

When grammaticalization is seen and not heard: The case of pointing in signed language emergence

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Road Map for Today's Talk

- Emerging Signed Languages (SLs)
- Grammaticalization
- Pointing and its Possible Grammaticalization in SLs
- *Study 1*: How did Pointing Enter San Juan Quiahije Chatino SL?
- *Study 2*: How did Pointing Take on New Grammatical Functions in Israeli SL?

Signed languages:

- Have compressed life cycles
- Emerge in (relatively) rare contexts
- Are maintained only as long as they are needed

Goldin-Meadow &
Feldman (1977)

Frishberg (1987)

Osugi and Webb
(1999)

Hou (2016)

Woodward (2000)

de Vos (2012)

Meir, Sandler, et al.
(2010)

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Homesign/ Family Sign Languages

Signed languages:

- Have compressed life cycles
- Emerge in (relatively) rare contexts
- Are maintained only as long as they are needed



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Feldman (1977)

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Osugi and Webb
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(2010)

Urban/National
Sign Languages

Grammaticalization

- A type of language change
- Free lexical elements become free or bound grammatical elements

Traugott and Heine
(1991)

Hopper and Traugott
(1993)

Aitchison (1996)

Heine and Kuteva
(2002)

Grammaticalization

- A type of language change
- Free lexical elements become free or bound grammatical elements

- a. a-**taka** ku-jenga nyumba
C1.PRES-want INF-build house
'she wants to build a house'
- b. a-**ta**-jenga nyumba
C1-FUT-build house
'She will build a house'

Traugott and Heine
(1991)

Hopper and Traugott
(1993)

Aitchison (1996)

Heine and Kuteva
(2002)—Swahili, Tanzania

Grammaticalization

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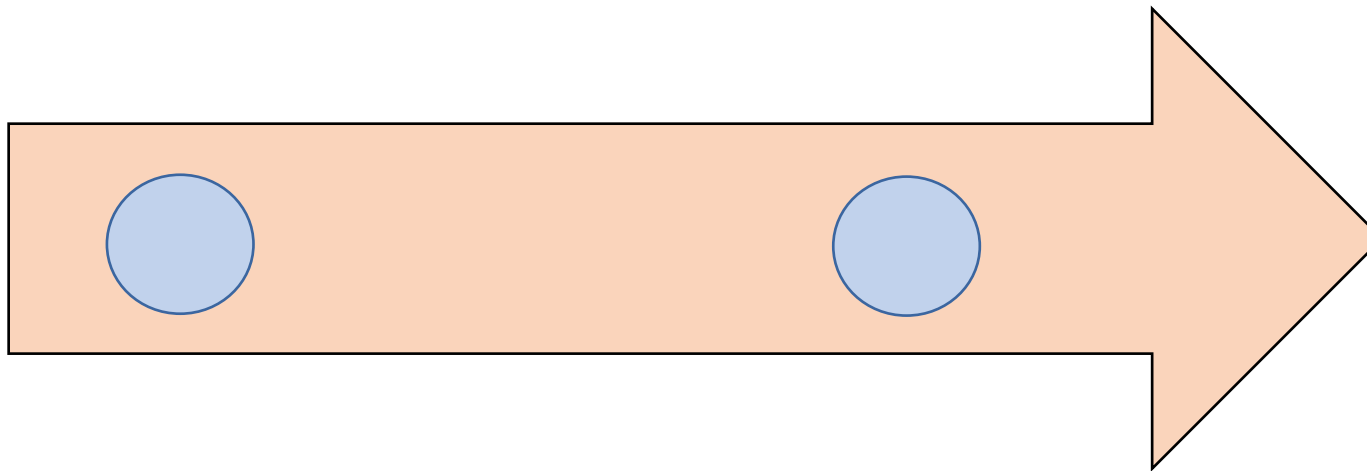
Change in meaning

Reduction in form

Morphosyntactic change

Grammaticalization Chains

- Patterns of grammaticalization that are attested cross-linguistically



Lexical element:
want, desire

Grammatical
element: future

Grammaticalization Chains

- Are familiar grammaticalization chains also seen in sign language historical change?
- Pfau & Steinbach (2006):
 - Yes...
 - But the situation of SLs is different because the starting-place of the chains is often gesture

Pointing



- Directs attention to locations in space

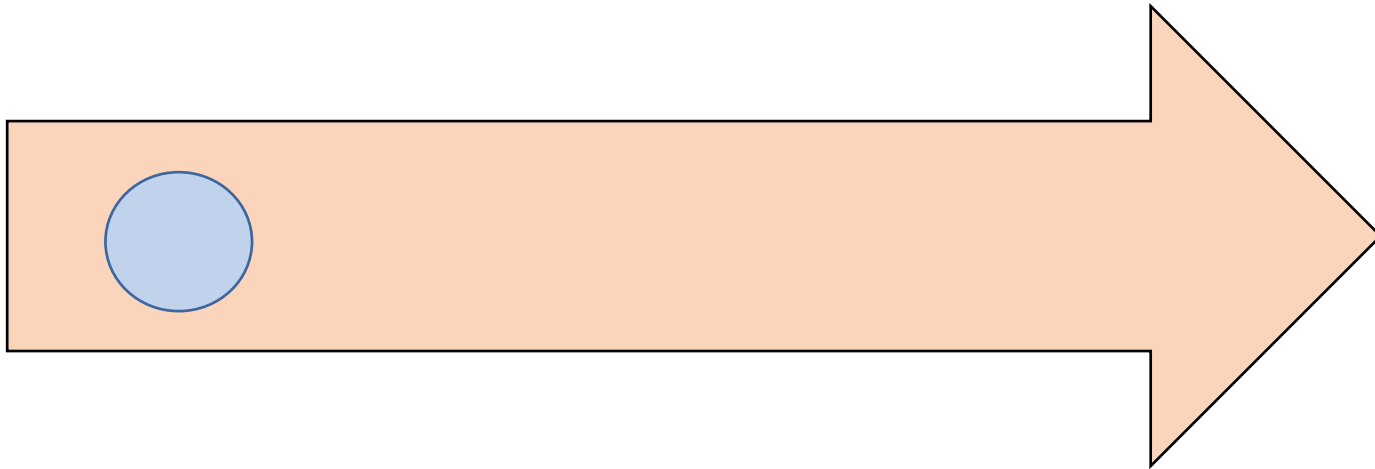
Pointing



- Often paired with demonstrative expressions (*this, that*)

Grammaticalization Chain for Demonstratives

*Look at
that!*

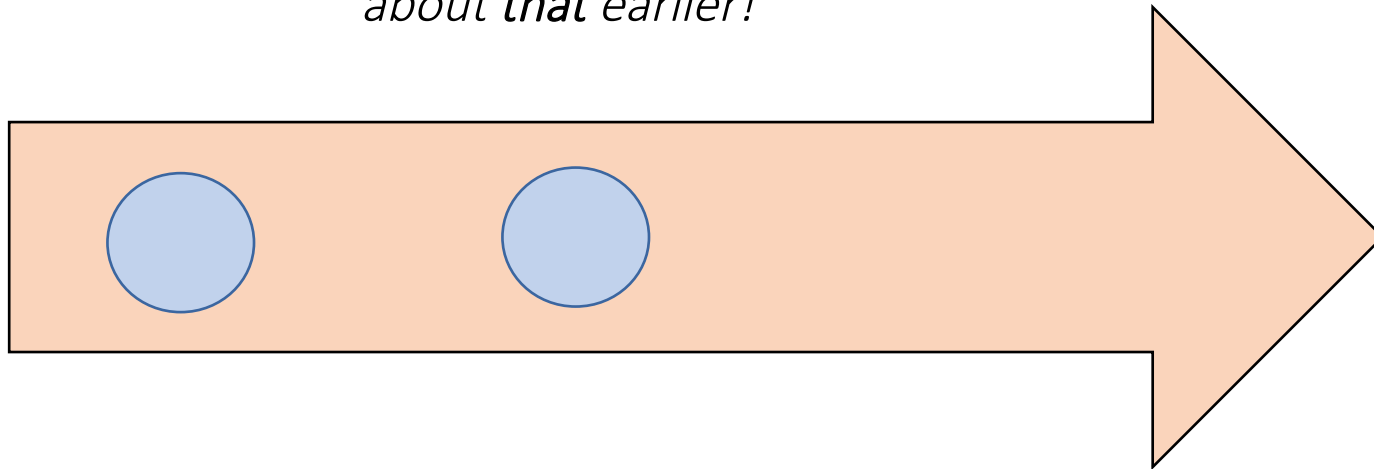


Exophoric
dem.

Grammaticalization Chain for Demonstratives

*Look at
that!*

*Language emergence?
We were talking
about **that** earlier!*



Exophoric
dem.

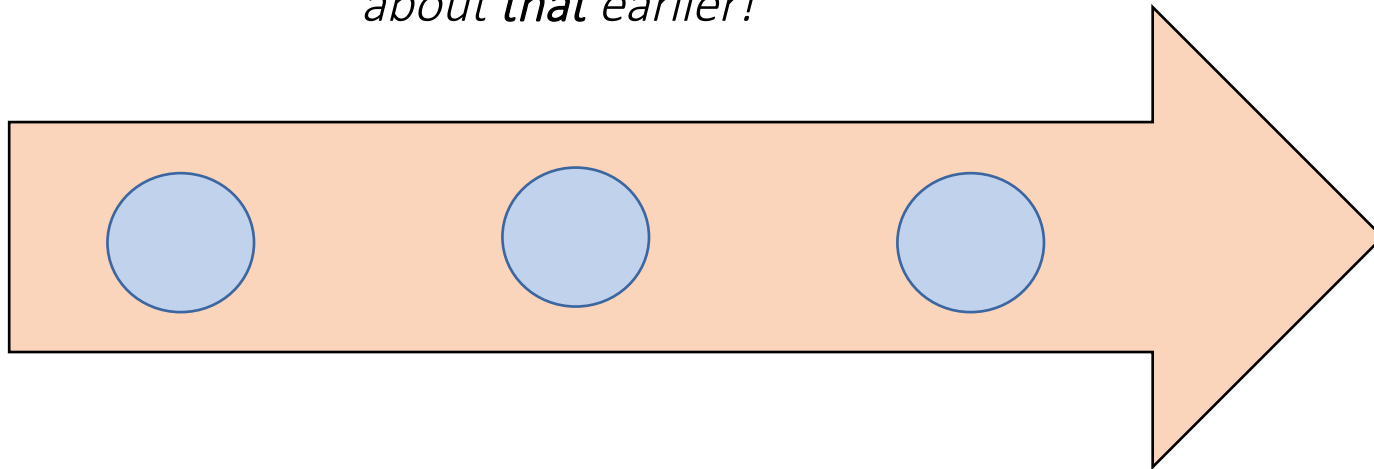
Endophoric
dem.

Grammaticalization Chain for Demonstratives

*Look at
that!*

*Language emergence?
We were talking
about **that** earlier!*

*The study **that**
I never read.*



Exophoric
dem.

Endophoric
dem.

Relative
clause
marker

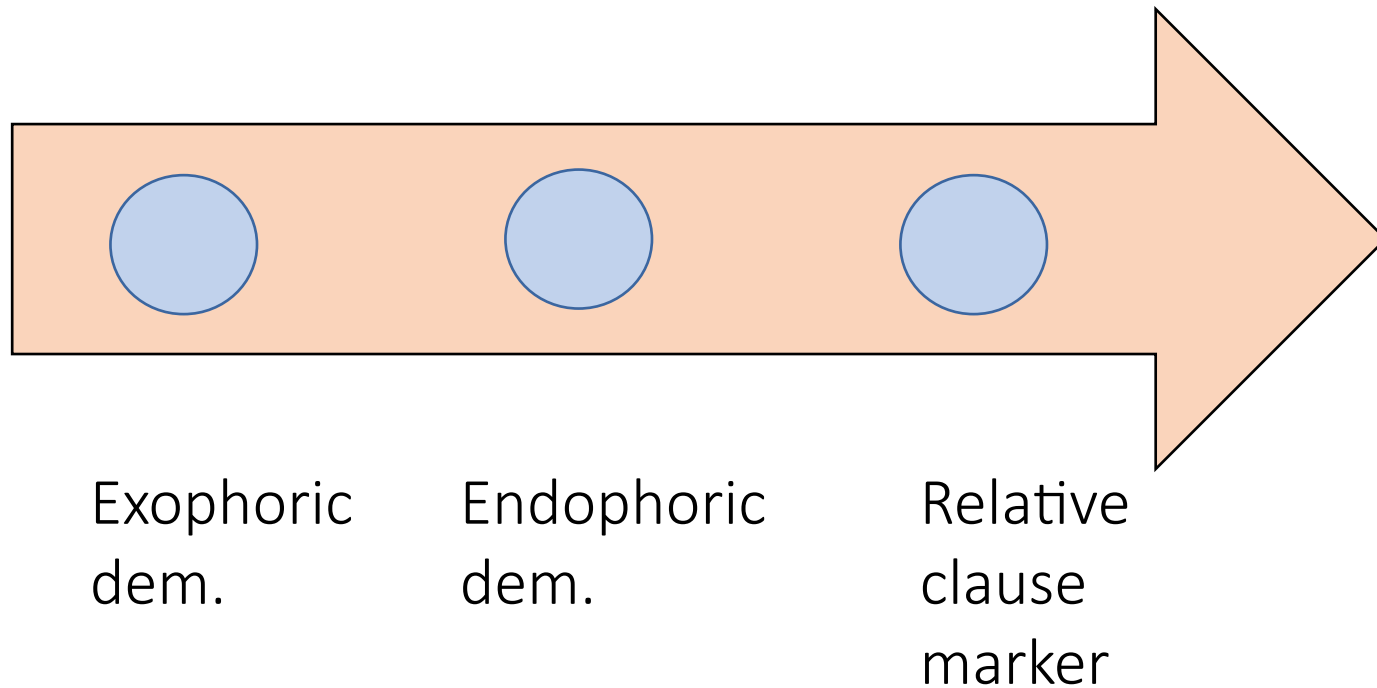
In SLs, pointing has all of these functions

Exophoric
dem.

Endophoric
dem.

Relative
clause
marker

Is this evidence that pointing follows the same grammaticalization chain in SLs?



How did pointing enter
San Juan Quiahije Chatino Sign Language?



SJQCSL: Setting

San Juan Quiahije Municipality: Oaxaca, MX

Pop. 3,628 (INEGI 2012)

Spoken languages:

- SJQ Chatino (Zapotecan)
- Spanish



SJQCSL: Origins



2 deaf siblings were
born into a single family
in Quiahije:

- Stina, age 55
- Koyu, age 45

Limited memory
of prior deaf individuals

SJQCSL: Today

- 11 Deaf individuals
- Distributed across 6 families
- ~20 deaf and hearing signers of SJQCSL



How did pointing enter
San Juan Quiahije Chatino Sign Language?



Conventions for pointing are community-specific



a)



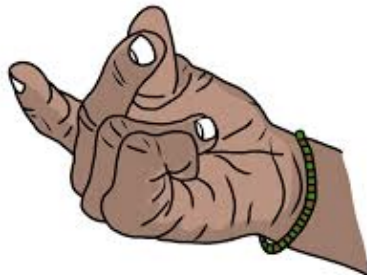
b)



c)



d)



Eco (1976)

Kendon (2003, 2004)

Wilkins (2003)

Haviland (2003)

Levinson (2003)

Ola Orié (2009)

Le Guen (2011)

de Vos (2014)

Green (2014)

Community-Specific Pointing Gestures of Quiahije



Proximal marking



Distal marking

Task

Local environment interviews (Kita 2001)



Dataset

31 filmed interviews

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



Gesture Coding



Unelevated

Below
Shoulder

At
Shoulder

Above
Shoulder



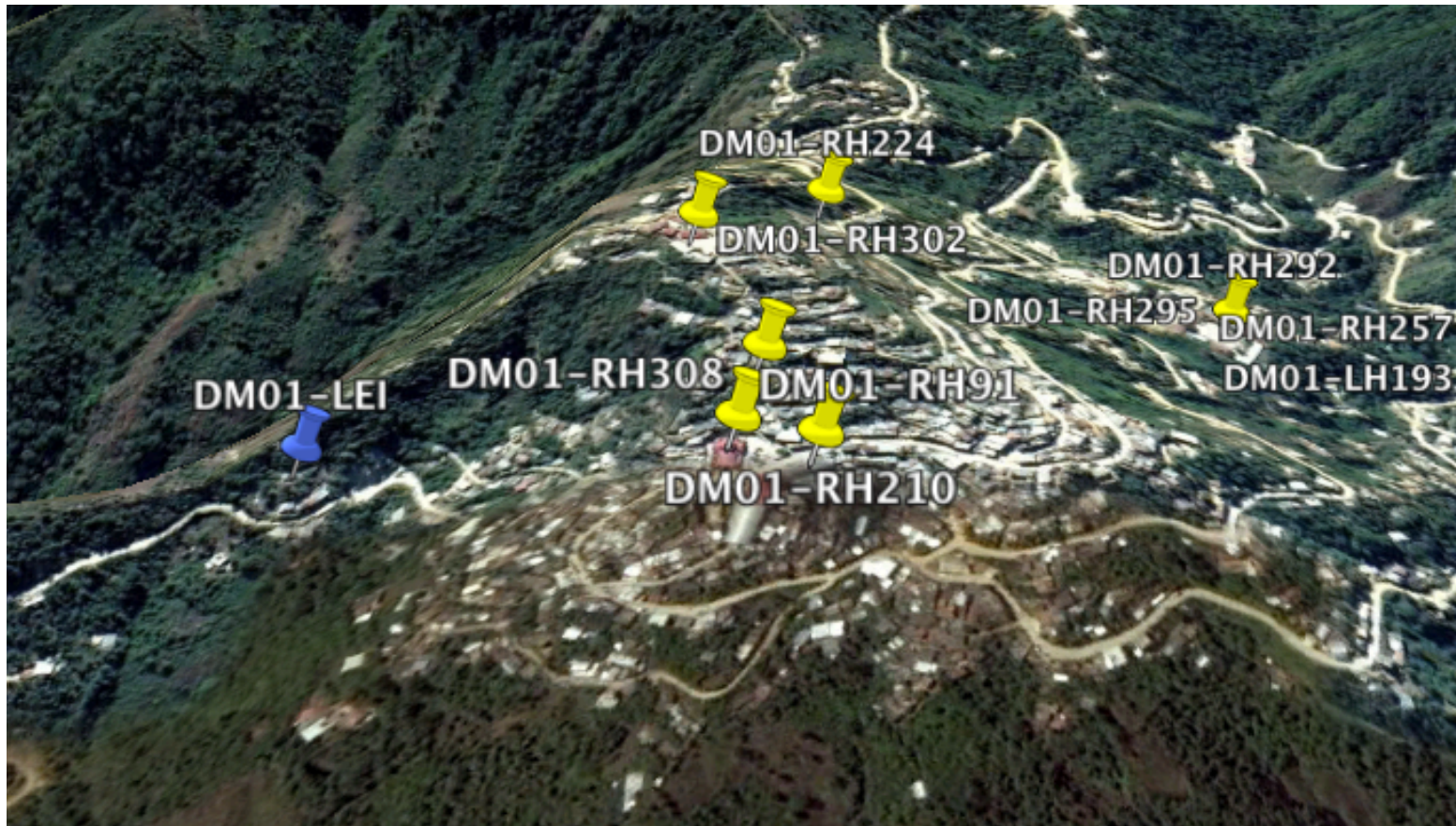
IP

OH

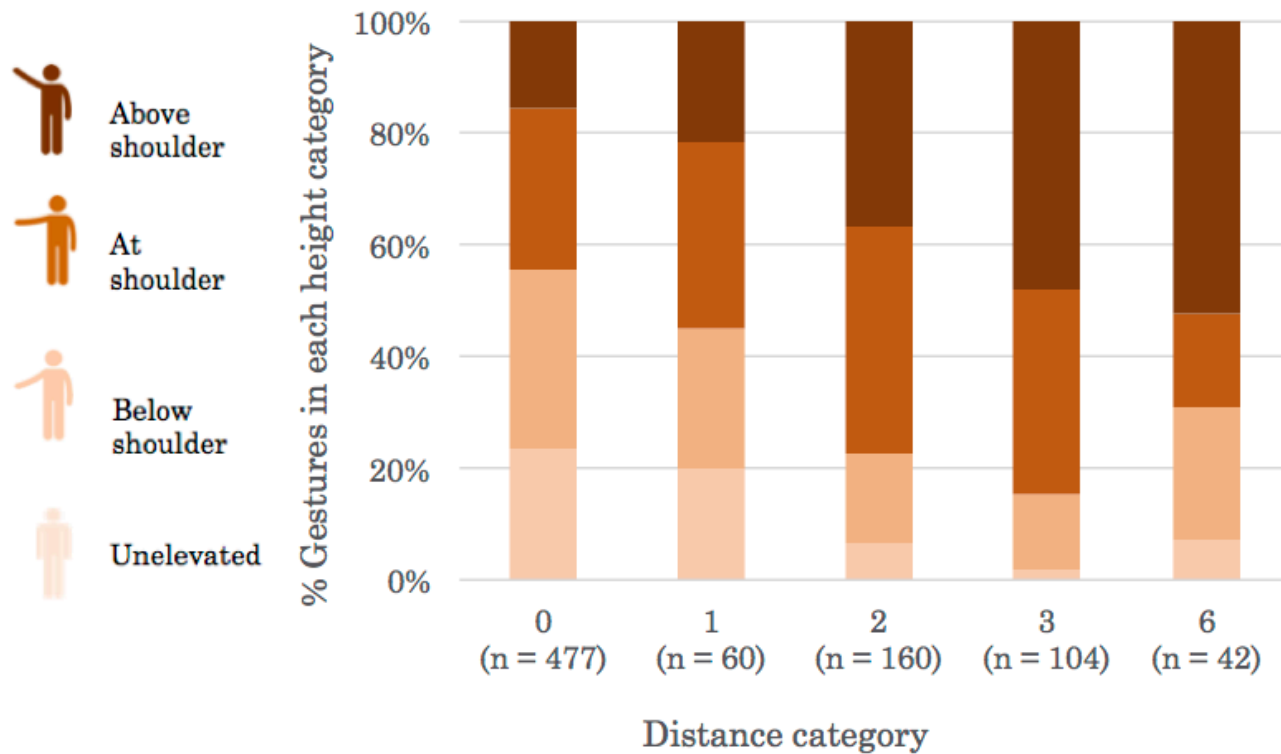
Thumb

Other

Target Coding

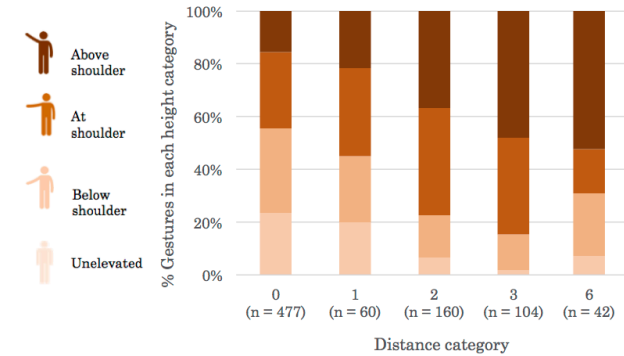


Hearing Gesturer Results: **Elbow Height**



Hearing Gesturer Results: Elbow Height

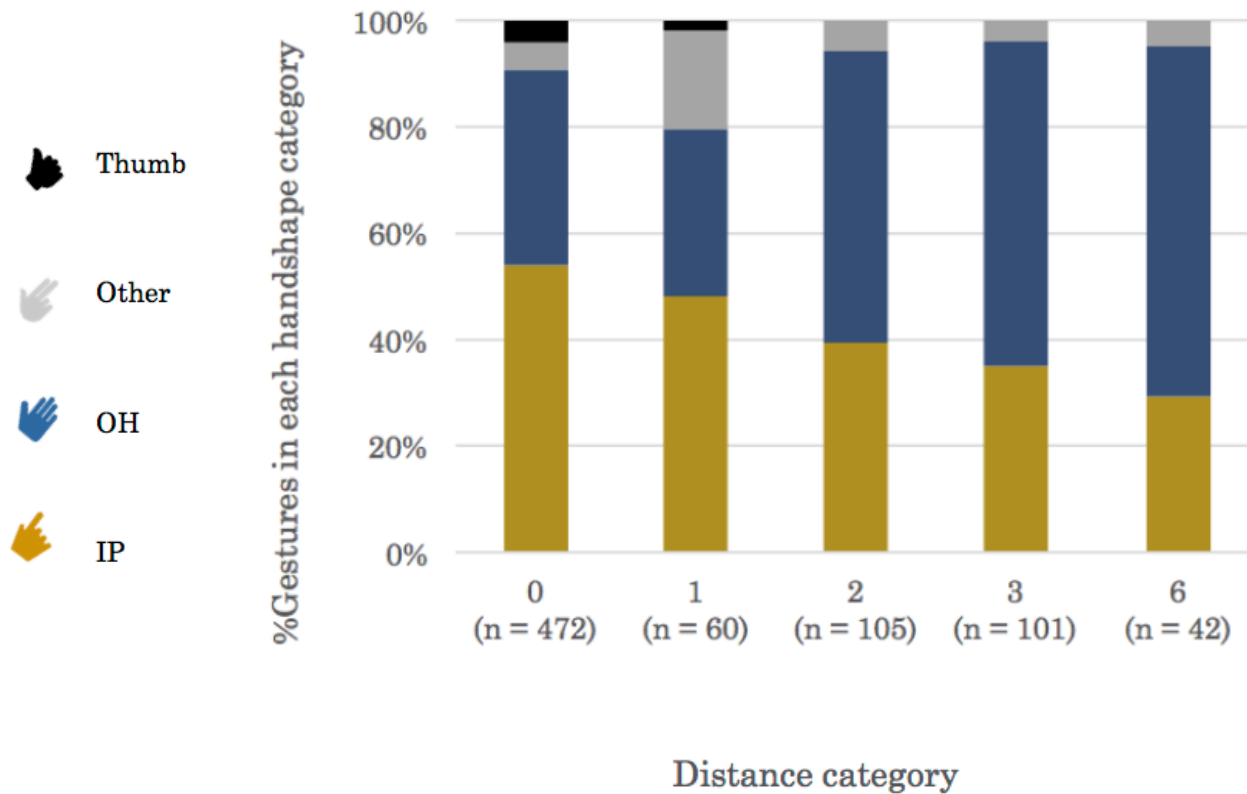
Effect of distance on elbow height



Fixed effects	Estimate	SE	Pr(> t)
(Intercept)	1.04	0.20	< 0.001
Distance	0.18	0.02	< 0.001
Altitude	0.02	0.02	0.13
Random effects	Variance		
Person (Intercept)	0.35		
Residual	0.76		

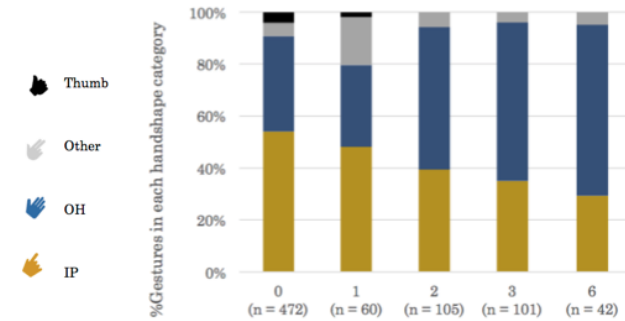
Table 4.5: Mixed effects linear regression analysis of distance and altitude effects on elbow height

Hearing Gesturer Results: **Handshape**



Hearing Gesturer Results: Handshape

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
Altitude	0.97	0.45	0.56
Random effects	Variance		
Person (Intercept)	2.52		

Table 4.8: Mixed effects logistic regression analysis of distance and altitude effects on handshape

How do signers in Quiahije incorporate the elbow height and handshape features into their emerging pointing systems?





Koyu

51 years old

*1 deaf older
sibling*



Sendo

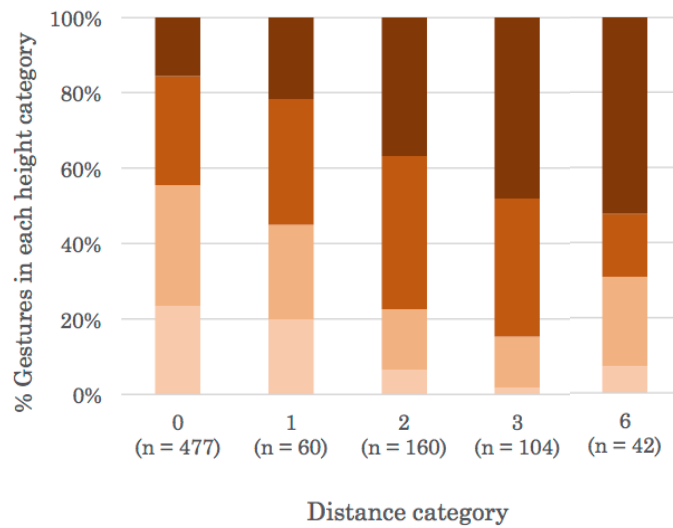
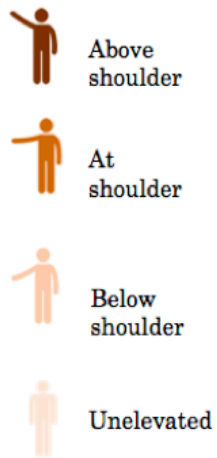
30 years old

*No deaf
siblings*

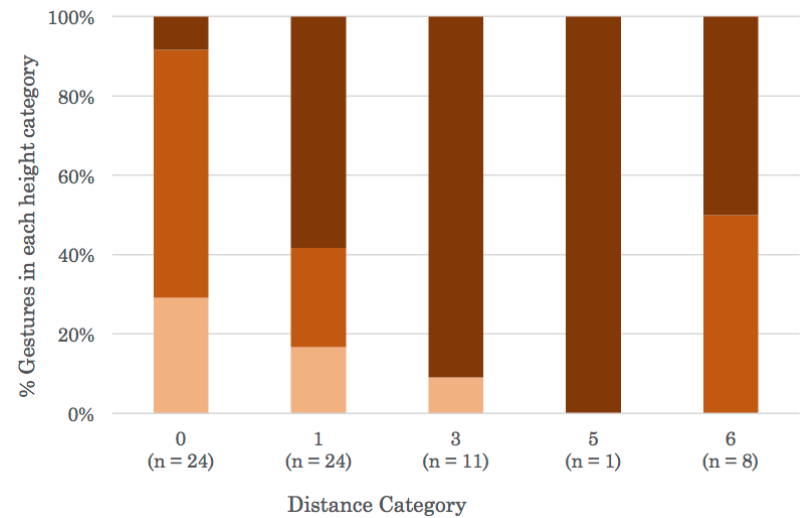


For signers, does pointing **elbow height** convey information about target distance?

Elbow height by distance

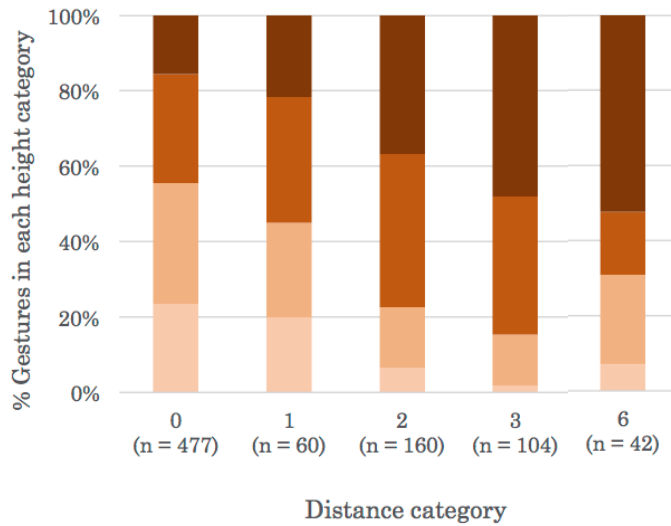
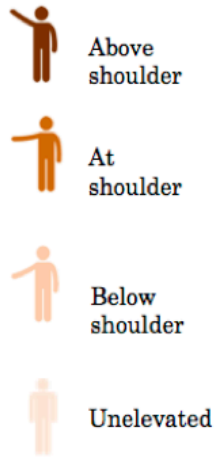


Speaker-Gesturers

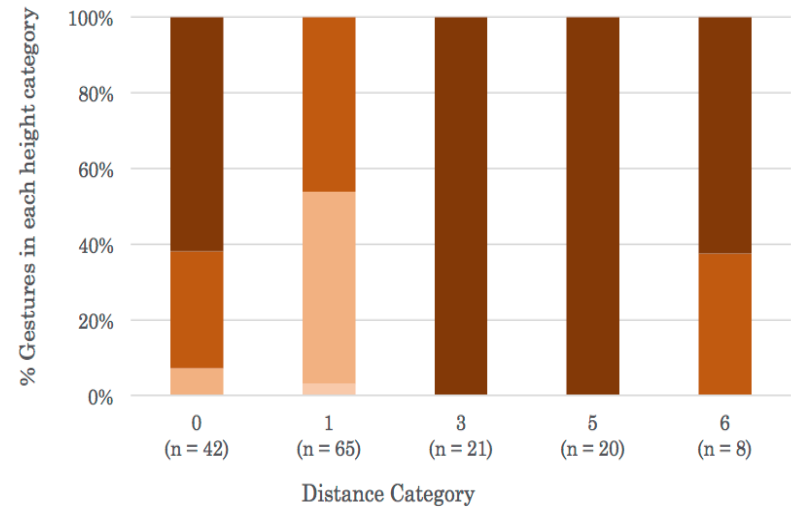


Sendo

Elbow height by distance



Speaker-Gesturers



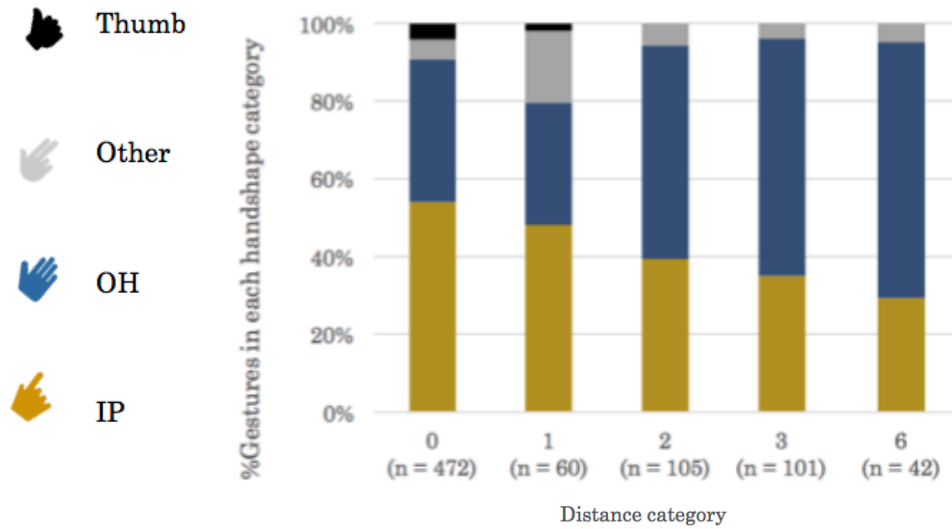
Koyu



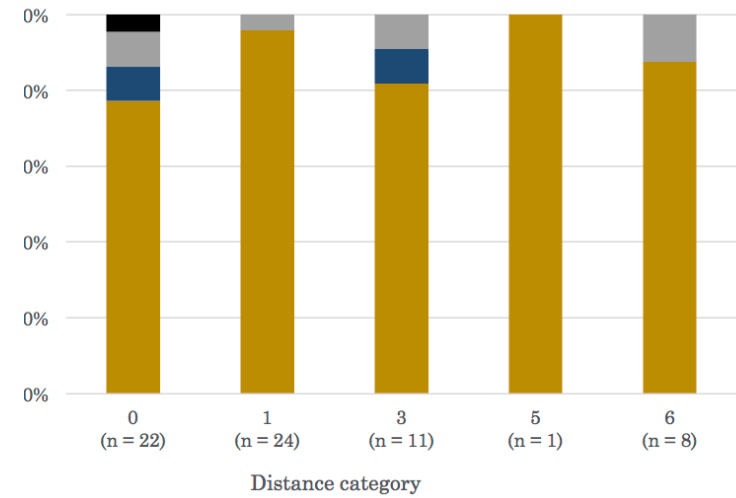
Does pointing sign
handshape convey
information about
target distance?



Handshape by distance

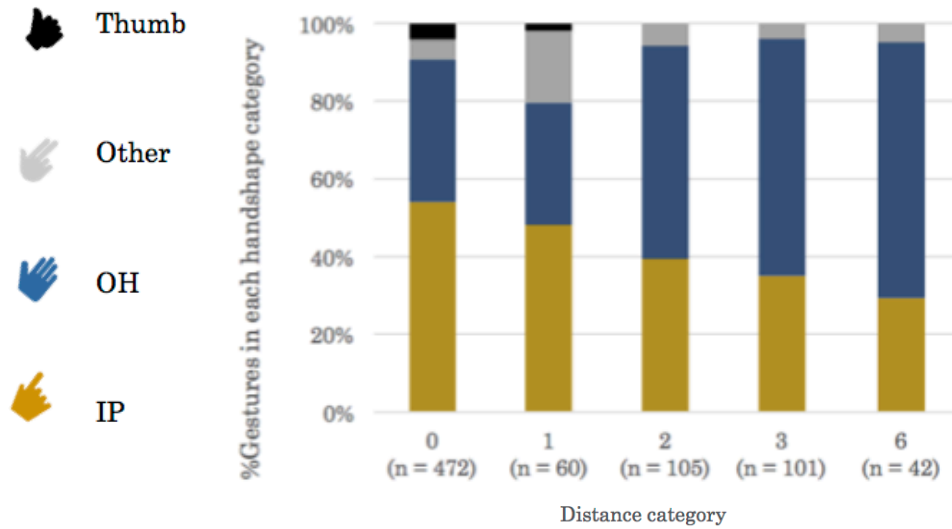


Speaker-Gesturers

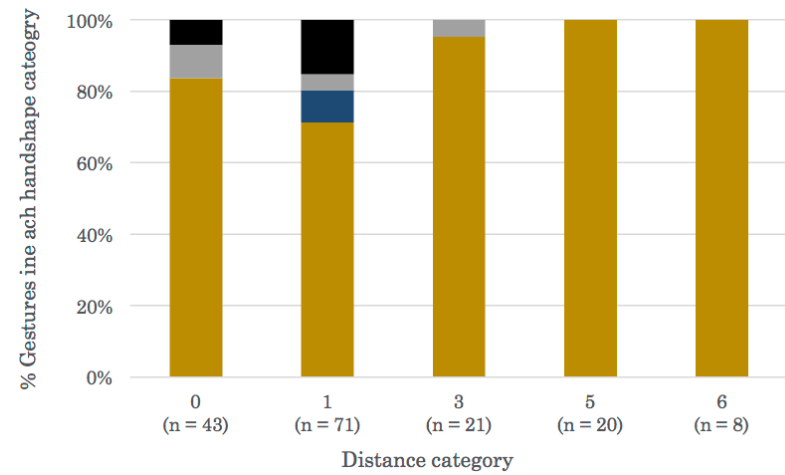


Sendo

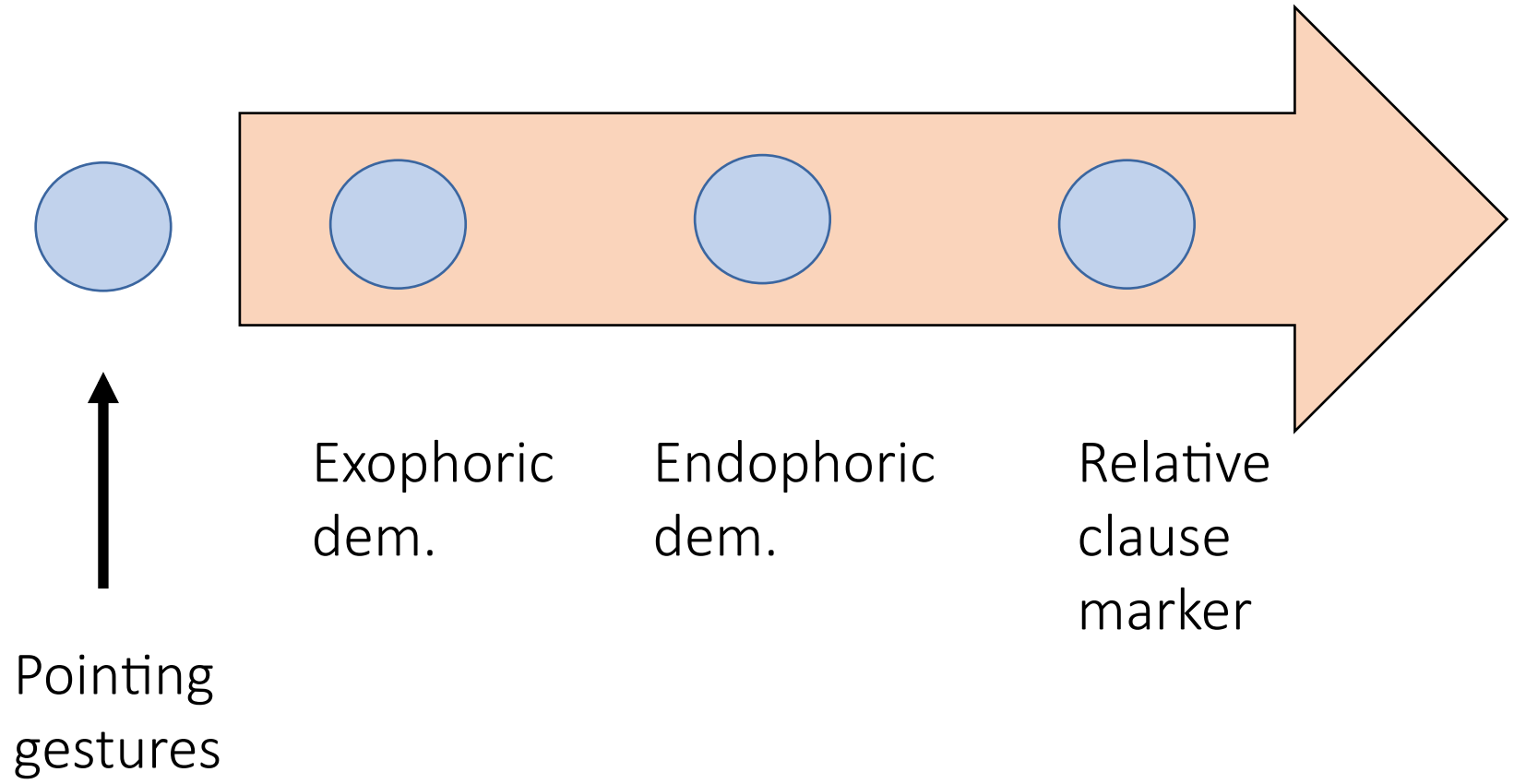
Handshape by distance



Speaker-Gesturers



Koyu



How did pointing take on a new grammatical function in Israeli Sign Language?

ISL Origins

1932: founding of the Jewish School for Deaf-Mutes

- Students were prevented from signing
- Nevertheless, social groups of signers formed



1937: deaf signers meet in
Tel Aviv

- The signers quickly form a social club with members from major Israeli cities

Members of the early deaf social group in Jerusalem, 1937 (Meir & Sandler 2008, p. 187).

ISL Origins

1950s: deaf social organizations mobilize



Construction of Helen Keller House, 1953–1958. (Meir & Sandler 2008: p. 194).



1970s: deaf schools and support organizations are founded throughout Israel

1970s: deaf educators successfully advocate for ISL as a language of instruction

ISL Today

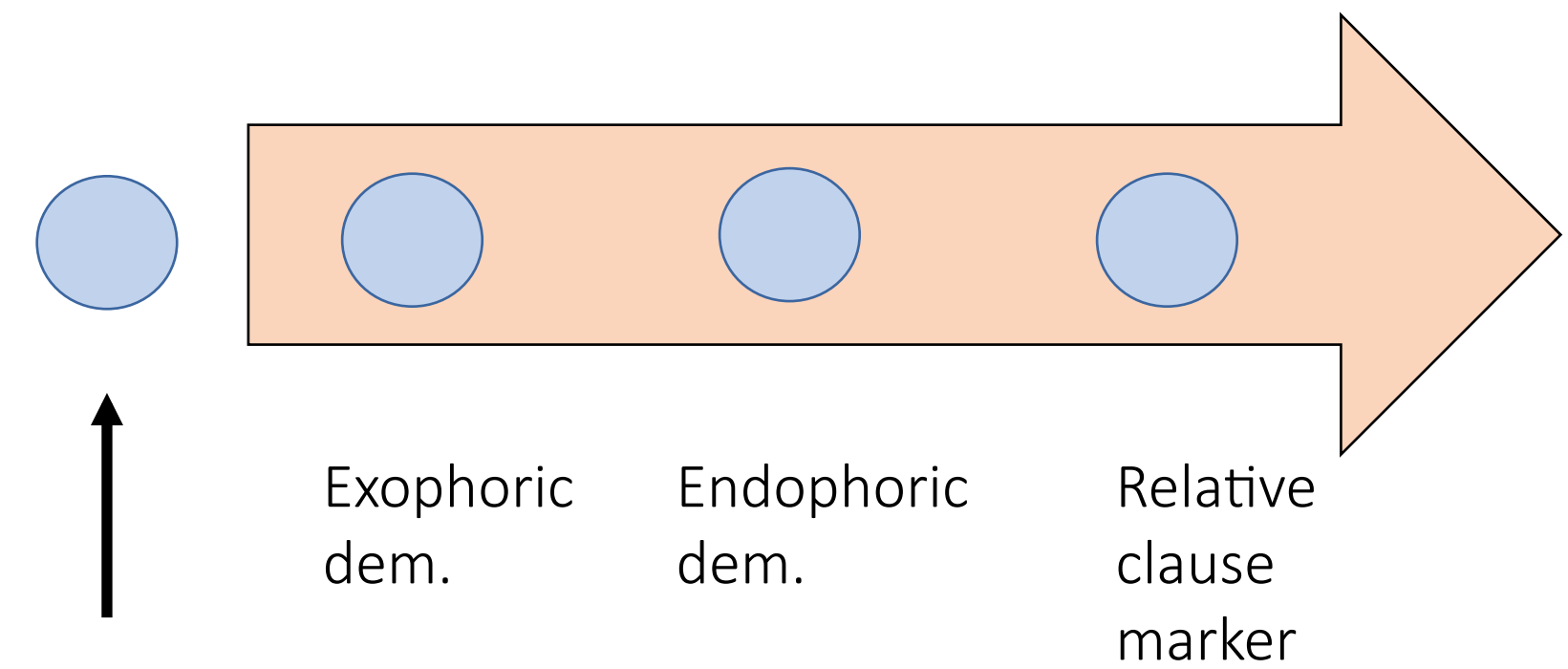


- Urban/National SL
- 10,000 signers
- 4 “generations’ of signers across 80 years



Dachkovsky
(2016)

Sign Language Research Lab: University of Haifa



Pointing
gestures

Exophoric
dem.

Endophoric
dem.

Relative
clause
marker

Dachkovsky (2016)



Task (following Zukovski 2001):



“Which girl is eating ice cream, and which girl is drinking?”

Dachkovsky (2016)

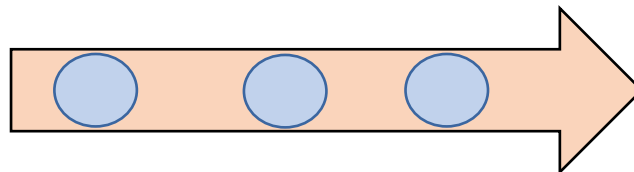


Dataset

29 filmed elicitation sessions across three 'generations' of signers

- Older participants (55+) 13
- Middle Aged Participants (35-54) 8
- Young Participants (20-34) 8

Apparent Time
Hypothesis
Labov (1963)



Dachkovsky (2016)



Older participants (55+)

- Overwhelmingly use points to locate items in physical space



Dachkovsky
(2016)



Middle-Aged participants (35-54)

- Some use points to refer back to characters that were already introduced



Dachkovsky
(2016)



Middle-Aged participants (35-54)

- What is the evidence for grammaticalization?
 - Change in function
 - Morphosyntactic Change



Dachkovsky
(2016)



Middle-Aged participants (35-54)

- Others use points as relative clause (RC) markers



Dachkovsky
(2016)



Middle-Aged participants (35-54)

- What is the evidence for grammaticalization?
 - Change in function
 - Morphosyntactic Change

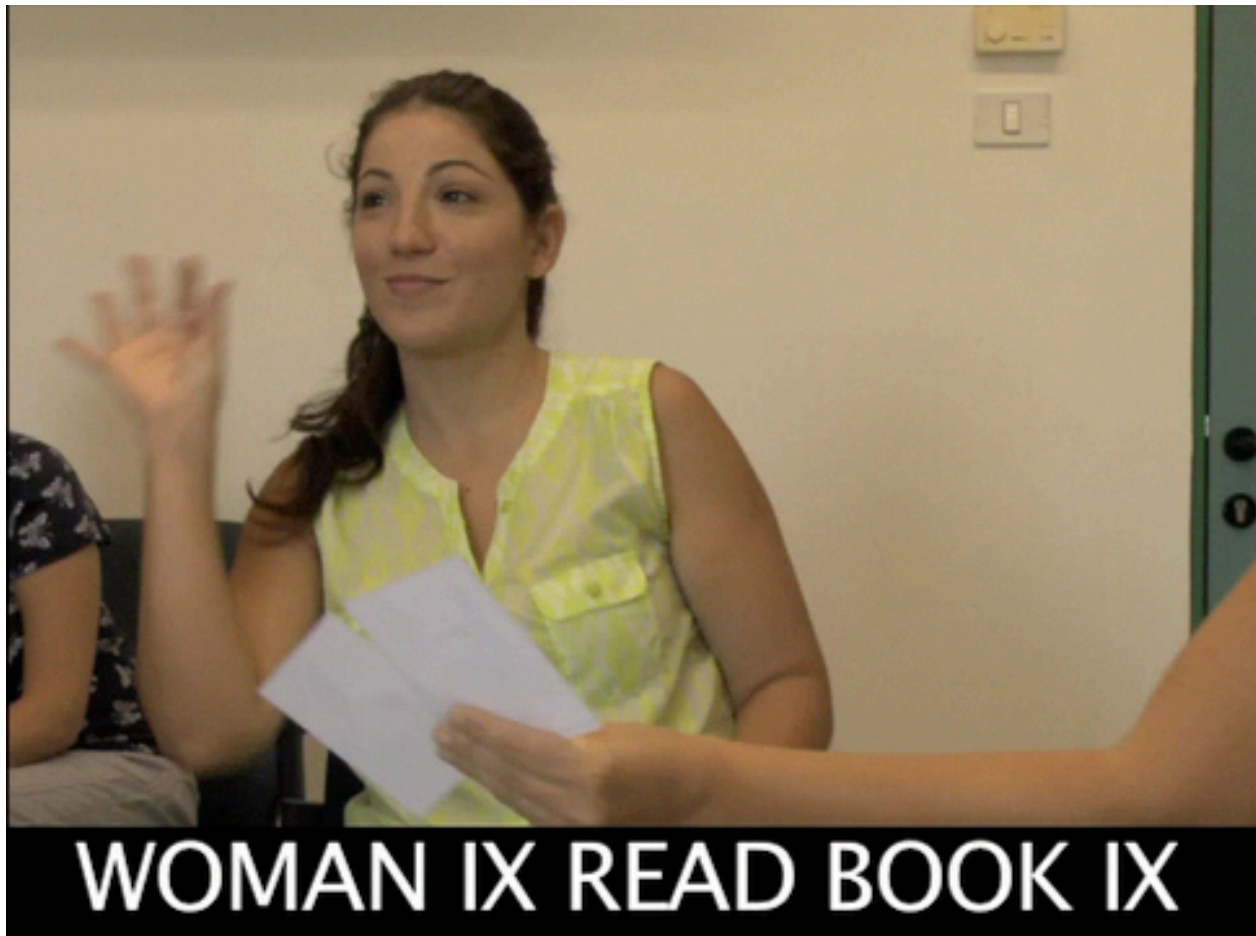


Dachkovsky
(2016)



Young participants (20-34)

- Overwhelmingly use points as RC markers

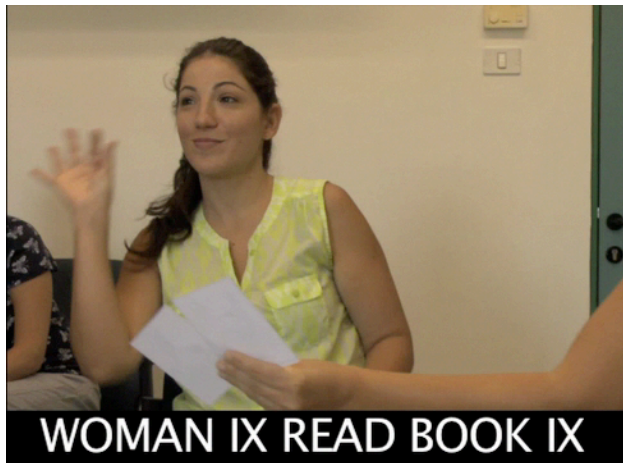


Dachkovsky
(2016)



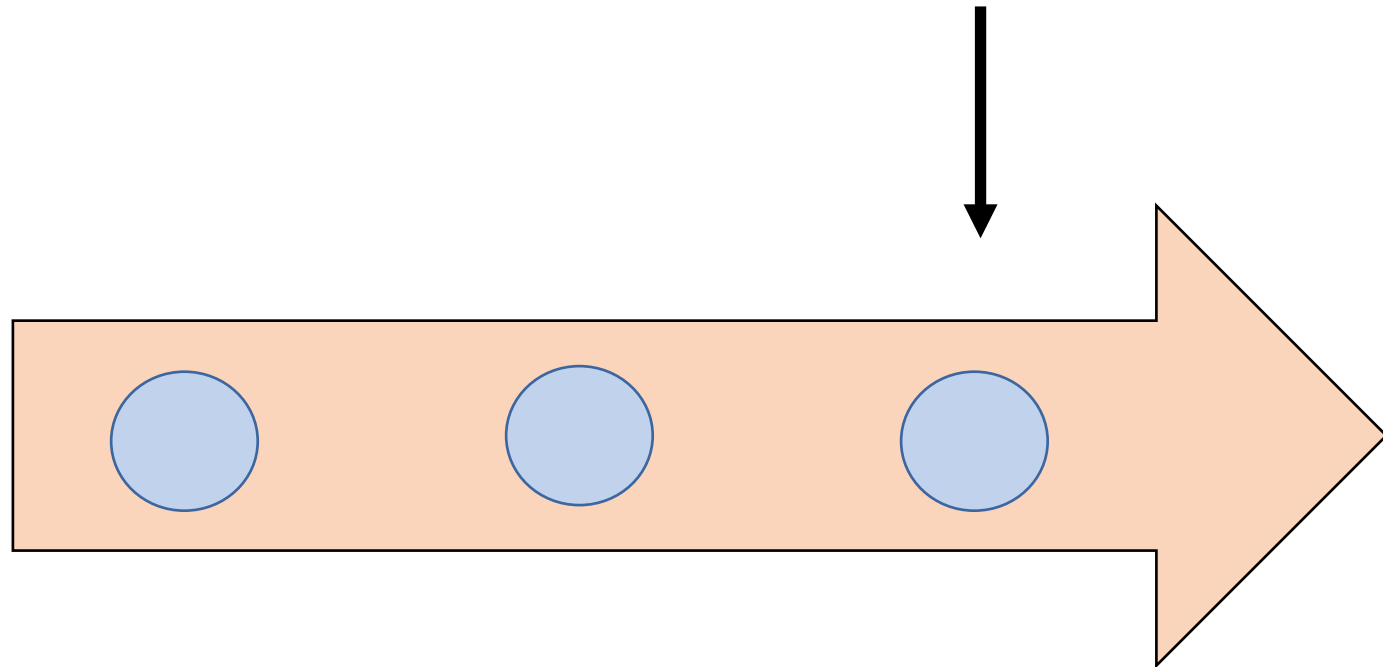
Young participants (20-34)

- What is the evidence for grammaticalization?
 - Change in function
 - Morphosyntactic Change
 - Phonological Reduction



Dachkovsky
(2016)





Exophoric
dem.

Endophoric
dem.

Relative
clause
marker

Dachkovsky (2016)





SJQCSL

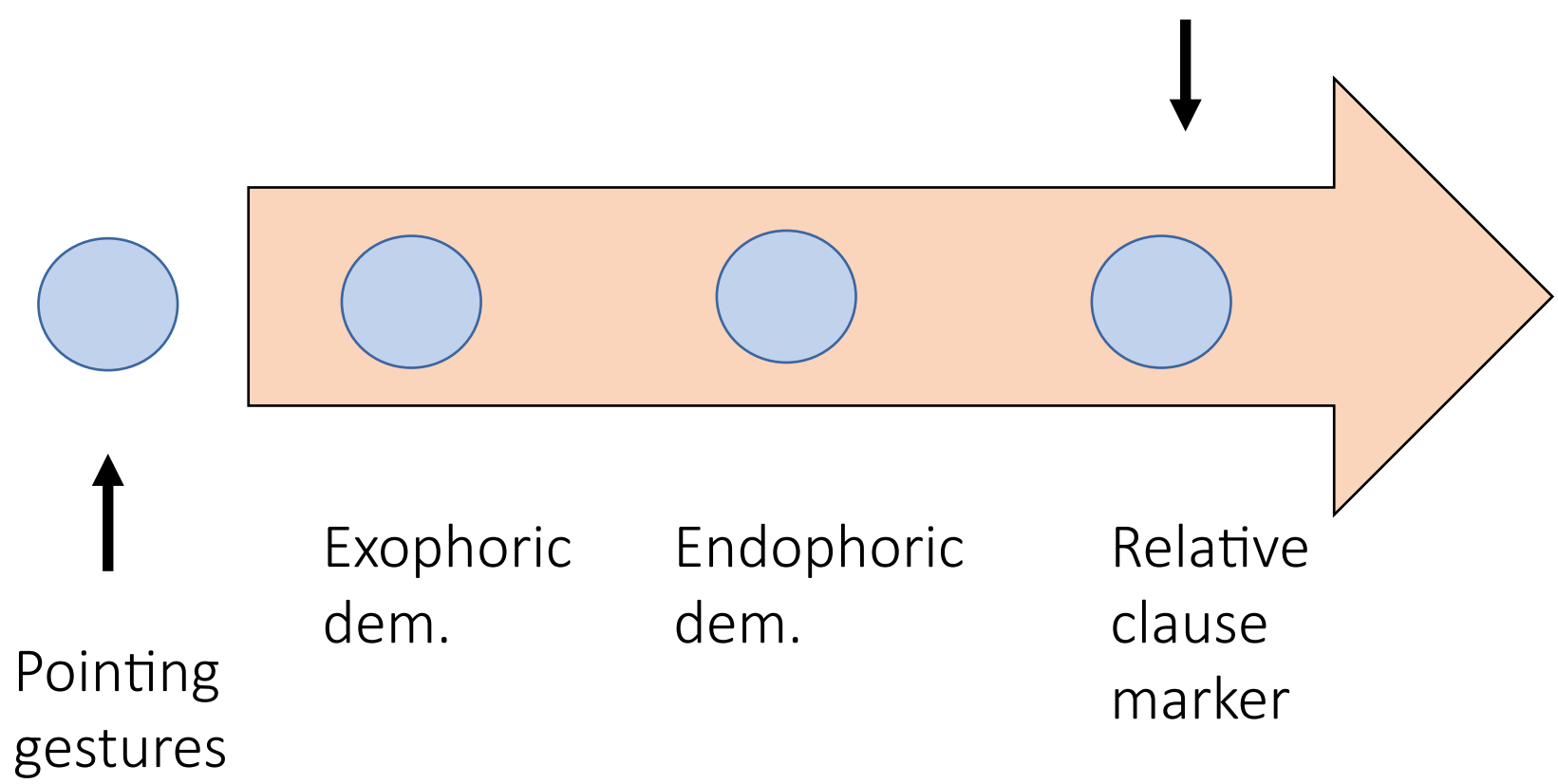
- Family SLs
- ~20+ signers
- ~ 55 years old



ISL

- Urban/National SL
- 10,000 signers
- ~80 years old





Questions?

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Many thanks to



...and the Linguistics Department
at Dartmouth College, for the
invitation to speak here today



References

Aitchison, J. 1996. *The seeds of speech. Language origin and evolution*. Cambridge University Press.

Dachkovsky, S. (2016.) Grammaticalization of demonstrative pointing into relative clause marker in Israeli Sign Language (ISL). Paper presented at the 38th Annual Conference of the German Linguistic Society (DFGS). February 24–26, 2016.

Eco, U. (1976). *A theory of semiotics*. Indiana University Press.

Frishberg, N. (1987). Homesign. In J. V. Van Cleve (Ed.), *Gallaudet encyclopedia of deaf people and deafness* (pp. 128–131). New York, NY: McGraw Hill Professional.

Goldin-Meadow, S., & Feldman, H. (1977). The development of language-like communication without a language model. *Science*, 197(4301), 401–403.

Green, J. (2014). *Drawn from the ground: Sound, sign and inscription in Central Australian sand stories* (Vol. 13). Cambridge University Press.

Haviland, J. B. (2003). How to point in Zinacantan. In S. Kita (Ed.), *Pointing: where language, culture and cognition meet* (pp. 139–170). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Heine, B., & Kuteva, H. (2002). On the evolution of grammatical forms. The transition to language. in Wray, A (Ed), *Studies in the evolution of language* (pp. 376-97). Oxford: Oxford University Press.

Hopper, P. & Traugott, E.C. (1993). Grammaticalization. Cambridge: Cambridge University Press.

Hou, L. Y.-S. (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 (INEGI). (2012). Mexico en Cifras: Información Nacional, Por Entidad Federativa y Municipios.

References

Kendon, A. (2004). *Gesture: Visible action as utterance*. Cambridge University Press.

Kendon, A., & Versante, L. (2003). *Pointing by hand in Neapolitan*. In S. Kita (Ed.), *Pointing: where language, culture and cognition meet* (pp. 109–137). Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

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). Nejmegen, the Netherlands: Max Planck Institute for Psycholinguistics.

Le Guen, O. (2011). Modes of pointing to existing spaces and the use of frames of reference. *Gesture*, 11(3), 271–307.

Levinson, S. C. (2003). *Space in language and cognition: Explorations in cognitive diversity*. Cambridge University Press.

Meir, I., & Sandler, W. (2008). *A language in space: The story of Israeli Sign Language*. Psychology Press.

Meir, I., Sandler, W., Padden, C., & Aronoff, M. (2010). Emerging sign languages. *Oxford handbook of deaf studies, language, and education*, 2, 267-280.

O. la Orie, d. (2009). Pointing the Yoruba way. *Gesture*, 9, 237–261.

Osugi, Y., & Webb, T. S. R. (1999). The use of word elicitation to identify distinctive gestural systems on Amami Island. *Sign Language & Linguistics*, 2(1), 87– 112.

Pfau, R., & Steinbach, M. (2006). *Modality-independent and modality-specific aspects of grammaticalization in sign languages*. Universitätsverlag.

Traugott, E. & Heine, B. (eds.) 1991. *Approaches to grammaticalization*. Benjamins.

References

de Vos, C. (2014). The Kata Kolok Pointing System: Morphemization and Syntactic Integration. *Topics in Cognitive Science*, 7(1), 150–168.

Wilkins, D. (2003). Why pointing with the index finger is not a universal (in sociocultural and semiotic terms). In S. Kita (Ed.), *Pointing: where language, culture and cognition meet* (pp. 171–215). Lawrence Erlbaum Associates, Inc.

Woodward, J. (2000). In Emmorey & Lane, (Eds), Sign languages and sign language families in Thailand and Viet Nam. *The signs of language revisited: An anthology to honor Ursula Bellugi and Edward Klima*. (pp. 23-47). Psychology Press.

Image References

Pointing images, slide 32.

Images of four pointing handshapes based on Wilkins (2003), printed in Green (2014)

Finger-snapping image based on Ola Orié (2009), retrieved from <http://www.orishaimage.com/blog/yoruba-gestures>