

Typological & Formal Approaches to SLs – Moscow, April 2018

## **Lecture 1:** **Sign Language Negation – Intra- and Cross-modal Typology**

Roland Pfau



## Overview

- I. Sign language typology
- II. Typology of negation in spoken languages
- III. Sign language typology: manual dominant vs. non-manual dominant sign languages
- IV. Variation within groups
- V. Cross-modal typology

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## A Note on Notation

- SL examples are glossed in small caps

				v/n
INDEX <sub>2</sub>	H-A-N-S	INDEX <sub>3a</sub>	ORANGE^SAFT	₂GEB <sub>3a</sub> -CL:C
you	Hans	index	orange juice	give
‘Will you give Hans (a glass of) orange juice?’				

- Subscript numbers refer to points in signing space used for pronominalization & agreement
- INDEX = pointing sign
- Lines above the gloss indicate the scope of grammatical non-manual markers

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## Part I:

### Sign language typology

## Modality and Typology

- Certain properties of SLs are shaped by the affordances of the visual-gestural modality
- Modality effects, e.g. iconicity, use of space, simultaneity, two identical articulators → SLs generally pattern alike in these domains
- Still, SLs differ from each other – and they do so along similar lines as spoken languages do
- Sign language typology (Permiss et al. 2007; Zeshan 2008; De Vos & Pfau 2015)

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## Phonology & Morphology

- Phoneme inventory: handshapes in AdaSL vs. NGT (van der Kooij 2002; Nyst 2007)
- Spatial marking on pronouns/predicates: use of arbitrary vs. absolute locations
- No use of arbitrary loci in Kata Kolok (Bali) and Al-Sayyid Bedouin SL (De Vos 2012; Aronoff et al. 2005)
- Use of absolute loci in Inuit SL (Schuit 2013)
- No use of entity classifiers in AdaSL

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### Variation in the Use of Space

DARRA RIDDAP PHONE IX.PRO<sub>1s</sub> 1LAKARA<sub>3s</sub> 1DIR-FROM<sub>1</sub> [YSL]  
 1SG call phone 3SG tell-him come-here  
 'I will call him and tell him to come here.'

Use of absolute loci (on pronouns & verbs) in Yolngu SL (NE Australia; Bauer 2014)

No use of entity classifiers in Adamorobe SL (Ghana) → generic directionals; (Nyst 2007)



### Basic Word Order

- Two common basic word orders have been described for SLs (Leeson & Saeed 2012):
  - SVO: ASL, British SL, Brazilian SL
  - SOV: DGS, NGT, Italian SL, Indopakistani SL
- Search for basic word order is complicated by: simultaneous constructions, doubling, pro drop, pronoun copy (Kimmelman 2012)
- Different word order in locative constructions: ground before figure

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### Locative Constructions

rh: TABLE<sub>loc(s)</sub> MILK BE-LOCATED<sub>top-of-loc(s)</sub>  
 lh: TABLE<sub>loc(s)</sub> MILK  
 'A glass of milk is on (top of) the table.'

NGT (Pfau & Aboh 2012)

DGS (Perniss 2007)

rh: TREE CL(tree)<sub>loc(s)</sub> MAN BROWN SASS-HAT CL.MAN<sub>loc(s)</sub>  
 lh: TREE CL(tree)<sub>loc(s)</sub> MAN BROWN SASS-HAT CL.MAN<sub>loc(s)</sub>  
 'A man with a brown hat is standing next to a tree, facing the tree.'

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### ASL: Position of Wh-Sign

- Three options: base position (b), sentence-final (c), or doubled (d) (Petronio & Lillo-Martin 1997; Neidle et al. 2000; Sandler & Lillo-Martin 2006)

(a) PETER BUY CAR YESTERDAY  
 \_\_\_\_\_ wh  
 (b) PETER BUY **WHAT** YESTERDAY?  
 \_\_\_\_\_ wh  
 (c) PETER BUY YESTERDAY **WHAT**?  
 \_\_\_\_\_ wh  
 (d) **WHAT** PETER BUY YESTERDAY **WHAT**?

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### Indopakistani Sign Language

(Aboh, Pfau & Zeshan 2005; Aboh & Pfau 2010)

- Only one wh-sign (G-WH) which always appears in sentence-final position → q-particle

(\_\_\_\_\_) \_\_\_\_\_ wh  
 a. CHILD ANGRY **G-WH**  
 'Why is the child angry?'  
 (\_\_\_\_\_) \_\_\_\_\_ wh  
 b. INDEX<sub>2</sub> BUY **G-WH**  
 'What did you buy?'  
 (\_\_\_\_\_) \_\_\_\_\_ wh  
 c. INDEX<sub>2</sub> FRIEND SLEEP **G-WH**  
 'Where does your friend sleep?'

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### Relative Clauses

- Relative clauses: head-external (e.g. DGS (a)) vs. head-internal (e.g. Italian SL (b))
- Scope of non-manual and interpretation of time adverbial

\_\_\_\_\_ rel  
 a. TOMORROW MAN [RPRO<sub>3s</sub> TIE BUY]<sub>RC</sub> CONFERENCE<sub>3s</sub> GO-TO<sub>3s</sub>  
 'Tomorrow the man who is buying a tie will go to a conference.'  
 \_\_\_\_\_ rel  
 b. [TODAY MAN<sub>i</sub> PIE BRING PE<sub>i</sub>]<sub>RC</sub> YESTERDAY (INDEX<sub>i</sub>) DANCE  
 'The man that brought the pie today danced yesterday.'

(Pfau & Steinbach 2005; Branchini & Donati 2009)

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## And, of course, Negation ...

- In all SLs studied to date, negation can be expressed by manual negation sign and/or a non-manual marker (Zeshan 2004; Quer 2012)
- Still, there are clear differences between SLs
- Position of manual negator differs from SL to SL (Pfau & Quer 2002):

- ASL: MAN **NOT** BUY HOUSE
- DGS/LSC: MAN HOUSE BUY **NOT**

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## Part II:

### Typology of negation in spoken languages

## “Classical” Typology

(Dahl 1979, 2011; Payne 1985)

- “Standard negation” is **clausal** (does not include affixes such as English *un-* & *dis-*)
- Distinction with respect to morphological nature of the negative element(s)
  - negative verbs
    - higher negative verb;
    - negative auxiliaries;
  - negative particles;
  - morphological negatives.

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## Higher Negative Verb

- For instance, **Tongan** (Churchward 1953, in Payne 1985: 208)
- Negative verb *'ikai* takes complement clause (as indicated by aspect marker *ke*)

a. Na'e 'alu 'a Siale  
ASP go ABS Charlie  
'Charlie went.'

b. Na'e 'ikai [s ke 'alu 'a Siale]  
ASP NEG ASP go ABS Charlie  
'Charlie didn't go.'

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## Negative Auxiliary

- For instance, **Evenki** (Nedyalkov 1994: 2)
- Negative auxiliary *ə* takes same inflections as lexical verb in positive sentence

a. Nuŋan min-du purta-va bŭ-che-n  
he 1.SG-DAT knife-ACC give-PAST-3.SG  
'He gave me the knife.'

b. Nuŋan min-du purta-va ə-che-n bŭ-re  
he 1.SG-DAT knife-ACC NEG-PAST-3.SG give-PART  
'He did not give me the knife.'

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## Negative Particle

- For instance, **Dutch** (cf. also the English translation)
- Particles are independent words and are uninflected; position in clause

a. Hans koop-t het auto  
Hans buy-3SG the car  
'Hans buys the car.'

b. Hans koop-t het auto **niet**  
Hans buy-3SG the car NEG  
'Hans does **not** buy the car.'

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## Morphological Negation

- For instance, **Turkish**
- Negative suffix *-mV* attaches to verb stem, is followed by inflectional suffixes

- |    |                        |
|----|------------------------|
| a. | Oku-yor-um             |
|    | read-PROG-1.SG         |
|    | 'I am reading.'        |
| b. | Oku- <b>mu</b> -yor-um |
|    | read-NEG-PROG-1.SG     |
|    | 'I am not reading.'    |

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## A Special Case: Split Negation

- For instance, **French**
- Sentential negation requires the presence of two negative elements

- |    |    |           |           |            |          |                             |     |                                    |
|----|----|-----------|-----------|------------|----------|-----------------------------|-----|------------------------------------|
| a. | Il | veut      | rest-er   | à          | la       | maison                      |     |                                    |
|    | he | want.3.SG | stay-INF  | at         | the      | house                       |     |                                    |
|    |    |           |           |            |          | 'He wants to stay at home.' |     |                                    |
| b. | Il | <b>ne</b> | veut      | <b>pas</b> | rest-er  | à                           | la  | maison                             |
|    | he | NEG       | want.3.SG | NEG        | stay-INF | at                          | the | house                              |
|    |    |           |           |            |          |                             |     | 'He doesn't want to stay at home.' |

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## Sign Languages

- How do sign languages fit into this typological picture? Do they fit at all?
- Potential challenge: common combination of manual and non-manual markers
- (General concern: Is it even desirable to “squeeze” them into existing typology?)

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### Part III:

Sign language typology:  
manual dominant vs. non-  
manual dominant sign languages

## Manual & Non-manual Negation

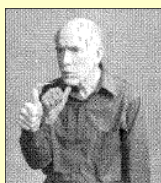
- **Manual** negative particles
  - shared form characteristics across SLs;
  - grammaticalized from manual gestures;
  - particles with additional semantics.



Turkish SL  
(Zeshan 2004:28)



Jordanian SL  
(Hendriks 2008:80)



American SL 23  
(Fischer 2006:187)

## Manual & Non-manual Negation

- **Non-manual** markers
  - side-to-side headshake or backward head tilt;
  - grammaticalized from (culture-specific) non-manual gestures (Van Loon et al. 2014; Pfau 2015);
  - facial expressions (e.g. Inuit SL, Chinese SL)



(Schuit 2013; Yang & Fischer 2002)

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### A Basic Typological Distinction

(Zeshan 2004, 2006a)

- Manual dominant sign languages:
  - presence of a manual negator is required;
  - the non-manual usually only accompanies the manual negator (may spread under cliticization)
- Non-manual dominant sign languages:
  - presence of a manual negator is optional;
  - the non-manual is capable of spreading

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### Manual Dominant Sign Languages

- E.g. Italian SL (1), Hong Kong SL (2), Turkish SL → note the ungrammaticality of b-examples

(1) a. PAOLO CONTRACT SIGN <sup>hs</sup>NON  
 'Paolo didn't sign the contract.'  
 ( ) ( ) <sup>hs</sup>

b. \*PAOLO CONTRACT SIGN  
 'Paolo didn't sign the contract.'

(2) a. YESTERDAY FATHER GO SHOP <sup>hs</sup>NOT  
 'It is not true that father went to shop yesterday.'  
 ( ) ( ) <sup>hs</sup>

b. \*YESTERDAY NIGHT FATHER FAX FRIEND <sup>hs</sup>  
 'Father didn't fax his friend last night.'

(Geraci 2005; Tang 2006)

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### Turkish Sign Language (TİD)



(Zeshan 2006b)

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### Non-manual Dominant SLs

- E.g. American SL (1), German SL (2), SL of the Netherlands, New Zealand SL

(1) a. JOHN ( ) <sup>hs</sup>NOT BUY HOUSE  
 'John is not buying a house.'

b. JOHN <sup>hs</sup>BUY HOUSE  
 'John is not buying a house.'

(2) a. POSS<sub>1</sub> BROTHER WINE LIKE ( ) <sup>hs</sup>NOT  
 'My brother doesn't like wine.'

b. POSS<sub>1</sub> BROTHER WINE LIKE ( ) <sup>hs</sup>  
 'My brother doesn't like wine.'

(Neidle et al. 2000; Pfau 2016a)

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### SL of the Netherlands



(Oomen & Pfau 2017)

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### Part IV:

Variation within groups

### Negative Concord

- Yet, even within groups, sign languages do not behave uniformly
- Within manual dominant group: Turkish SL allows **Negative Concord** (a) while Italian SL does not (b)

a.	INDEX <sub>1</sub> LOOK-AT <sub>3</sub> <b>NOT</b> NO	
	'I didn't look at him.'	
b.	*NOBODY CONTRACT SIGN <b>NON</b>	
	'Nobody signed the contract.'	

(Gökgöz 2011; Geraci 2005)

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### Non-manual Spreading

- Within non-manual dominant group: differences in spreading patterns
- Headshake on **Neg sign only** is grammatical in ASL & Catalan SL, but not in DGS

	<u>neg</u>	
a.	JOHN <b>NOT</b> BUY HOUSE	[ASL]
	<u>neg</u>	
b.	SANTI MEAT EAT <b>NOT</b>	[LSC]
	<u>neg</u>	
c.	*MOTHER FLOWER BUY <b>NOT</b>	[DGS]

(Pfau & Quer 2002; Pfau 2015)

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### Non-manual Spreading

- Headshake on **verb sign only** is grammatical in LSC and DGS, but not in ASL

	<u>neg</u>	
a.	*JOHN <b>BUY</b> HOUSE	[ASL]
	<u>neg</u>	
b.	SANTI MEAT <b>EAT</b>	[LSC]
	<u>neg</u>	
c.	POSS <sub>1</sub> FRIEND MEAT <b>EAT</b>	[DGS]

(Pfau & Quer 2002; Pfau 2015)

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### Negative Concord

- But compare the below DGS example

	<u>re</u>	<u>hs</u>
	INDEX <sub>1</sub> CINEMA GO-TO ( <b>NOT</b> )	
	'I am not going to the movies.'	

- Also NC is attested in ASL (a) and LSC (b), but not in DGS (Wood 1999; Pfau & Quer 2002)

a.	JOHN <b>NOT</b> LEARN ASL <b>NEVER</b>	
	'John will not ever learn ASL.'	
	<u>hs</u>	
b.	INDEX <sub>1</sub> SMOKE <b>NOT NEVER</b>	
	'I have never smoked.'	

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### Form of the Non-manual

- In SLs of the Eastern Mediterranean, a **backwards head tilt** is attested in addition to a headshake
- Turkish SL: non-manual is synchronized with manual negator

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### Turkish Sign Language



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### Typological Comparison

	DGS	LSC	ASL	LIS	TfD	NGT
(i) constituent order	SOV	SOV	SVO	SOV	SOV	SOV
(ii) manual dominant?	-	-	-	+	+	-
(iii) NOT clause-final?	+	+	+/-	+	+	+/-
(iv) <i>hs</i> only on NOT?	-	+	+	+	+	?
(v) <i>hs</i> only on predicate (in the absence of NOT)?	+	+	-	-	-	+
(vi) <i>hs</i> spread onto nom.subj.?	-	-	+/-	-	-	-
(vii) Negative Concord?	-	+	+	-	+	+

- No two SLs are exactly the same

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### Other Possible Types?

- Is the two-way distinction established in the literature exhaustive?
- What other types might in principle exist?
- Two parameters:

(i) obligatory presence of NEG	+	-	+	-
(ii) optional spreading of <i>hs</i>	-	+	+	-
	LIS	DGS	???	???

### Manual & Non-manual Marking

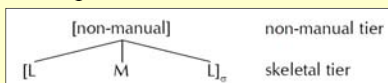
- Even in manual dominant sign languages, the non-manual seems to be obligatory
- Are there manual *only* sign languages? (Kata Kolok (Bali)? → Marsaja 2008)
- Are there non-manual *only* sign languages?
- Maybe diachronic development from one type into another (Pfau 2015)?

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### Part V: Cross-modal typology

### Manual Dominant SLs

- In manual dominant SLs, negation is expressed by (clause-final) particle, which is lexically specified for non-manual marker (NMM)
- NMMs are suprasegmental – they associate with skeletal positions: locations & movements



- NMMs behave like tone in spoken languages (Pfau 2016b)

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### Manual Dominant SLs

- Compare HKSL (a) with Musgu (b) (Chadic, Cameroon; Dryer 2005)

a.	INDEX <sub>3</sub>	HAVE	MONEY	<sup>—<i>hs</i></sup> NOT	[HKSL]
	'It is not true that he has money.'				
b.	à	sədā	cécébè	pāy	[Musgu]
	3SG.M	know	jackal	NEG	
	'He didn't see the jackal.'				

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### Non-manual Dominant SLs

- Same is true for non-manual dominant SL like DGS, but in addition, *hs* functions as a featural affix (Akinlabi 1996) which attaches to the verb
- Consequently, the verb is always accompanied by headshake
- That is, a non-manual dominant SL like DGS resembles French in that it combines a negative particle and a negative affix

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### Non-manual Dominant SLs

- Compare DGS (a) with Cuiba (b) (Guahiban, Venezuela; Miestamo 2005) → split negation

a.	WOMAN FLOWER BUY	<sup>-hs</sup> ( <sub>-hs</sub> )	[DGS]	
	'The woman does not buy a flower.'			
b.	wajjan-be	jopa	apänchi-yo-be.	[Cuiba]
	I.INCL-DU	NEG	drink.I.INCL-NEG-DU	
	'We two do not drink.'			

- Suprasegmental negation in Mbembe (Niger-Congo, Nigeria; Dahl 2011)

*mɔ-tá* ('he will go') → *mɔ̃-tá* ('he won't go')

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### Negation in Ógrû

a.	Kirí	ò	búkù	òkókò	
	Kéré	ASP	ask.for.RES	banana	
	'Kéré has asked for the banana.'				
b.	Kirí	ó	búkù	mú	òkókò
	Kéré	ASP.NEG	ask.for.RES	NEG	banana
	'Kéré has not asked for the banana.'				
c.	Kirí	à	pá	òkókò	
	Kéré	ASP	buy.RES	banana	
	'Kéré has bought bananas.'				
d.	Kirí	á	pá	òkókò	
	Kéré	ASP.NEG	buy.RES	banana	
	'Kéré has not bought bananas.'				

(Ivory Coast; Mboua 1999)

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### Spreading

- Spreading of headshake is an instance of suprasegmental spreading
- Cf. external tone sandhi, e.g. progressive H-spreading in Tsonga (South Africa)

xikóká (L-L-L)	→	vá	příná	xikóká (H-H-L)
old.woman		they	help	old.woman
		'They help the old woman.'		
nhwányàná (L-L-L)	→	ú	rhándzá	nhwányàná (H-H-L)
girl		he	likes	girl
		'He likes the girl.'		

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### Spreading

- In DGS, spreading must target entire constituents; non-pronominal subjects are usually outside the spreading domain

		-hs	
POSS <sub>1</sub>	BROTHER	MAN	INDEX <sub>3</sub> 1SEE <sub>3</sub>
'My brother didn't see the man.'			
[POSS <sub>1</sub>	BROTHER]	[MAN	INDEX <sub>3</sub> [SEE + [hs] <sub>u</sub> NEG]
[ML	MLML]	[LML	ML LML] <sub>PhP</sub>

- What is the relevant spreading domain?

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Typological & Formal Approaches to SLs – Moscow, April 2018

## Lecture 2: Sign Language Negation – Formal Approaches

Roland Pfau



### Recapitulation

	DGS	LSC	ASL	LIS	TİD	NGT
(i) constituent order	SOV	SOV	SVO	SOV	SOV	SOV
(ii) manual dominant?	-	-	-	+	+	-
(iii) NOT clause-final?	+	+	+/-	+	+	+/-
(iv) /s only on NOT?	-	+	+	+	+	?
(v) /s only on predicate (in the absence of NOT)?	+	+	-	-	-	+
(vi) /s spread onto nom.subj.?	-	-	+/-	-	-	-
(vii) Negative Concord?	-	+	+	-	+	+

- Manual vs. non-manual dominant
- Spreading? Negative Concord?

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### Overview

- I. The negative phrase
- II. DGS: A strict NC language
- III. TİD: A non-strict NC language
- IV. LIS: A Double Negation language?
- V. (NGT: A corpus-based study)

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### Part I:

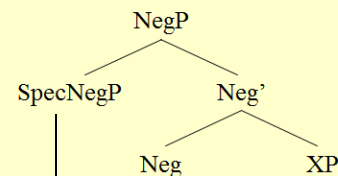
#### The negative phrase

### Syntactic Accounts of Negation

- Functional categories, just like lexical categories, project phrases (XPs)
- Negative head (Neg<sup>o</sup>) projects a negative phrase (NegP) (Pollock 1989; Haegeman 1995)
- The head and/or the specifier of NegP may be occupied by negative elements

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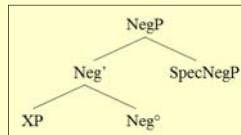
### The Negative Phrase



- English: **not**      **Ø**      → I do **not** know
- Turkish: **Ø**      **-mV**      → bil-**mi**-yor-um
- French: **pas**      **ne**      → Je **ne** sais **pas** <sub>6</sub>

### The Negative Phrase

- Obviously, further operations apply; e.g. movement of V to Neg in Turkish, and further up in French.
- Also, structure may be the mirror image:
- [To be revised: Zeijlstra (2004): not all languages project NegP]



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### Brainstorm

- Can this scheme be applied to sign languages?
- Can it capture the difference between manual dominant and non-manual dominant sign languages?

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### Part II:

German Sign Language: A strict Negative Concord language

### Negative Elements

(Zeijlstra 2004, 2008)

- Distinction between negative affixes, negative particles, and negative adverbs
- Negative affixes and particles are X<sup>0</sup>-elements → negative phrase (NegP) is projected
- In languages in which negation is realized only by negative adverbs, NegP is not projected

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### Negative Concord (NC)

- According to Zeijlstra, all languages that have a negative marker X<sup>0</sup> are NC languages (e.g. French (a), Czech (b), Turkish)

a.	Pierre	ne	vient	pas	ce soir
	Pierre	NEG	come.3SG	NEG	this evening
	'Pierre doesn't come tonight.'				
b.	Milan	nevidi	nikoho		
	Milan	NEG.sees	n-body		
	'Milan doesn't see anybody.'				

- Combination of X<sup>0</sup> & adverb (a) or of X<sup>0</sup> and n-word (b) obligatory → **Strict NC languages**,<sub>11</sub>

### (Un)Interpretable Features

- NC is an Agree relation between a negative operator carrying [iNEG] and one or more elements carrying [uNEG]
- In Strict NC languages, the negative marker X<sup>0</sup> carries a feature [uNEG] (Zeijlstra 2004, 2008)
- Following Laka (1990) and Giannakidou (2000), Zeijlstra argues that n-words in NC languages are non-negative indefinites, i.e. they are NPIs that are licensed by an overt or covert negation

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### German Sign Language

- Hs may not co-occur with NOT only
- Headshake may co-occur with verb only

( ) \_\_\_\_\_ hs

a. MOTHER FLOWER BUY NOT  
'Mother does not buy a flower.'

\_\_\_\_\_ hs

b. \*MOTHER FLOWER BUY NOT  
'Mother does not buy a flower.'

( ) \_\_\_\_\_ hs

c. MOTHER FLOWER BUY  
'Mother does not buy a flower.'

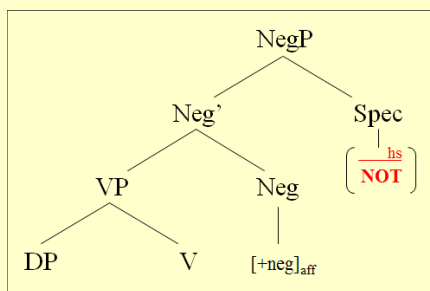
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### NegP in DGS

- DGS has split negation: optional adverb & affix
  - The manual negator occupies SpecNegP; this sign is lexically specified for a headshake (evidence from WHY-test; Merchant 2001)
  - The headshake is a non-manual affix in Neg°, which triggers V-to-Neg movement (Pfau 2002)
- DGS is a **strict NC** language

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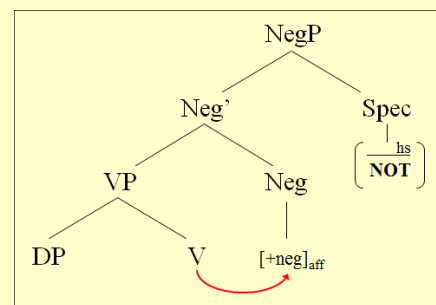
### Structure for DGS



→ manual negator occupies SpecNegP; lexically specified for headshake

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### Headshake on Verb only



→ therefore, verb **must** move to Neg to pick up the affix

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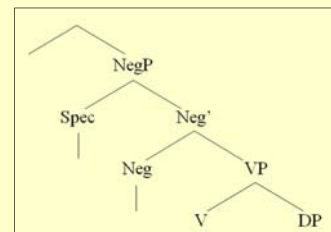
### Distribution of Elements ...

- ... explains why verb must be accompanied by headshake in DGS
- ... explains why Negative Concord (involving two manual elements) is not attested in DGS
- Alternative antisymmetric structure?

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### Alternative Structure

- V-to-Neg movement; headshake attaches
- V must move further up, as it precedes NOT
- Object must move up
- Spreading facts are difficult to account for



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### Negative Concord in DGS

- Consequently, DGS is a **Strict NC** language:
  - the headshake in X<sup>0</sup> carries [uNEG];
  - the optional negative adverb carries [iNEG]
  - n-words are non-neg. indefinites and carry [uNEG]
- Headshake always accompanies n-words (a), but negative adverbial cannot combine with n-word (b)

a. MOTHER <sup>hs</sup>NOTHING BUY  
 'My mother did not buy anything.'

b. \*MOTHER NOTHING BUY NOT <sup>hs</sup>  
 'My mother did not buy anything.'

### (Un)Interpretable Features

- Thus, in DGS (as e.g. in Czech), it is an abstract negative operator carrying [iNEG] that is responsible for semantic negation; this operator c-commands the highest instance of [uNEG]

a. [TP SUBJECT [NegP [vP N-WORD<sub>[uNEG]</sub> tv ] [Neg' V+hs<sub>[uNEG]</sub> ] Op<sub>-[iNEG]</sub> ] ]  
 b. [TP SUBJECT [NegP [vP OBJECT tv ] [Neg' V+hs<sub>[uNEG]</sub> ] NOT<sub>[iNEG]</sub> ] ]

- Sentences (ab) only contain one negation (they do not exemplify Double Negation)

a. MOTHER FLOWER BUY NOT <sup>hs</sup>  
 'My mother did not buy a flower.'

b. MOTHER NOTHING BUY <sup>hs</sup>  
 'My mother did not buy anything.'

### Evidence for [iNEG] Operator

- Scope of quantifying DP: quantifier dominates negative marker, but is outscoped by negation; cf. DGS (a) with Czech (b) (Zejlstra 2008)

a. POSS<sub>1</sub> BROTHER MUCH EAT <sup>hs</sup>  
 -> much: 'My brother hasn't eaten much.'  
 \*much > -: 'There is much that my brother doesn't eat.'

b. Milan moc nejedl  
 Milan much NEG.eat.PERF  
 -> much: 'Milan hasn't eaten much.'  
 \*much > -: 'There is much that Milan doesn't eat.'

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### Non-strict NC Languages

- In Non-strict NC languages, NC between Neg and n-word is not always observed; e.g. Italian

a. Gianni **non** ha telefonato a **nessuno**  
 Gianni NEG have.3SG called to n-body  
 'Gianni didn't call anybody.'

b. **Nessuno** (\*non) ha telefonato  
 n-body NEG have.3SG called  
 'Nobody called.'

- In Non-strict NC languages, the negative marker X<sup>0</sup> carries an interpretable feature [iNEG]

[TP Subject [NegP **non**<sub>[iNEG]</sub> Verb [vP a n-word<sub>[uNEG]</sub> ] ] ]

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### Part III:

Turkish Sign Language: A non-strict Negative Concord language

### Turkish Sign Language (TİD)

- According to Zeshan (2006b), manual dominant SL; sentence-final negative particle lexically specified for non-manual

a. INDEX<sub>1</sub> BANANA THROW<sub>front</sub> <sup>bht</sup>NOT  
 'I did not throw the banana to the front.'

b. CHILD+ BEAT <sup>hs</sup>NO-NO  
 '(I) don't beat my children.'

(Gökgöz 2011; Zeshan 2006b)

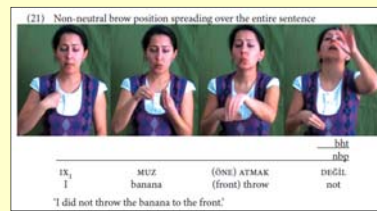
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### Turkish Sign Language

- In contrast, Gökgöz (2011) claims that TİD is not strictly manual dominant
- Hs and bht are lexical markers associated with negative signs; they do not spread
- The relevant syntactic non-manual marker is a ‘non-neutral brow position’ (‘nbp’), which commonly spreads over the entire clause
- Still, TİD is manual dominant in that all clauses contain a manual negator

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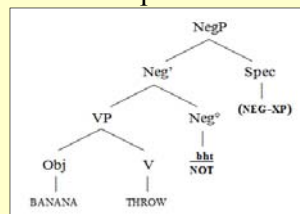
### Turkish Sign Language



### Turkish Sign Language

- Negative marker is lexically specified for non-manual and sits in Neg°
- ‘nbp’ also occupies Neg°; it accompanies either only the manual NEG or spreads over entire sentence
- In addition, ‘nbp’ spreads onto neg. XP in SpecNegP

(Gökgöz 2011)



### NC in TİD

- NC between two manual negative elements is possible, but not obligatory
  - NC between negative particle and n-word (a);
  - NC between particle and negative adverbial (b)

a. <sup>hs</sup> NONE(2) APPEAR NO-NO  
‘Nobody appeared.’

b. INDEX<sub>1</sub> LOOK-AT<sub>3</sub> NOT NO  
‘I didn't look at him.’

(Gökgöz 2011; Zeshan 2006b)

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### NC in TİD

- The negative particle carries an interpretable negative feature [iNEG] and realizes the negative operator – just as in Italian
- (Optional) manual negative elements occupying SpecNegP (a), as well as n-words (b) carry an uninterpretable feature [uNEG].

- a. [TP SUBJECT [NegP [VP OBJECT V] [Neg° NOT/OP<sub>-[iNEG]</sub>] (NEG<sub>[uNEG]</sub>)]]
- b. [TP N-WORD<sub>[uNEG]</sub> [NegP [VP OBJECT V] [Neg° NOT<sub>[iNEG]</sub>]]]

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### Other Possible Types?

- Is the two-way distinction established in the literature exhaustive?
- What other types might in principle exist?
- Two parameters:
 

(i) obligatory presence of NEG	+	-	+	-
(ii) optional spreading of non-manual	-	+	+	-
	LIS	DGS	TİD	???

### Part IV:

#### Italian Sign Language: A Double Negation language?

### Double Negation

- Languages in which the combination of two negative elements yields an affirmative sentence are **Double Negation (DN)** languages

Ich	hab-e	nicht	niemand	angerufen
I	have-1SG	NEG	nobody	called

'I didn't call nobody (= I called somebody).'

(German)

- According to Zeijlstra (2008), DN languages do not have formal negative features, i.e. negative elements are purely semantic and do not project

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### Speculations on a DN SL

- A DN SL can only be a manual dominant SL
- The combination of two negative elements should yield an affirmative reading
- This is actually what Geraci (2005) describes for LIS – albeit with an uncertain example

- |    |   |                               |               |               |            |
|----|---|-------------------------------|---------------|---------------|------------|
| a. | * | <b>NOBODY</b>                 | CONTRACT      | SIGN          | <b>NON</b> |
|    |   | 'Nobody signed the contract.' |               |               |            |
| b. | ? | SMOKE                         | <b>CANNOT</b> | <b>NOBODY</b> |            |
|    |   | 'Everybody must smoke.'       |               |               |            |

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### Speculations on a DN SL

- However, Geraci also provides evidence for the assumption that LIS *does* project a NegP and that the manual negator occupies SpecNegP (while Neg<sup>0</sup> hosts [+neg])
- We must conclude that, to date, no sign language has been described that would unambiguously qualify as a DN language

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### Part V:

#### Sign Language of the Netherlands: A corpus-based study (Oomen & Pfau 2017)

### Methodology

- Analysis of 35 video clips (1½ hrs) from Corpus NGT
- 22 native signers from the Groningen region (14 female, 8 male) in dialogues
- Search for negation on gloss and translation tiers
- Annotation of headshake on newly created tier

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### Annotation

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### Negation in Corpus

- Exclusion of n-words, negative adverbial NEVER, and negative modals ...
- ... but inclusion of non-verbal predicates

Sentence negated by	N	%	total (%)
(i) basic clause negator NOT	47	39.2%	117 (97.5%)
(ii) headshake only	70	58.3%	
(iii) Negative Concord	3	2.5%	3 (2.5%)
<b>TOTAL</b>	<b>120</b>	<b>100%</b>	

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### Results: Constituent Order

Clausal position of NOT	N	%	
(S)-(O)-V-Neg	29	61.7%	→ post-VP
(S)-V-O-Neg	2	4.3%	
(S)-Neg-(O)-V	12	25.5%	→ pre-VP
Other	4	8.5%	

Clauses without NOT	N	%
(S)-(O)-V	56	80%
(S)-V-O	13	18.6%
V-S-O	1	1.4%

(Note: only few clauses with objects)

### Examples

a. \_\_\_\_\_<sup>hs</sup>  
 INDEX<sub>1</sub> POINT UNDERSTAND **NOT**  
 'I don't understand/get the point.'

b. \_\_\_\_\_<sup>hs</sup>  
 HANDICAPPED RECOGNIZE **NOT** INDEX  
 '(They) don't recognize handicapped people there.'

c. \_\_\_\_\_<sup>hs</sup>  
 INDEX<sub>1</sub> SICK **NOT**  
 'I'm not ill.'

d. \_\_\_\_\_<sup>hs</sup>  
 INDEX<sub>1</sub> ACTUALLY **NOT** LEARN  
 'I'm not going to learn (it).'

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### Results: Scope of Headshake

with NOT	S	O	V	Neg
(S)-(O)-V-Neg	26% (5/19)	33% (1/3)	90% (26/29)	100% (29/29)
(S)-Neg-(O)-V	29% (2/7)	100% (1/1)	92% (11/12)	100% (12/12)

without NOT	S	O	V
(S)-(O)-V	31% (12/39)	55% (6/11)	96% (54/56)
(S)-V-O	33% (4/12)	92% (12/13)	100% (13/13)

with *hs*: 16 nom., 4 pron.

with *hs*: 2 nom., 21 pron.

### Results: Scope of Headshake

- All clauses accompanied by headshake
- NOT always accompanied by headshake
- 104/110 verbs (94%) accompanied by *hs*
- Non-pronominal subjects tend not to be accompanied by headshake

\_\_\_\_\_<sup>hs</sup>  
 SPEECH-THERAPY HELP PALM-UP  
 'Speech therapy doesn't help.'

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### Summary

- NGT is non-manual dominant (cf. Coerts 1992)
- Yet, the manual negator is commonly used (contra Van Gijn 2004)
- Most of the data are compatible with (previously established) S-O-V(-Neg) order
- **But:** Neg may also precede VP
- More variation than in previous studies based on elicited data (e.g. DGS, LSC, LIS)

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### Position of NegP

- Position of NegP vis-à-vis TnsP is parameterized (Zanuttini 1997; Pfau 2002 for SL).
- In addition, various positions may be available within a language; e.g. Zanuttini (1997) for Romance.

NegP<sub>1</sub> > TP > NegP<sub>2</sub> > AspP > NegP<sub>3</sub> > AspP > NegP<sub>4</sub> > VP

- Variation in position may be motivated by different scope possibilities of individual negators.

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### Negation in Fongbe

- Fongbe exhibits the preverbal negator *má* which precedes tense (a), as well as the clause-final marker *ǎ* (b) → **no** difference in interpretation (Aboh 2010: 248).

a.	Kòkú	má	ná	xò	àsón	ó
	Koku	NEG	FUT	buy	crab	DET
	'Koku will not buy the crab.'					
b.	Kòkú	ná	xò	àsón	ó	ǎ
	Koku	FUT	buy	crab	DET	NEG
	'Koku will not buy the crab.'					

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### Negation in Santome

- Standardly involves two negative elements: Neg<sub>1</sub> *na* preceding TAM/V and clause-final Neg<sub>2</sub> *fa*.

Ê	na	sê	piska	fa
3SG	NEG	know	fish	NEG
'He can't fish.'				

(Hagemeijer 2007: 174)

- In specific contexts, only Neg<sub>1</sub> or Neg<sub>2</sub> is filled (e.g. lack of Neg<sub>2</sub> in interrogatives, lack of Neg<sub>1</sub> in constituent negation).

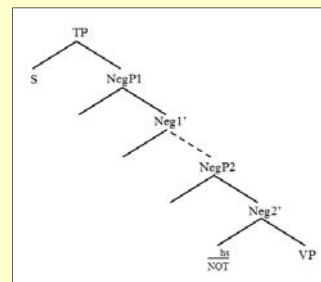
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### Negation in Santome

- Neg<sub>1</sub> and Neg<sub>2</sub> are **not** in a Spec-head relationship (i.e. no split negation as in French); Hagemeijer provides evidence that both are heads.  
→ two NegPs (cf. Aboh 2010 for Gbe languages)
- Structure: NegP<sub>1</sub> > TP > NegP<sub>2</sub> > AspP
- AspP moves to specifier of NegP<sub>2</sub>
- **NGT:** our account is inspired by Hagemeijer's but we further assume Neg-movement, i.e. there is only one manual negator.

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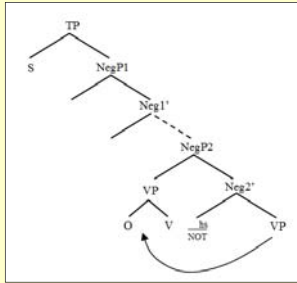
### Structure: Clauses with NOT



- NGT structure contains two NegPs.
- Lower NegP<sub>2</sub> hosts manual negator NOT.

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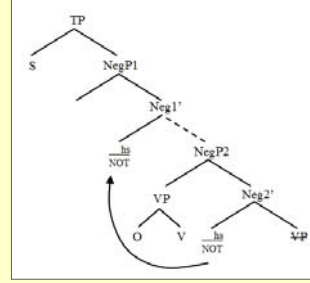
### Structure: VP movement



- VP moves to SpecNegP2 to check negative features.
- Critical positions are freezing positions → movement stops there (Rizzi & Shlonsky 2007).

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### Structure: NOT movement



- Higher NegP1 must be lexicalized.
- This is achieved by movement of NOT to Neg1.
- Structure now contains two copies of NOT.

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### Structure: Spell-out of NOT

- Either copy of NOT may be spelled out:
  - Spell-out of Neg1 → S-Neg-O-V

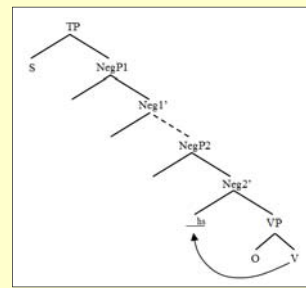
a.	INDEX <sub>1</sub> NOT OPINION HAVE INDEX	b.	INDEX <sub>1</sub> ACTUALLY NOT LEARN
	'I don't have an opinion on that.'		'I'm not going to learn it.'

- Spell-out of Neg2 → S-O-V-Neg

c.	INDEX <sub>1</sub> POINT UNDERSTAND NOT	d.	INDEX <sub>1</sub> BE-SICK NOT
	'[...] I don't get the point.'		'I'm not ill.'

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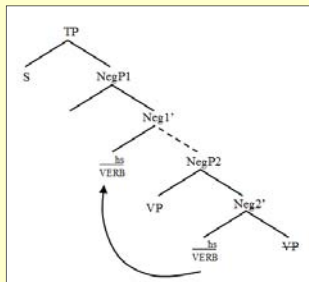
### Structure: Clauses without NOT



- Head of lower NegP2 contains headshake affix (cf. Pfau 2002).
- Affix attracts verb to Neg2.

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### Structure: Neg-to-Neg Movement



- Remnant movement of VP to SpecNegP2.
- Subsequent movement of verb to Neg1.

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### Structure: Spell-out of Verb

- Either copy of the verb may be spelled out:
  - Spell-out of V in Neg1 → S-V-O

a.	INDEX <sub>1</sub> KNOW INDEX	b.	INDEX <sub>1</sub> HAVE SIGN INDEX <sub>1</sub>
	'I don't know that.'		'I don't have a sign for it.'

- Spell-out of V in Neg2 → S-O-V

c.	INDEX <sub>1</sub> EXPERIENCE INDEX <sub>1</sub> HAVE	d.	INDEX <sub>1</sub> INDEX REACT INDEX <sub>1</sub>
	'I don't have any experience.' <sup>1</sup>		'I don't react to it.'

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### Spreading of Headshake

- Based on two observations, we argue that spreading of headshake is prosodically determined:
  - Pronominal subjects are much more likely to be accompanied by headshake; pronominal subjects are clitic heads merged in T.
  - Clause-final pronoun copies and PALM-UP (PU) are commonly accompanied by headshake.

	(i) INDEX		(ii) PU		(iii) INDEX+PU	
	with hs	no hs	with hs	no hs	with hs	no hs
Clauses with NOT	3	1	6	1	0	0
Clauses without NOT	16	1	11	4	7	2

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### Spreading of Headshake

- Post-syntactically, all these elements are part of the prosodic domain containing Neg.

a. BECAUSE INDEX<sub>3</sub> BASIS [ STRONG ENOUGH INDEX<sub>3</sub> ]  
 'Because their basis isn't strong enough.'

b. [ INDEX<sub>1</sub> MAYBE GRASP INDEX<sub>1</sub> ]  
 'Maybe I didn't notice it.'

c. [ FIND TOO BAD INDEX<sub>1</sub> PU ]  
 'I don't find it boring.'

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### Spreading of Headshake: Objects

- If headshake extends over subject, it always also extends over pre-verbal objects, if present.
- 8/15 preverbal objects (O-V-Neg, Neg-O-V, O-V) are accompanied by headshake.
- 12/13 postverbal objects (V-O) are accompanied by headshake (5 of which are pronominal)

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### Conclusion

- Corpus data confirm S-VP(-Neg) as most common order in negated NGT clauses.
- Yet, corpus data also reveal variation w.r.t. placement of Neg (in contrast to previous studies on other SLs).
- We argued that NGT employs a high and a low NegP.
- Both Neg1 and Neg2 need to be lexicalized, be it by means of Neg- or V-movement.
- Only one of the two copies of Neg/V will be spelled out, explaining variation in
  - the placement of Neg;
  - the placement of V vis-à-vis O in clauses without Neg.

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Typological & Formal Approaches to SLs – Moscow, April 2018

## **Lecture 3: Signing Space – Use and Variation**

Roland Pfau



## **Modality and Typology**

- Certain properties of SLs are shaped by the affordances of the visual-gestural modality (Meier 2012)
- Modality effects, e.g. iconicity, use of space, simultaneity, two identical articulators  
→ SLs generally pattern alike in these domains
- Still, SLs differ from each other – and they do so along similar lines as spoken languages do
- SL typology (Zeshan 2008; De Vos & Pfau 2015)

2

## **Overview**

- I. Arbitrary vs. absolute locations
- II. Agreement 1: Directional verbs
- III. Agreement 2: Agreement auxiliaries
- IV. Entity and handle classifiers

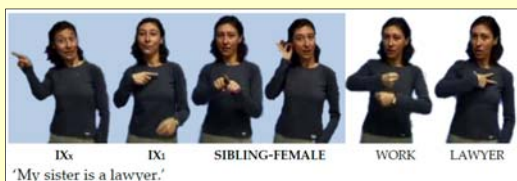
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## **Part I:**

### **Arbitrary vs. absolute locations**

## **Arbitrary Locations**

- All large community sign languages make use of arbitrary locations, which are introduced for non-present referents



(LSE; Costello 2015)

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## **Absolute Locations**

- In addition, pointing to absolute locations is used in all SLs for present referents and geographic landmarks
- Yet, in some village SLs, arbitrary locations are never introduced/used: all pointing is absolute → absolute Frame of Reference
- Kata Kolok (Bali): Pointing for time indication (as community is close to equator) (Marsaja 2008)

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### Yolngu Sign Language (North East Arnhem Land, Australia)



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### Pointing in Yolngu Sign Language

- Characteristics of Yolngu SL: origin, not used in single village
- Example: 'he' = uncle in the north of the island (Bauer 2014)



### Shared Knowledge

- “Direction of a pointing sign is motivated by shared background knowledge of individuals” (de Vos 2012: 197)
- In the case of Kata Kolok and YSL, absolute FoR is also used in the surrounding spoken language



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### Part II:

#### Agreement 1: Directional verbs

### Spoken Language Agreement

- Inherent features of controller are copied onto target within a certain domain
- Agreement paradigms: number of distinctions marked (→ rich / poor / null agreement)
- Subject vs. object agreement: object agreement is more marked
- Grammaticalization: from pronoun to agreement marker

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### Verb Classes

- SL verbs fall into three distinct morphosyntactic classes (Padden 1988):
  - **Plain** verbs: show no agreement (e.g. LIKE)
  - **Agreeing** verbs: agreement with subject and/or object (e.g. VISIT, GIVE, INVITE)
  - [**Spatial** verbs: agreement with locative arguments (e.g. PUT-DOWN, WALK-TO)]

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### Characteristics of Agreeing Verbs

- Agreeing verbs agree with subject and/or object loci by means of movement and/or orientation of palm/fingertips (Meir 2002)
- In most agreement verbs, the movement or orientation is from the subject towards the object locus
- Challenge: backwards agreement, e.g. INVITE, TAKE
- Meir (2002): movement from Source → Goal

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### Typological Peculiarities

(Lillo-Martin & Meier 2011; Costello 2015)

- The agreement systems of different SLs are strikingly similar and make use of sign space
- Two groups of verbs within a single language (combination of rich and null agreement); the role of phonological and semantic factors
- Subject agreement appears to be more marked than object agreement:
  - subject agreement is optional
  - some verbs agree only with object

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### Typological Peculiarities

- There are in principle infinitely many realizations for agreement with a *non-first* referent (→ listability problem; Liddell 2003)
- The feature that is copied is not inherent to the controller; cf. literal alliterative agreement in Bainouk (Cameroon; Aronoff et al. 2005)

PREFIXED NOUN	CLASS	AGREEMENT ENVIRONMENTS
gu-sól 'tunic'	7/8	gu-sól gu-fer 'white tunic'
		7-tunic 7-white
UNPREFIXED NOUN	CLASS	
kata:ma 'river'	0/0	ka:ma-ã ka:nak-ã 'two rivers'
		river-PL CV-two-PL

### Verbs in Inuit Sign Language (IUR)

- Non-present referents can be localized in space, but such arbitrary loci are only rarely used (Schuit, Baker & Pfau 2011; Schuit 2013)
- Verbs can be modified but only for the object → typologically unusual pattern

FATHER INDEX<sub>3a</sub> SHOOT<sup>++</sup> INDEX<sub>3b</sub> HEAR<sub>3a</sub><sup>++</sup>  
 'My dad was shooting, and they heard them.'

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### Absolute Locations in IUR

- Verbs (just like pointing signs) often move towards absolute locations; i.e. the movement depends on the position of the signer
- Example signed in Rankin Inlet, which is far away (1.500 km) from Winnipeg

NEXT-DAY NEXT-DAY FEMALE PERSON WpgPLANE-FLY<sub>here</sub> HERE  
 'In two days, my daughter comes here by plane from Winnipeg.'

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### Agreement with Absolute Location in Yolngu SL

- In YSL, verbs can be spatially modified – but only to agree with absolute locations



(same referent (= uncle in the north of the island) as on previous slide)

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### Agreement in Yolngu SL

- Modification is mostly observed with locative verbs (e.g. GO-TO); verb GURRUPA ('give') is not modified



DARRA ISG      MARRTI walk      DIR-GO-THERE<sub>3a</sub> go-over-there (airport)



DARRA YAPA GURRUPA RRUPIYA  
 ISG sister give money  
 'My sister gave me ten dollars.'

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### Agreement in Kata Kolok

- Verbs in KK are never spatially modified – be it for arbitrary or absolute location (Marsaja 2008)
- The only occasional exception is the verb BAANG ('give')



SHARA  
 Marsaja 2008, Shara Press

### Part III:

#### Agreement 2: Agreement auxiliaries

### Agreement Auxiliaries

(Steinbach & Pfau 2007; Sapountzaki 2012)

- Some SLs employ dedicated auxiliaries in the context of plain verbs
- These auxiliaries are **semantically empty**; they only express subj/obj agreement
- Agreement auxiliaries are **grammaticalized**
  - from pronouns (e.g. Taiwan SL, IPSL)
  - from verbs (e.g. GO-TO in NGT, MEET in Taiwan SL, GIVE in Greek SL)
  - noun PERSON in DGS and LSC

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### Agreement Auxiliary AUX in LSC



IX<sub>i</sub> SEEM WOMAN IX<sub>3a</sub> AUX<sub>3b</sub> FORGET  
 'It seems to me that the woman  
 has forgotten him/her'

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### Agreement Auxiliary PAM in DGS



A-N-N-A INDEX<sub>3a</sub> POSS<sub>3a</sub> PARTNER TRUST<sub>3a</sub> PAM<sub>3b</sub>  
 'Anna trusts her husband.'

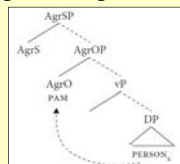
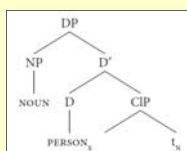
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### Grammaticalization of PERSON

(Pfau & Steinbach 2013)

- The noun PERSON may be localized in space; also when used as DP-internal agentive marker (e.g. PAINT<sup>^</sup>PERSON<sub>x</sub> ‘painter’)
- Once equipped with spatial features, PERSON<sub>x</sub> may exit the DP → merged in AgrO as PAM



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### Part IV:

### Entity and Handle classifiers

### Classifiers

(Allan 1977; Aikhenvald 2000)

- Numeral CL, noun CL, and predicate CL
- Predicate classifiers: bound morphemes that reflect/specify certain semantic characteristics of an argument; e.g. Cherokee (Aikhenvald 2000)

a.	Áma	gá- <b>nèéh</b> -nèé'a
	water	3.SG.S/3.SG.O-CL(liquid)-give
		'She is giving him water.'
b.	Áhnáwo	gá- <b>nvv</b> -nèé'a
	shirt	3.SG.S/3.SG.O-CL(flexible)-give
		'She is giving him a shirt.'

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### Sign Language Classifiers – Types

(Benedicto & Brentari 2004)

- Handshapes that combine with verbs of movement and location → argument structure alternations
- **ENTITY classifiers:** classify non-agentive subjects; refer directly to an entity, the handshape *is* the entity
- **[BODYPART classifiers:** classify agentive subjects; refer to part of an entity]
- **HANDLE classifiers:** classify objects; refer indirectly to an entity, the handshape shows how an entity is handled or manipulated

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### Entity Classifiers



CL:Person

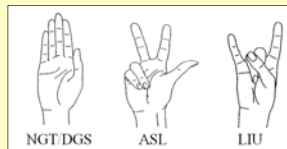
CL:Tree

CL:Car (& CL:Tree)

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### Entity Classifiers - Variation

- Differences in handshape, e.g. vehicle CL



- Quantitative differences; e.g. NGT (Zwitserslood 2003) vs. IPSL (Zeshan 2003)
- Qualitative difference: no *Entity* CL in AdaSL → generic directionals (Nyst 2007)

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### Classifiers in Adamorobe SL

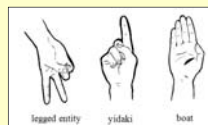
- Use of Handle CL is attested but appears to be infrequent
- No use of Entity CL; instead use of generic directionals
- Other classificatory strategy: measure stick signs



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### Classifiers in Yolngu SL & Inuit SL

- Only three Entity CL identified in **Yolngu SL**; Handle CL occurred rarely in the data (Bauer 2014)



- **Inuit SL** has a more elaborate classifier system but 1-hand is never used for persons



BE-LOCATED:EC<sub>1</sub>-ON-EC<sub>2</sub>  
"The stick was on top of the hole."

### Handle Classifiers

- *Degree of Grammaticalization*: IPSL system appears less grammaticalized / systematic → considerable variation in CL (Zeshan 2003)
- NGT and DGS: clear paradigm, use of CL is obligatory → classification is a type of agreement (Glück & Pfau 1998; Zwitserlood 2003)
- Feature combinations are spelled out by dedicated morphemes

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### A Featural Approach

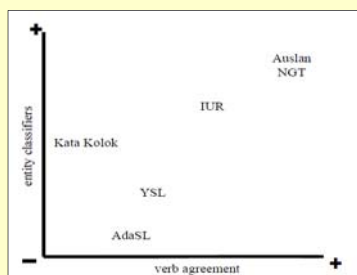
	straight	small	flat
	+	-	-
	-	-	-
	+	-	-
	-	-	+
	+	-	+
	+	+	-
	+	+	-

(Zwitserlood 2003)

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### Agreement & Classification

– on a Continuum –



(Schuit 2013)

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# Roland Pfau

## – Lecture Series “Typological and Formal Approaches to Sign Languages: Negation and the Grammar of Space” –

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