

Gestural analogues & the origins of signs in San Juan Quiahije Chatino Sign Language





Field site

*Gestural
Analogues*

2 Relevant Studies



Field Site: San Juan Quiahije



Field Site: San Juan Quiahije



San Juan Quiahije Municipality

- Two villages
- Combined pop. ~3600 (INEGI, 2015)

Spoken languages

- SJQ Chatino
(E. Cruz, 2011; H. Cruz, 2014)
- Mexican Spanish

Field Site: San Juan Quiahije

11 deaf people — 0.3% of the population

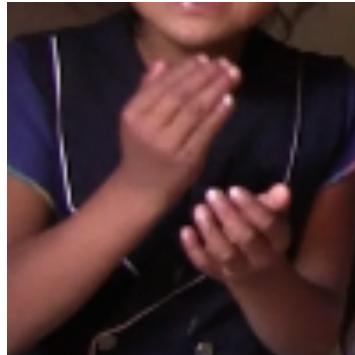
- San Juan Quiahije Chatino Sign Language: six emerging family SLs (Hou, 2016)



Gestural Analogues: manual forms shared by deaf and hearing signers in the same communicative ecology

What are the form-meaning mappings of hearing non-signers (majority of population)?

Do signers adapt the form-meaning mappings as they create a fully visual-manual language?





Study 1: Negation in SJQCSL

(Mesh & Hou, *forthcoming*)

5 Gestural Analogues with Negative Meanings



Negative Analogues: Dataset



Recordings of spontaneous talk:

- 5:20 of signers, 11:00 of speakers

A survey for speakers about the functions of 14 gestures

Negative Analogues: Coding



Identification of the function of each negative emblem:
denial, rejection, non-existence, negative imperatives

(Cf. Bloom, 1970)

Negative Analogues: Results

WAG



Negative Analogues: Results

WAG

Signers and
speakers alike
use the WAG
form for *negative*
imperatives and
denial

- 1 *chaq-C niqan-J ndywin-E ne-C jan-A qan-G*
 'I'm speaking Chatino since'
- 2 [NEG:WAG-1
 [...*ja-A ntyka-E qiyani-I chaq-C xlyqa*]
 [...] 'I can't speak Spanish']

Negative Analogues: Results

WAG

Signers and speakers alike use the WAG form for *negative imperatives* and *denial*



Negative Analogues: Results

WAG

Signers and
speakers alike
use the WAG
form for *negative
imperatives* and
denial



Negative Analogues: Results

TWIST

...with 2 handshape variants



Negative Analogues: Results

TWIST

Signers and
speakers alike
use the TWIST
form to convey
non-existence

- 1 *qan-E ngya-E chaq-C qa-J*
'it's how to say,'
[NEG:TWIST-5]
- 2 *[ja-A la-J qa-J squy-J ran-C qi-H ja-A la-J squy-J ran-C...]*
[*there isn't any, there isn't any anymore...*]]

Negative Analogues: Results

TWIST

Signers and speakers alike use the TWIST form to convey *non-existence*



Negative Analogues: Results

TWIST

Deaf signers
alone use twist
with a function
of *denial*



Negative Analogues: Results

PALM-DOWN



Negative Analogues: Results

PALM-DOWN

Signers and speakers alike use the PALM-DOWN form for *denial*

- | | |
|---|--|
| 1 | [PALM-DOWN] |
| | <i>chaq-C non-A ndya-J [gra-J ba-E no-C chaq-C tyqi-C ti-C nten-B]</i>
‘Whenever [a person’s voice is recorded’] |
| 2 | <i>jan-C ska-A la-E niyan-J ran-C</i>
‘it’s different...’ |

Negative Analogues: Results

PALM-DOWN

Signers and
speakers alike
use the PALM-
DOWN form
for *denial*



Negative Analogues: Results

PALM-UP

...with 2 handshape variants



Negative Analogues: Results

PALM-UP

1 *ti-E squy-E no-A ti-C sqne-E ndywiq-A yu-A qi-H non-A como-A...* ‘there
Signers and still is (a footpath), from before, they say,’
speakers alike use
the PA₂L M-UP form
[NEG:PALM-UP]
for *refusal* and to
assert that they *lack*
knowledge *ha-E chaq-C ndywiq-J non-A nga-J ne-l tla-A ti-A styqan-J chaq-C ja-C ne-l*
 ‘one hears it said by the elders, one supposes.’

Negative Analogues: Results

PALM-UP

Signers and speakers alike use the PALM-UP form for *refusal* and to assert that they *lack knowledge*



Negative Analogues: Results

PALM-UP

Signers and speakers alike use the PALM-UP form for *refusal* and to assert that they *lack knowledge*



Negative Analogues: Results

PALM-UP

Deaf signers alone use PALM-UP near the head to negate the (non-overt) predicate, *know*



Negative Analogues: Results

DEAD



Negative Analogues: Results

DEAD

Deaf signers
alone use the
DEAD form for
intensive *denial*



Negative Analogues: Summary

- Clear overlap of form-meaning mappings between speakers & signers
 - Overlap facilitates communication between deaf and hearing people in a language ecology with highly shared context
- Deaf signers however adapt two of the negatives, DEAD and PALM-UP, broadening the meaning of these gestural analogues



Study 2: Indicating Practices in SJQCSL

(Mesh 2017a, 2017b, 2018)

Indicating Expressions



- direct the addressee's attention to a delimited area of space
- **in gesture or sign**, by extending or tracing an articulator in the direction of a focused area

Indicating Practices in San Juan Quiahije: Initial Observations

Two clear extremes for indicating gestures

- **Promimal:** low, unextended arm, 1-HS
- **Distal:** high, extended arm, B-HS



Indicating Practices in San Juan Quiahije: Initial Observations



Indicating Practices: **Hypothesis**

Formation features of indicating gestures systematically covary with the **distance** of the indicated target

- a. **Elbow Height:** increased distance -> increased height
- b. **Arm Extension:** increased distance -> greater extension
- c. **Handshape:** increased distance - > increased use of open hand

Indicating Practices: Task



Local environment interviews (Kita 2001)

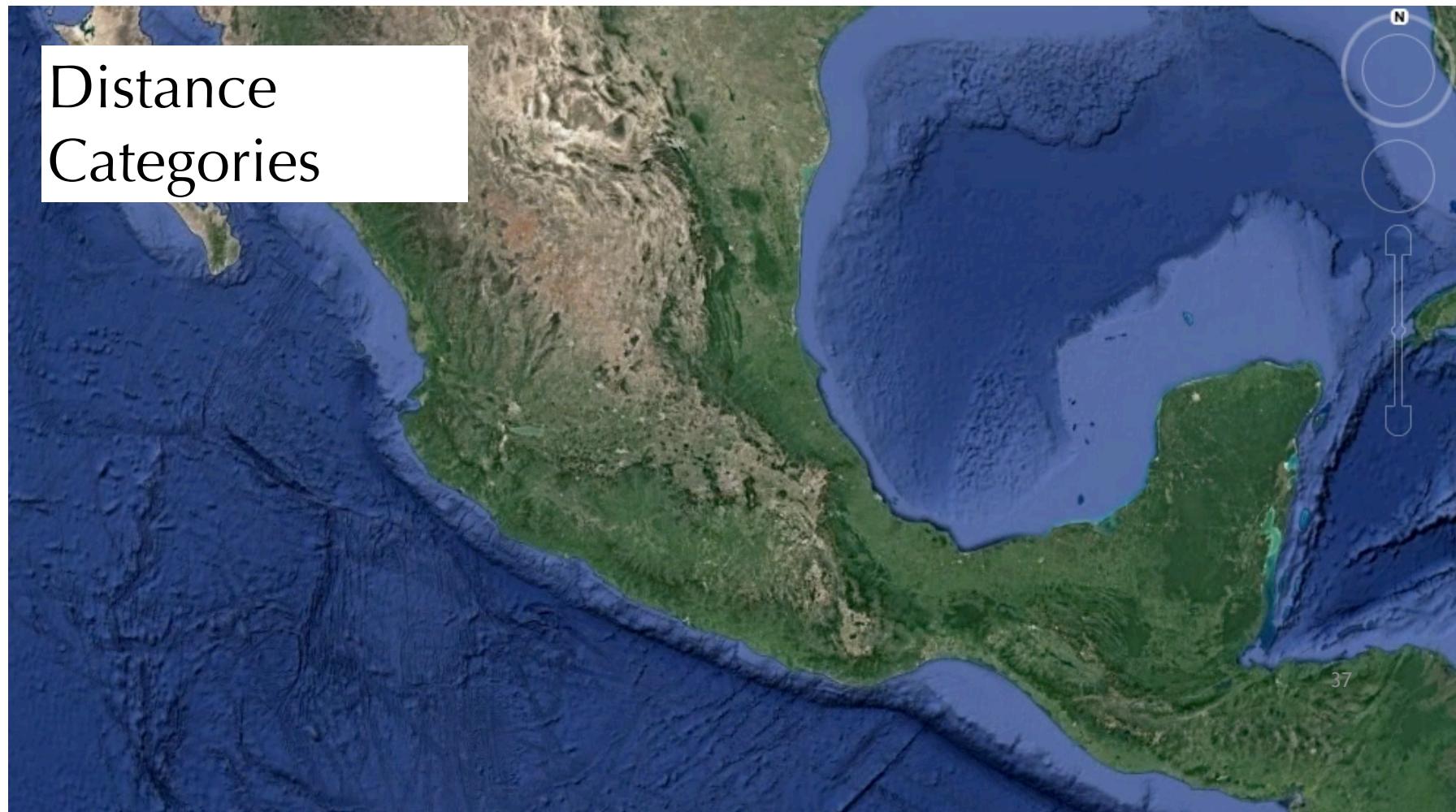
Indicating Practices: Dataset

Filmed local environment interviews (Kita 2001)

- 29 hearing participants
- Six hr., 30 min. of footage
- 873 Indicating gestures
- 2 deaf participants
- 31.5 min. of footage
- 222 Indicating signs



Indicating Practices: Coding



Indicating Practices: Coding

Elbow Height



Handshape



Arm Extension

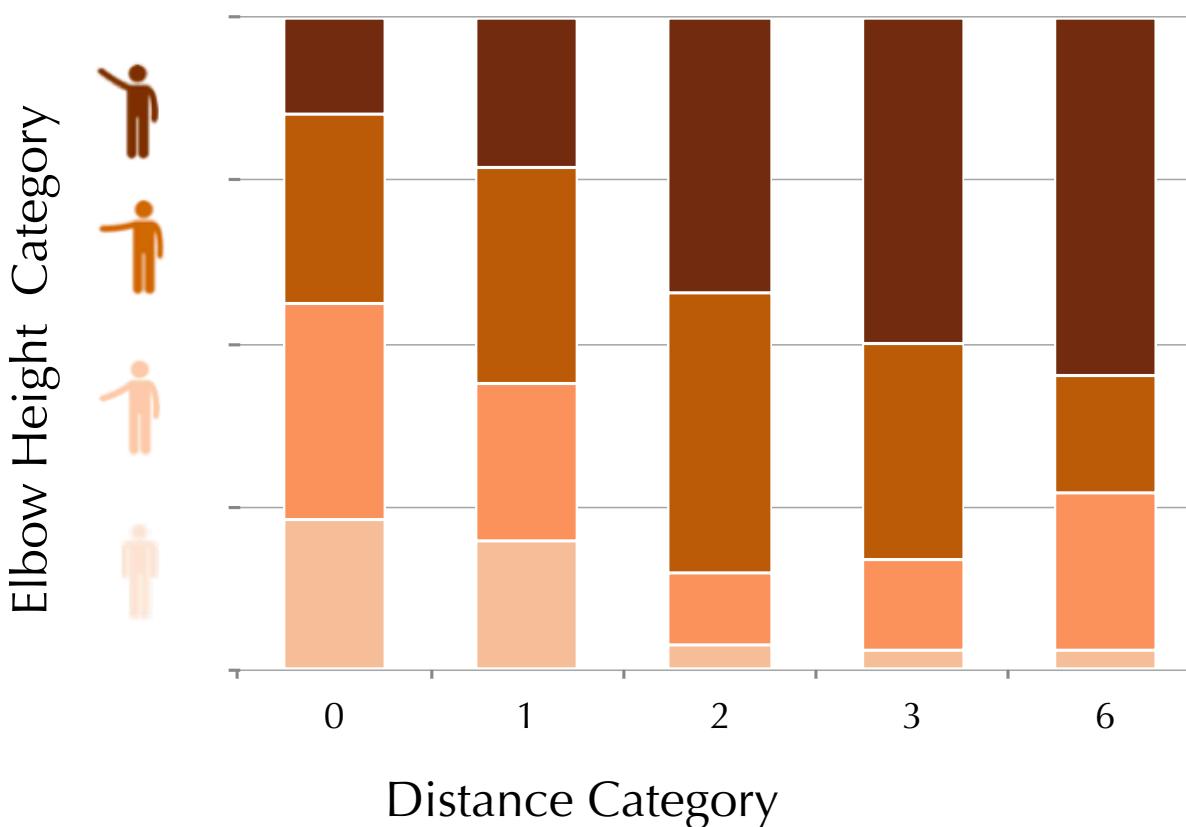


2. Indicating Gestures: Results



Indicating Practices: Speaker Results

- There is a Significant effect of distance on **Elbow Height**



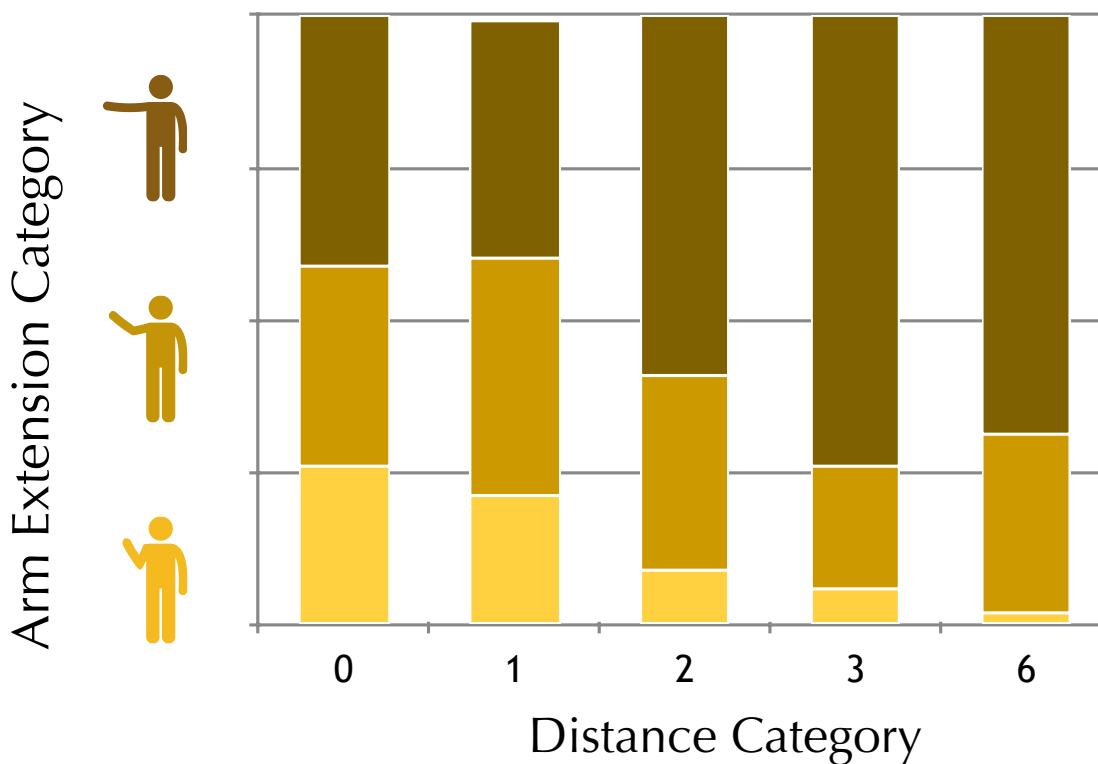
Fixed Effects	Estimate	SE	Pr(> t)
(Intercept)	1.04	0.20	< 0.001
Distance	0.18	0.02	< 0.001

Random Effects	Variance
Person (Intercept)	0.36
Residual	0.76

Mixed effects linear regression analysis

Indicating Practices: Speaker Results

- There is a Significant effect of distance on **Arm Extension**



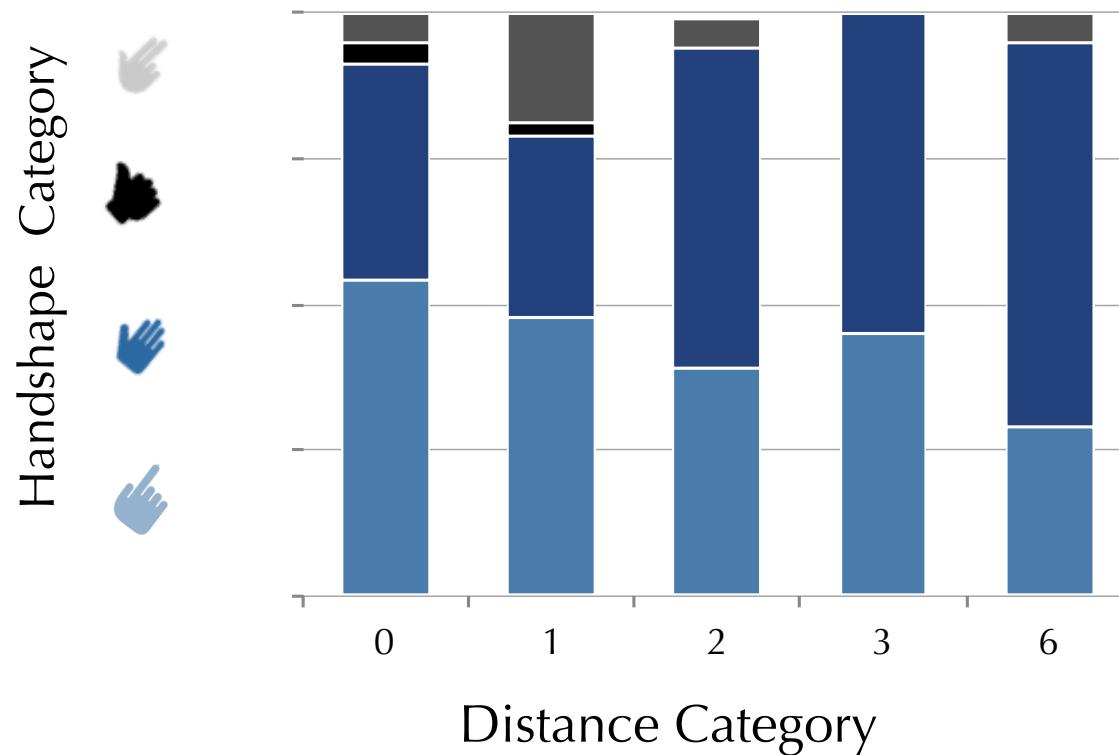
Fixed Effects	Estimate	SE	Pr(> t)
(Intercept)	1.10	0.15	< 0.001
Distance	0.11	0.01	< 0.001

Random Effects	Variance
Person (Intercept)	0.20
Residual	0.41

Mixed effects linear regression analysis

Indicating Practices: Speaker Results

- There is a Significant effect of distance on **Handshape**



Fixed Effects	Estimate	SE	Pr(> t)
(Intercept)	0.67	0.39	0.51
Distance	1.38	0.08	< 0.001

Random Effects	Variance
Person (Intercept)	2.52

Mixed effects logistic regression analysis

Indicating Practices: Speaker Summary

Hypothesis: formational features of IGs systematically covary with the **distance** of the indicated target

- a. **Elbow Height:** increased distance -> increased height
- b. **Arm Extension:** increased distance -> greater extension
- c. **Handshape:** increased distance -> increased use of open hand

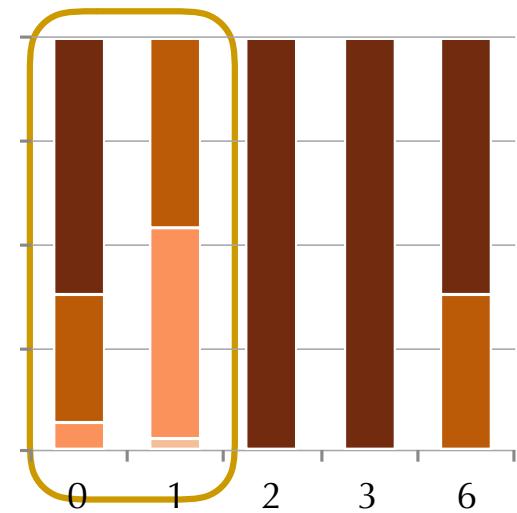
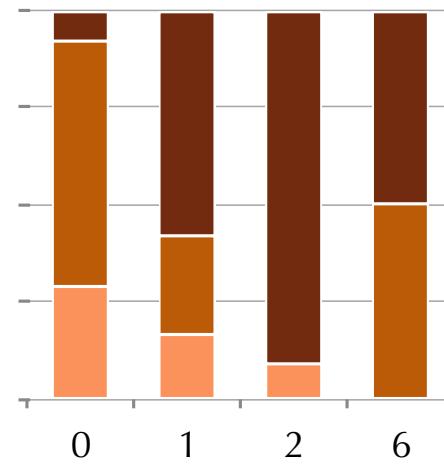
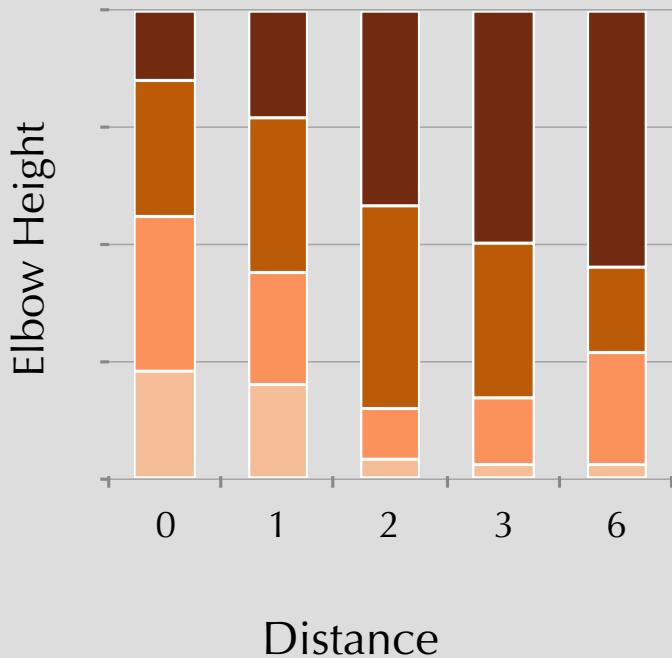


How do signers compare?





Indicating Practices: Speakers vs signers, elbow height

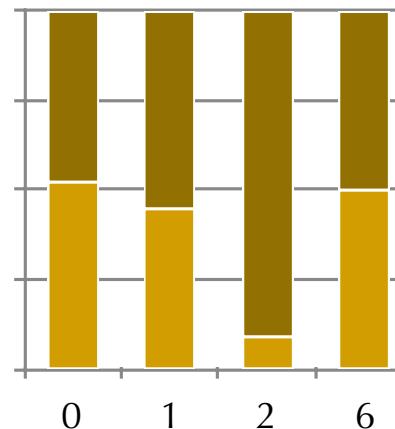
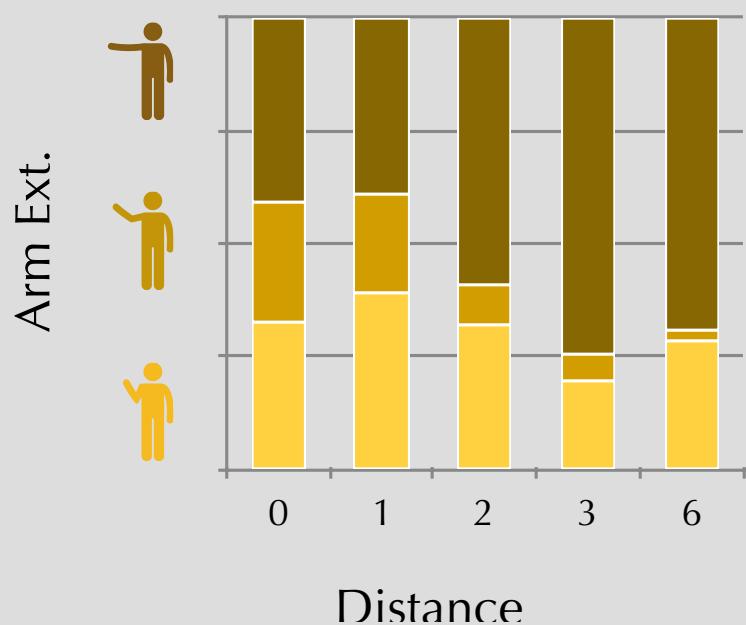


Sendo

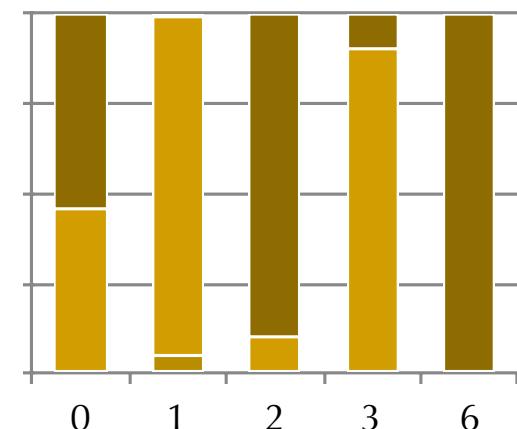


Koyu

Indicating Practices: Speakers vs signers, Arm Ext.

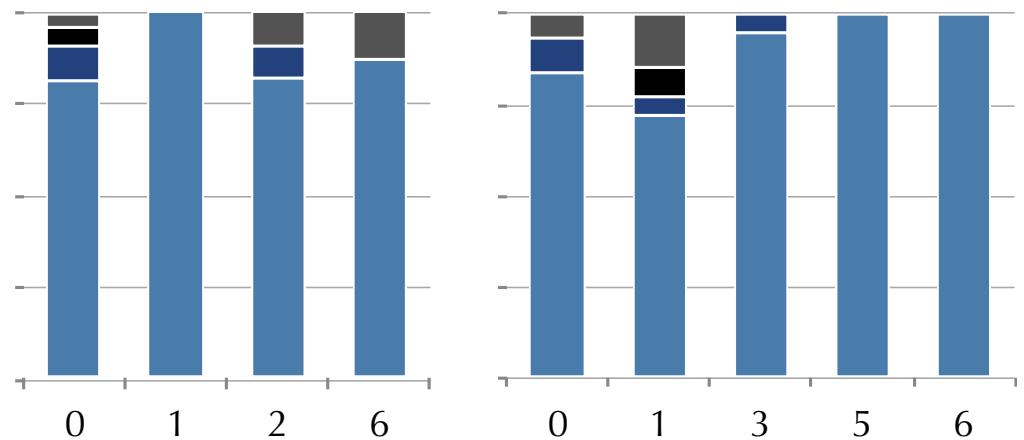
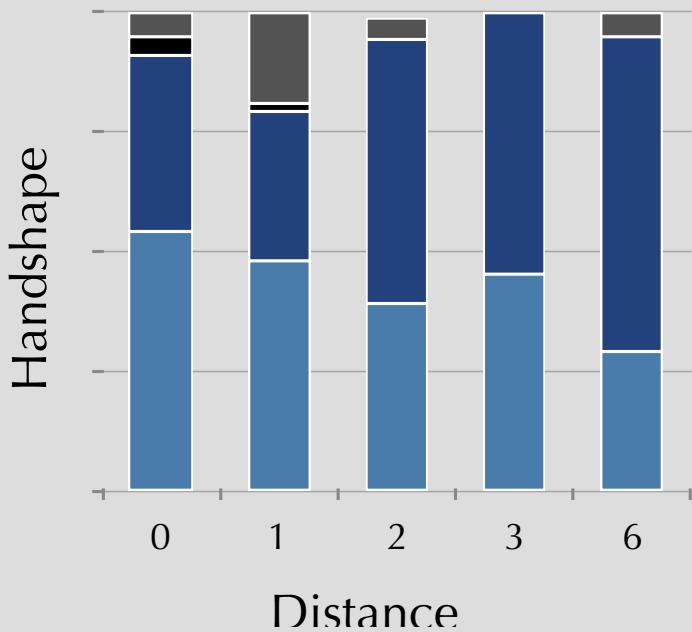


Sendo



Koyu

Indicating Practices: Speakers vs signers, Handshape



Sendo



Koyu

Indicating Practices: Results

Elbow Height



- Community conventions for modulating the **height** of indicating gestures are shared across speakers and signers

Indicating Practices: Results

Elbow Height



Arm Extension



Handshape



- Other community conventions for indicating gesture forms are not shared

Indicating Practices: Discussion



- Signers don't simply omit features of the larger system: they replace them



Conclusions

Creators of signed languages do not merely “borrow” gestural practices:



- They are recipients of a process of cultural transmission, like their hearing counterparts
- They modify the practices that they receive, in ways that are evident when signers and gesturers are **systematically** compared



Special thanks to Lynn Hou, Hilaria Cruz, David Quinto-Pozos, Richard Meier and Jürgen Streeck

Support with statistical models:

Sally Ragsdale
Cindy Blanco
Michael Mahometa

Support with GIS software:

Jessica Trelogan
Morgan Erhardt
Karl Pichotta

Images from Gan Khoon Lay
via the Noun Project

Image editing by Shai Davidi

Thank you!

Contact Kate Mesh: kate.a.mesh@gmail.com

Website: katemesh.com

Twitter: [@more_mesh](https://twitter.com/@more_mesh)

Slides, modified: katemesh.com/talks

References:

- Bloom, L. (1970). *Language Development: Form and Function in Emerging Grammars*, Cambridge, Mass., MIT Press.
- Cruz, E. (2011). Phonology, tone and the functions of tone in San Juan Quiahije Chatino (Unpublished doctoral dissertation). The University of Texas at Austin, Austin, TX
- Cruz, H. (2014). Linguistic poetics and rhetoric of Eastern Chatino of San Juan Quiahije (Unpublished doctoral dissertation). The University of Texas, Austin, TX.
- Hou, L. (2016). "Making hands": Family sign languages in the San Juan Quiahije community (Unpublished doctoral dissertation). The University of Texas at Austin, Austin, TX.
- Instituto Nacional de Estadística y Geografía. (2017). *México en Cifras: Información Nacional, Por Entidad Federativa y Municipios*. Retrieved from http://scholar.google.com/scholar?q=related:0qRqY9fNa0J:scholar.google.com/&hl=en&num=20&as_sdt=0,5
- Kita, S. (2001). Locally-anchored spatial gestures, version 2: Historical description of the local environment as a gesture elicitation task. In *Manual for the field season 2001* (pp. 132–135). Nijmegen, the Netherlands: Max Planck Institute for Psycholinguistics.

References:

- Mesh, K. (2018). "Gesture, Speech and Sign in Chatino Communities." The Endangered Languages Archive. Access: Public. <https://elar.soas.ac.uk>, deposit #0459.
- Mesh, K. (2017a). Points of Comparison: What Indicating Gestures tell Us About the Origins of Signs in San Juan Quiahije Chatino Sign Language. Unpublished doctoral dissertation. The University of Texas at Austin.
- Mesh, K. (2017b). "Local environment interview data for the dissertation, Points of Comparison: What Indicating Gestures tell us About the Origins of Signs in San Juan Quiahije Chatino Sign Language." Texas Data Repository Dataverse, V1. doi:10.18738/T8/PJXZJI
- Mesh, K. & Hou, L. (Accepted pending minor revisions.) Negation in San Juan Quiahije Chatino Sign Language: The Integration and Adaptation of Negative Emblems. GESTURE.