Shouldn't it be an open class then? Well it sort of is: three-legged creatures
- It combines with a verbal root to form a compound
  - The verbal root only selects an internal argument (a Theme) which explains why classifiers are always connected to the Theme argument
  - Similar to the analysis of lexical affixes in Salish (Wiltschko 2009)



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## Morphosyntax:

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# Our proposal

What does this analysis capture?

- Classifiers do not saturate argument slots of the predicate
- Classifiers do not have the same form as arguments they cross-reference
- Classifiers do not fully depend on the referent of the argument
- Classifiers are related to argument structure (e.g. they are mostly associated with the theme argument) but do not determine it
- Additional advantage: a unified analysis of classifier predicate and classifiers within lexical signs

# Our proposal

- Zwitserlood 2003:
  - Classifiers in classifier predicates are agreement markers
  - Classifiers in lexical signs are roots forming root compounds
    - Classifiers are not restricted to the Theme argument
    - The lexical sign does not have to be a predicate

# Our proposal

- Zwitserlood 2003:
  - Classifiers in classifier predicates are agreement markers
  - Classifiers in lexical signs are roots forming root compounds
    - Classifiers are not restricted to the Theme argument
    - The lexical sign does not have to be a predicate
- Our account:
  - Classifiers are always roots forming root compounds
  - The category of the resulting compound is determined by the other root: whether it is a verbal root (a verb of movement) or something else
  - Connection to argument structure is due to the properties of the verbal root

# Conclusions

- RSL has classifiers (whole-entity, body-part, and handling) used in classifier predicates and as components of lexical signs
- They are not incorporated nouns, pronominal arguments, argument-introducing functional heads, or agreement markers
- They are roots forming compounds with other roots and semantically functioning as predicate modifiers

Thank you!

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# Bonus analysis: clitics

- It has been suggested that what is often analyzed as verbal agreement in sign languages are clitics (Nevins 2011).
  - Idea: maybe classifiers are clitics
- Predictions:
  - Clitics do not saturate arguments (neither does agreement)
  - They have a low selectivity of hosts – not true for classifiers
  - They tend to compete in clusters – phonological restrictions
  - They do not depend on tense – no evidence for tense marking in RSL
  - They might be optional (agreement is obligatory) – classifiers seem obligatory due to phonology
- Conclusions: non-conclusive