

# The development of person and agreement in Nicaraguan Sign Language

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# Introduction

- ▶ Spatial modulation
- ▶ Space used for person and locative referents in many SLs
  - ▶ Padden (1983) tri-partite classification

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- ▶ Space used for person and locative referents in many SLs
  - ▶ Padden (1983) tri-partite classification
- ▶ Body as anchor in space
  1. First/non-first person distinction (Meier 1990, Engberg-Pedersen 1993)
  2. Role shift

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- ▶ Functions of space of great theoretical interest:
  - ▶ Agreement analyses (e.g. Lillo-Martin & Meier 2011 for syntactic; Meir 2002 for semantic)
  - ▶ Indicating analysis (Liddell 2000, 2003, Schembri et al. 2018)

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- ▶ Take a step back: **system develops over time** (e.g. Senghas 2003, 2010, Padden et al. 2010, Kocab et al. 2015)
- ▶ How do spatial modulation systems emerge?

# Pathways to development

1. Pointing gestures develop, incorporated into verb (Schembri et al. 2018)
2. Grammaticalization deictic pointing gesture to agreement marker (Coppola & Senghas 2010, Pfau & Steinback 2006)
  - ▶ point > locative > demonstrative > personal > agr, aux
3. Reanalysis, directional morpheme (Meir 2016)
  - ▶ plain verb > reanalyze endpoint > reanalyze initial

# Nicaraguan Sign Language (NSL): An emergent case

- ▶ Emerged as school opened in 1970s (Senghas 2003, Polich 2005)
- ▶ Language community then language model
  - ▶ Adult homesigners (HS) [1*F*, 3*M*]
  - ▶ Cohort 1 signers (NSL1) [2*F*, 2*M*]
  - ▶ Cohort 2 signers (NSL2) [2*F*, 3*M*]
  - ▶ Cohort 3 signers (NSL3) [1*F*, 6*M*]



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- ▶ Variation in use of devices leads to patterned stages in development

# Procedure

- ▶ Elicited video responses
- ▶ 'Describe what you see'
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  2. Animate-Inanimate
  3. Reciprocal



# Coding

Nominal marked as spatialized if:

- ▶ set up in a specific location
- ▶ could be introduced by lexical item, point, or positional

Verb marked as modulating if:

- ▶ direction from locus to locus

# Animate-Animate

1. Do participants set up and modulate responses in space?
2. How do participants modulate responses in space?



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1. Do participants set up and modulate responses in space?
2. How do participants modulate responses in space?
  - ▶ Participants: 4 HS, 4 NSL1, 5 NSL2, 7 NSL3

# Three distinct form patterns

	<b>1</b>
An-An	<ul style="list-style-type: none"><li>· Little set-up</li><li>· No role shift</li><li>· 2 verbs</li><li>· Path</li></ul> (internal move.)

Response: woman punches man on arm (homesign)

Figure: WOMAN STAND MAN PREP PUNCH-1 PUNCH-2

# Three distinct form patterns

	1	2
An-An	<ul style="list-style-type: none"><li>· Little set-up</li><li>· No role shift</li><li>· 2 verbs</li><li>· Path (internal move.)</li></ul>	<ul style="list-style-type: none"><li>· Body-anchored axis</li><li>· No role shift</li><li>· 2 verbs</li><li>· Conflict 2V</li></ul>

Response: woman punches man on arm (NSL1)

Figure: IX:<sub>b</sub> MAN<sub>b</sub> IX:self<sub>a</sub> WOMAN<sub>a</sub> a PUNCH-1<sub>b</sub> PUNCH-2

# Three distinct form patterns

	1	2	3
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Response: woman punches man on arm (NSL3)

Figure:  $MAN_b$   $WOMAN_a$   $RS(a)_a$  PUNCH-1 $_b$   $RS(a)_a$  PUNCH-2 $_b$

# Categorization based on devices

<b>Group</b>	<b>Total</b>	<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>
HS	53	48	5	-
NSL1	53	16	37	1
NSL2	67	6	47	14
NSL3	59	4	11	43

Table: Number of utterances per participant group categorized by stage. Shading indicates a dominant pattern.



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## Results: Animate-Inanimate

<b>Group</b>	<b>Total</b>	<b>No set-up</b>	<b>Object</b>	<b>Subject, Object</b>
HS	22	6	16	-
NSL1	28	4	9	15
NSL2	29	2	8	19
NSL3	33	6	13	14

Table: Number of utterances per participant group which set up and modulate for inanimate object in space.

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# Devices used Animate-Inanimate

- ▶ Single verb constructions
- ▶ Midsagittal axis for loci and movement
- ▶ Point-to-self on subject

# Animate-Animate vs. Animate-Inanimate form

acting on inanimate    acting on animate

Stage 2



Stage 3



Figure: Comparison of verb based on animacy of object for TICKLE

# Stages based on devices

	<b>Stage 1</b>	<b>Stage 2</b>	<b>Stage 3</b>
An-An	<ul style="list-style-type: none"><li>· Little set-up</li><li>· No role shift</li><li>· 2 verbs</li><li>· Path (internal move.)</li></ul>	<ul style="list-style-type: none"><li>· Body-anchored axis</li><li>· No role shift</li><li>· 2 verbs</li><li>· Conflict 2V</li></ul>	<ul style="list-style-type: none"><li>· Unrestricted</li><li>· Role shift</li><li>· 2 verbs</li><li>· No conflict 2V</li></ul>
An-In	<ul style="list-style-type: none"><li>· Set-up (O)</li><li>· Midsag. axis</li></ul>	<ul style="list-style-type: none"><li>· Set-up (S,O)</li><li>· Overlap axes</li></ul>	<ul style="list-style-type: none"><li>· Set-up (S, O)</li><li>· Distinct axes</li></ul>

# Reciprocals

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  - ▶ Participants: 2 HS, 4 NSL1, 4 NSL2, 4 NSL3

## Reciprocal results: Devices used

Group	Total	No space	Mismatch	Match (body)	Match (unrestr.)
HS	22	16	2	2	2
NSL1	42	18	3	14	7
NSL2	36	6	5	14	12
NSL3	43		2	9	32

Table: Number of utterances per participant group which either match or mismatch for axis of referents and axis of movement

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An-In	<ul style="list-style-type: none"><li>· Set-up, mod</li><li>· Midsag. axis</li></ul>	<ul style="list-style-type: none"><li>· Set-up, mod</li><li>· Overlap axes</li></ul>	<ul style="list-style-type: none"><li>· Set-up, mod</li><li>· Distinct axes</li></ul>
Recip.	<ul style="list-style-type: none"><li>· Little set-up</li><li>· Symmetrical (internal move.)</li></ul>	<ul style="list-style-type: none"><li>· Both axes</li><li>· Little mismatch</li></ul>	<ul style="list-style-type: none"><li>· Unrestricted</li><li>· Min. mismatch</li></ul>

# Summing up

- ▶ Stage 1 (HS): signs move through space but do not mark person referents; inanimate set up in space
- ▶ Stage 2 (NSL1, NSL2): Similar devices used across animate and inanimate; body-anchored axis mostly maintained; see reference-tracking function
- ▶ Stage 3 (NSL2, NSL3): Conventionalization of unrestricted axis, additional argument-marking devices layer onto directional signs

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- ▶ Between Stage 2 and 3, body moves from fixed participants to acting as part of system (see Padden et al. 2010)
- ▶ Early evidence looks to support re-analysis (Meir 2016)
- ▶ Much more work is needed!

