

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:

Goldin-Meadow &
Feldman (1977)

Frishberg (1987)

- Have compressed life cycles

Osugi and Webb
(1999)

- Emerge in (relatively) rare contexts

Hou (2016)

- Are maintained only as long as they
are needed

Woodward (2000)

de Vos (2012)

Meir, Sandler,et al.
(2010)

Signed languages:

- Have compressed life cycles
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- Are maintained only as long as they are needed

Goldin-Meadow & Feldman (1977)

Frishberg (1987)

Osugi and Webb (1999)

Hou (2016)

Woodward (2000)

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Meir, Sandler, et al. (2010)



Homesign/ Family Sign Languages

Signed languages:

Goldin-Meadow & Feldman (1977)

Frishberg (1987)

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

Osugi and Webb (1999)

Hou (2016)

Woodward (2000)

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Meir, Sandler, et al. (2010)



Urban/National Sign Languages

Grammaticalization

- A type of language change
Traugott and Heine
(1991)
- Free lexical elements become
free or bound grammatical
elements
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

Traugott and Heine
(1991)

Hopper and Traugott
(1993)

Aitchison (1996)

Heine and Kuteva
(2002)—Swahili, Tanzania

a. a-**taka** ku-jenga nymba
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'

Grammaticalization

- a. a-taka ku-jenga nymba
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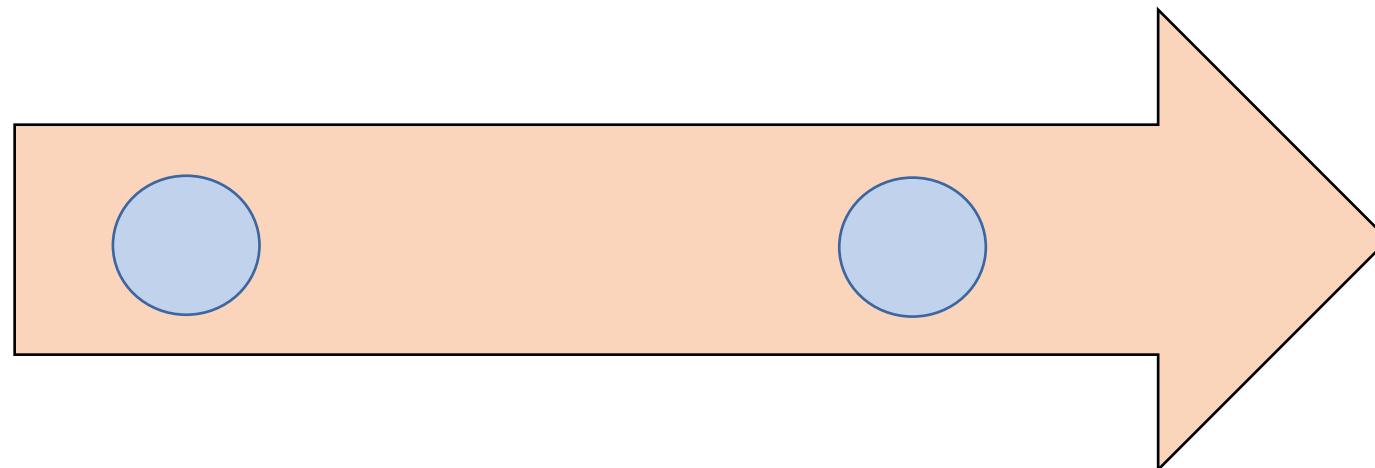
Change in meaning

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

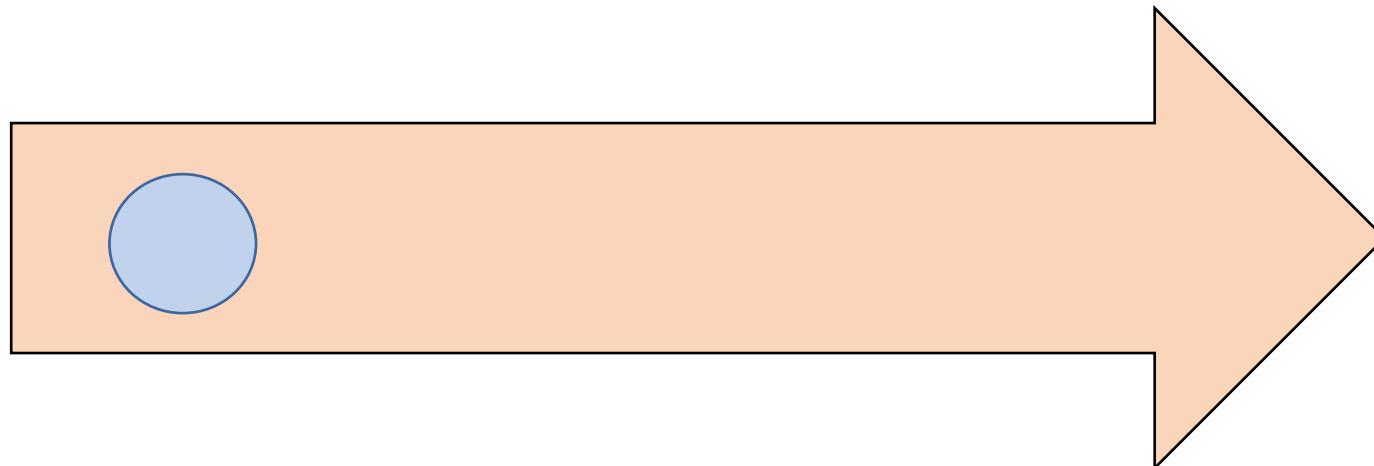
Pointing



- Often paired with demonstrative expressions
(this, that)

Grammaticalization Chain for Demonstratives

*Look at
that!*

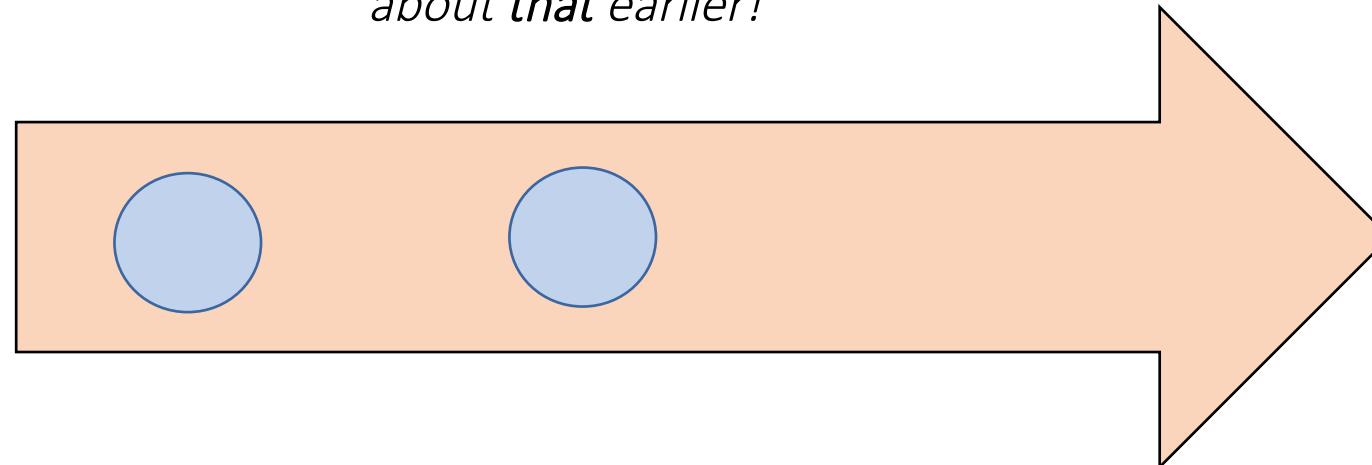


Exophoric
dem.

Grammaticalization Chain for Demonstratives

*Look at
that!*

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



Exophoric
dem.

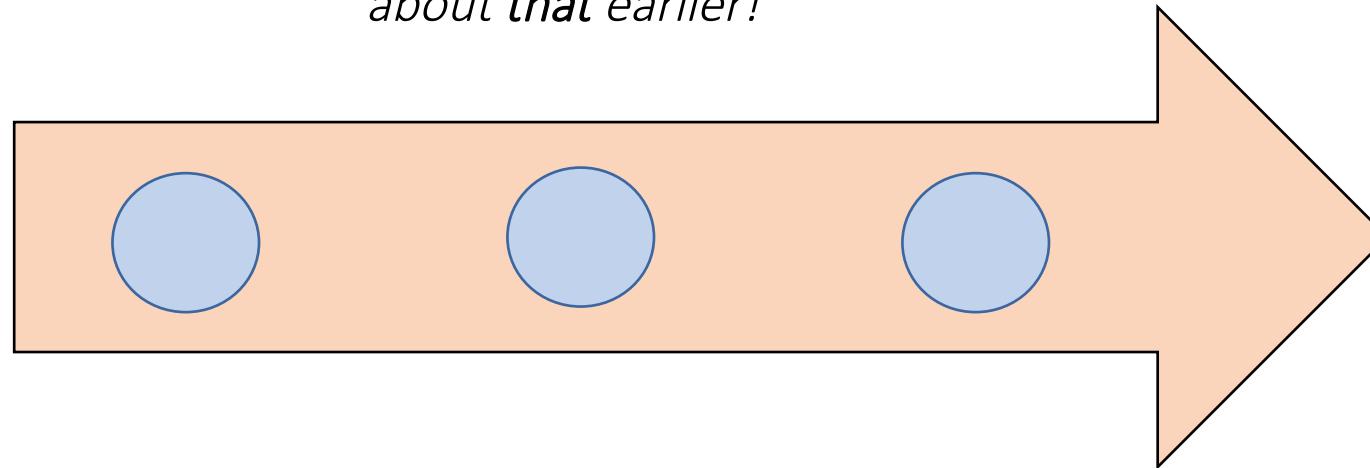
Endophoric
dem.

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

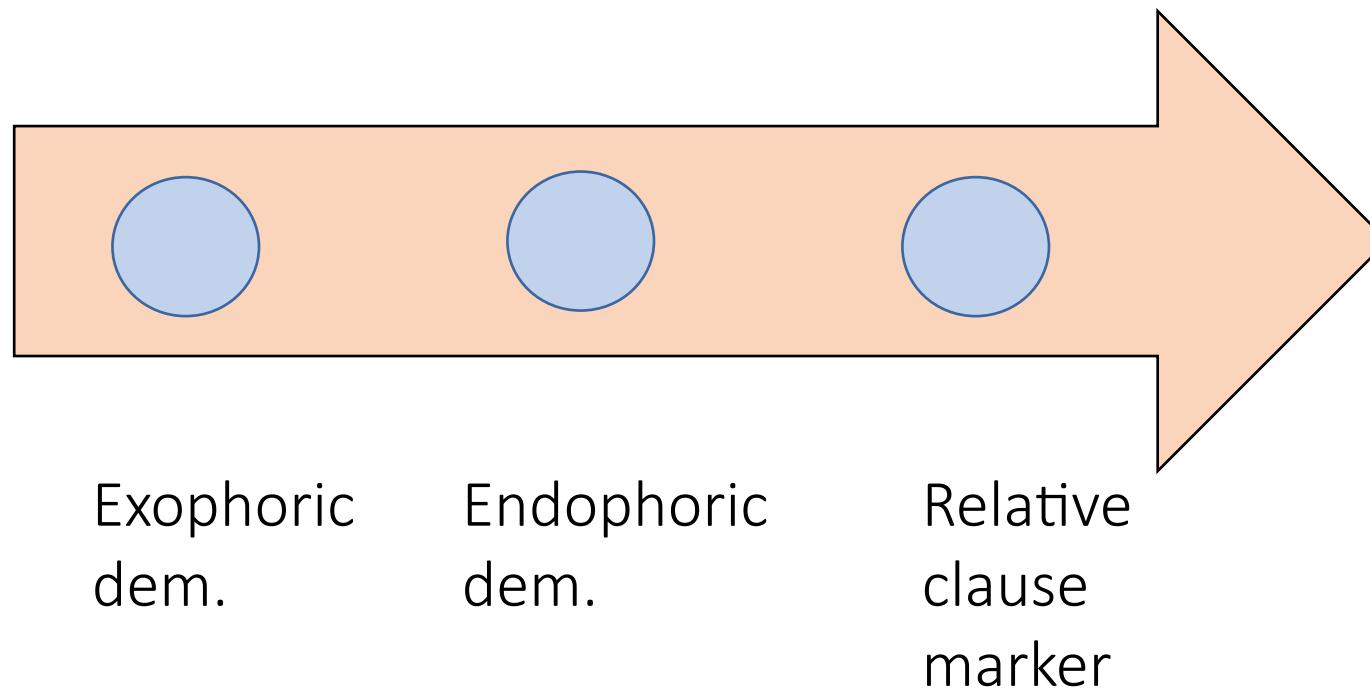
In SLs, pointing has all of these functions

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)



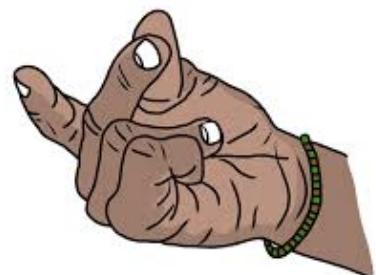
b)



c)



d)



Eco (1976)
Kendon (2003, 2004)
Wilkins (2003)
Haviland (2003)
Levinson (2003)
Ola Orie (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

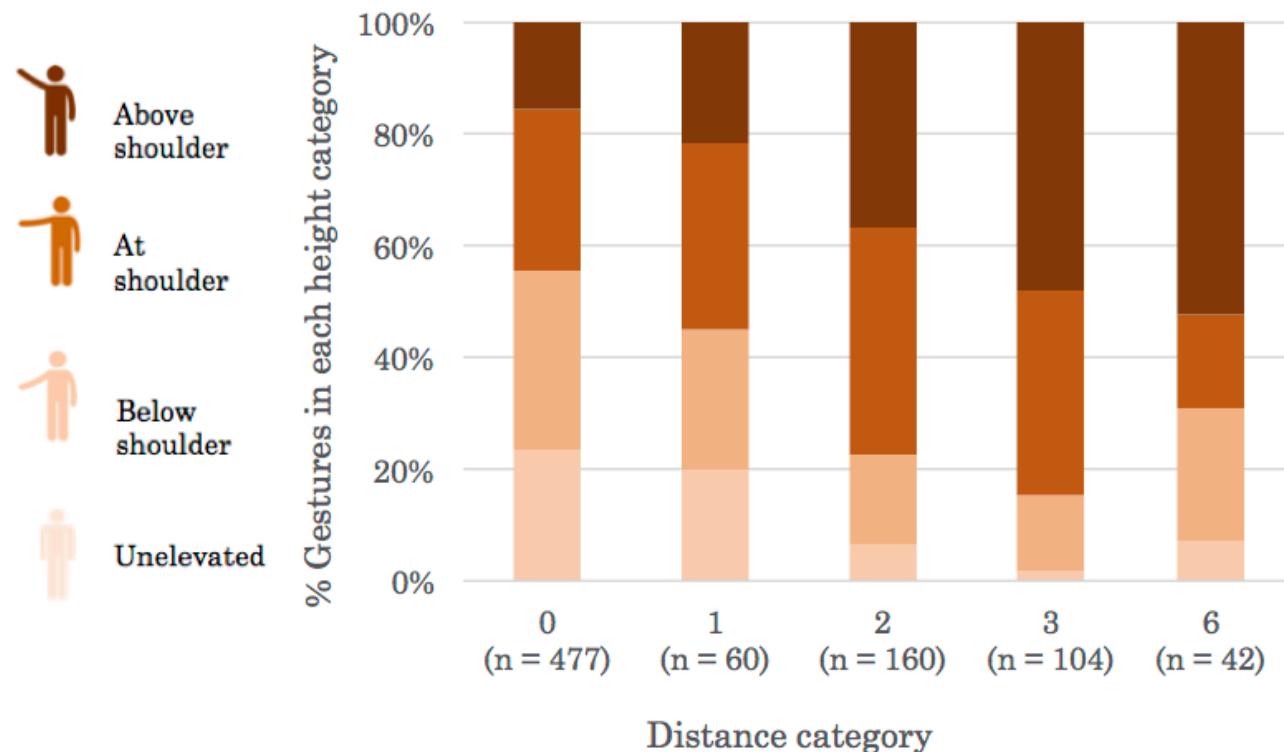


Other

Target Coding

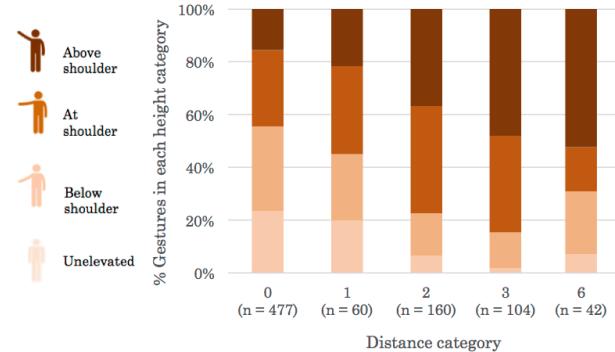


Hearing Gesturer Results: Elbow Height



Hearing Gesturer Results: Elbow Height

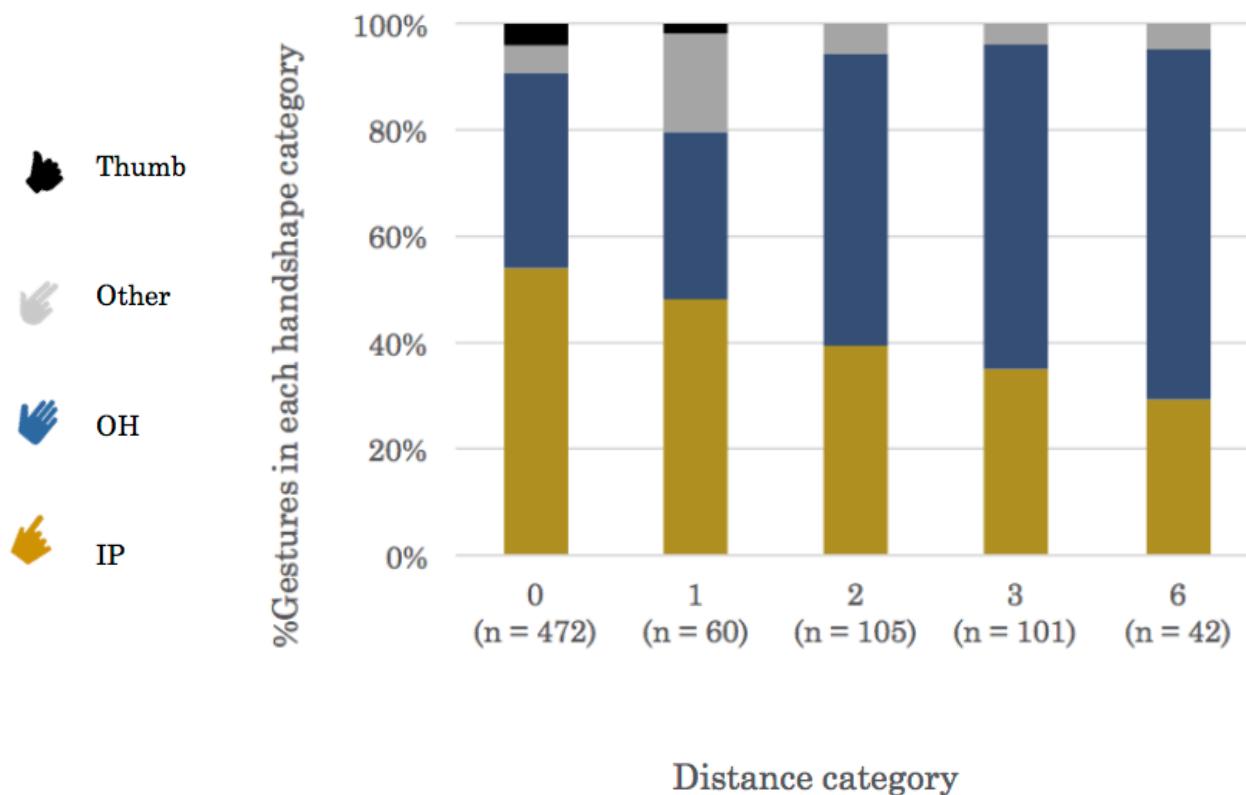
Effect of distance on elbow height



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		

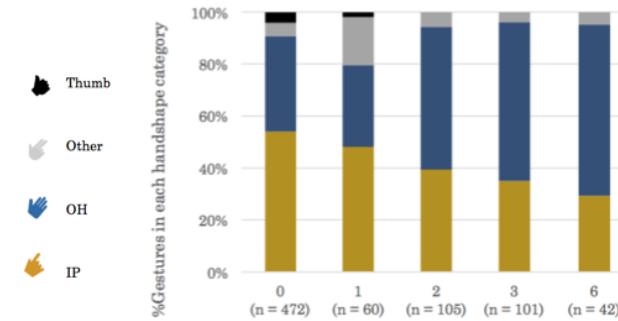
Table 4.5: Mixed effects linear regression analysis of distance and altitude effects on elbow height

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?

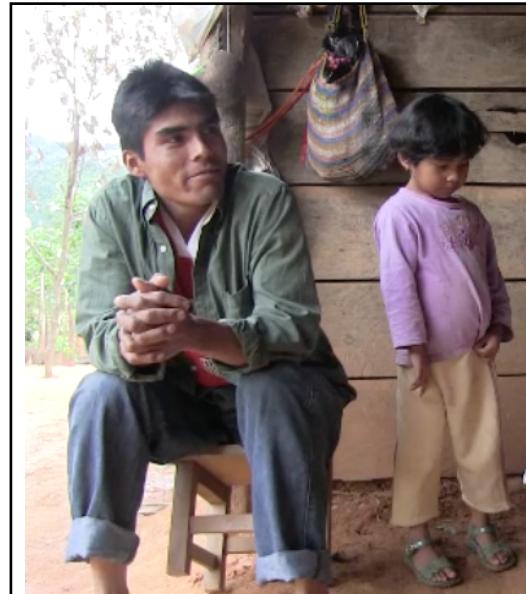




Koyu

51 years old

*1 deaf older
sibling*



Sendo

30 years old

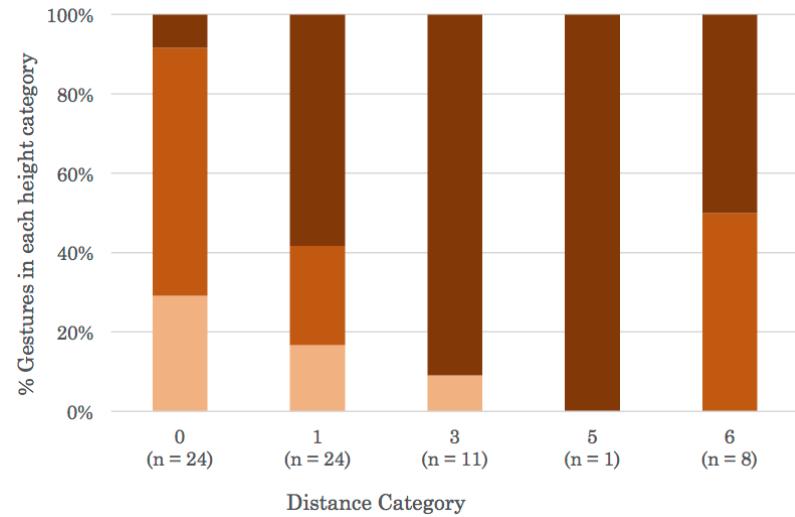
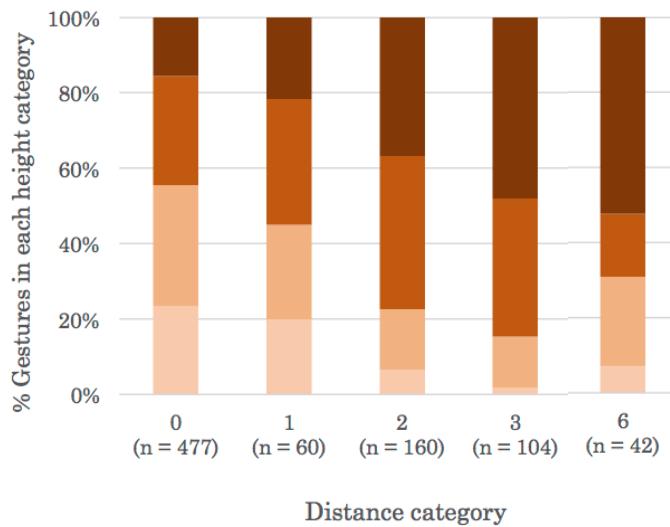
*No deaf
siblings*



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

Elbow height by distance

-  Above shoulder
-  At shoulder
-  Below shoulder
-  Unelevated

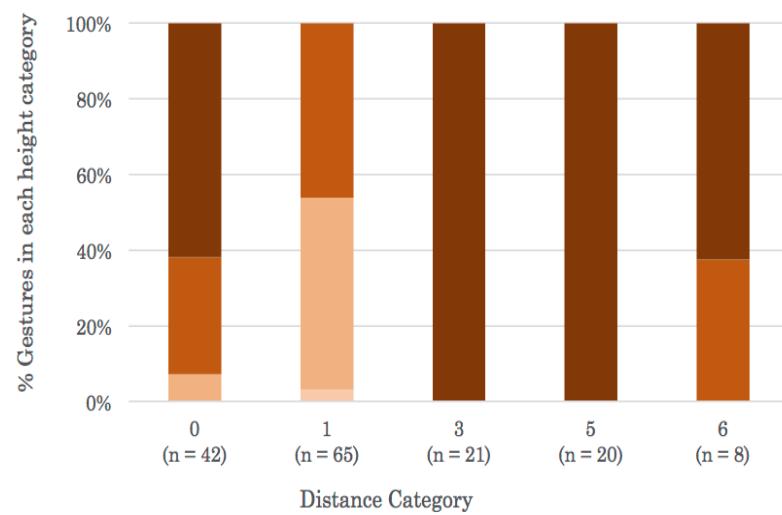
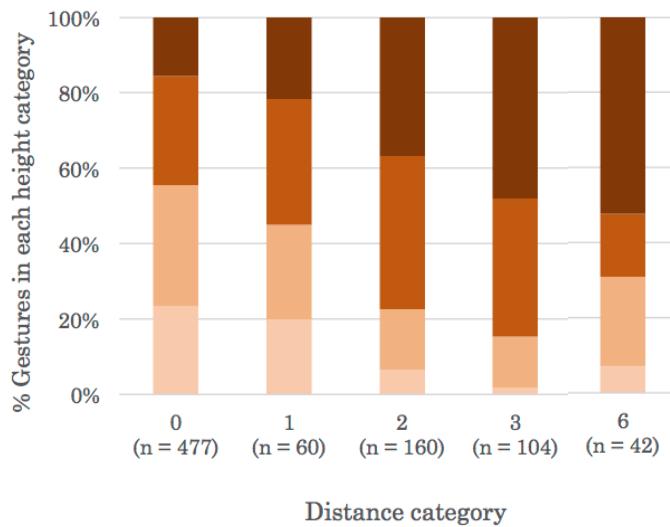


Speaker-Gesturers

Sendo

Elbow height by distance

-  Above shoulder
-  At shoulder
-  Below shoulder
-  Unelevated



Speaker-Gesturers

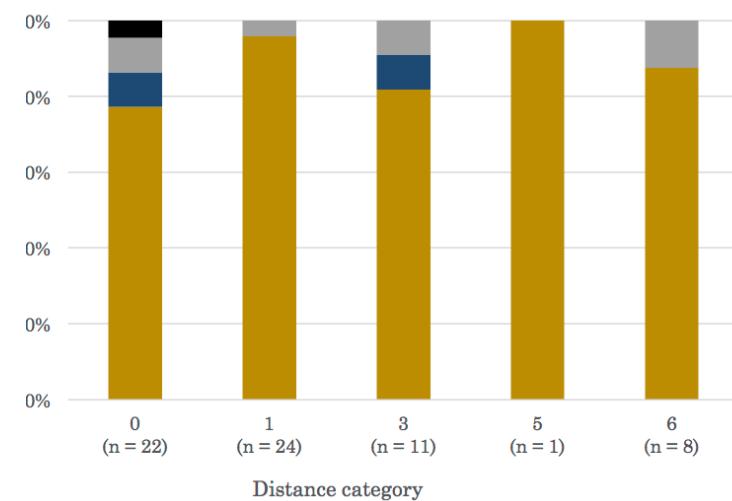
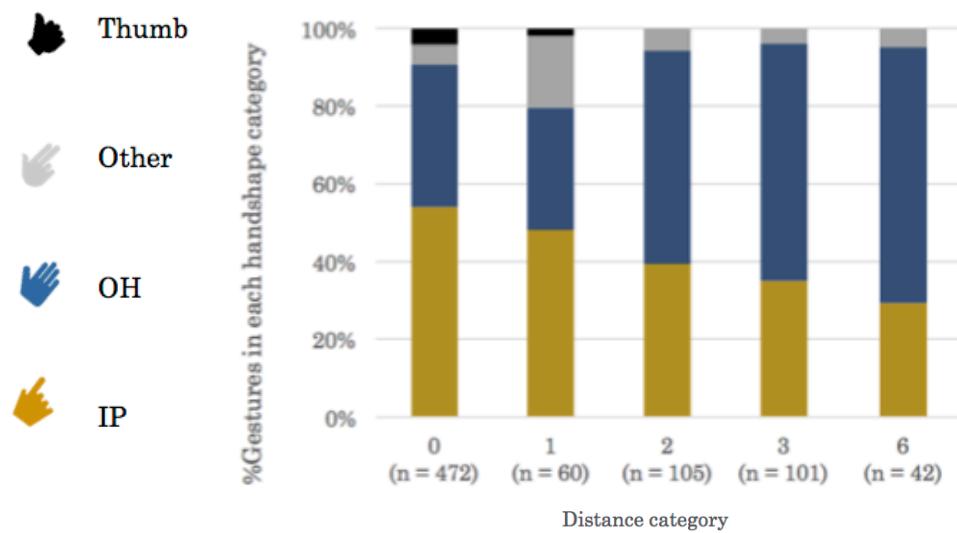
Koyu



Does pointing sign
handshape convey
information about
target distance?



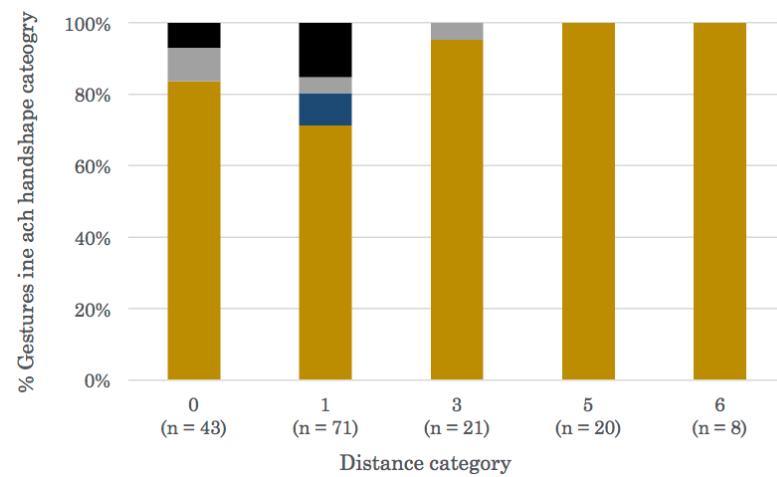
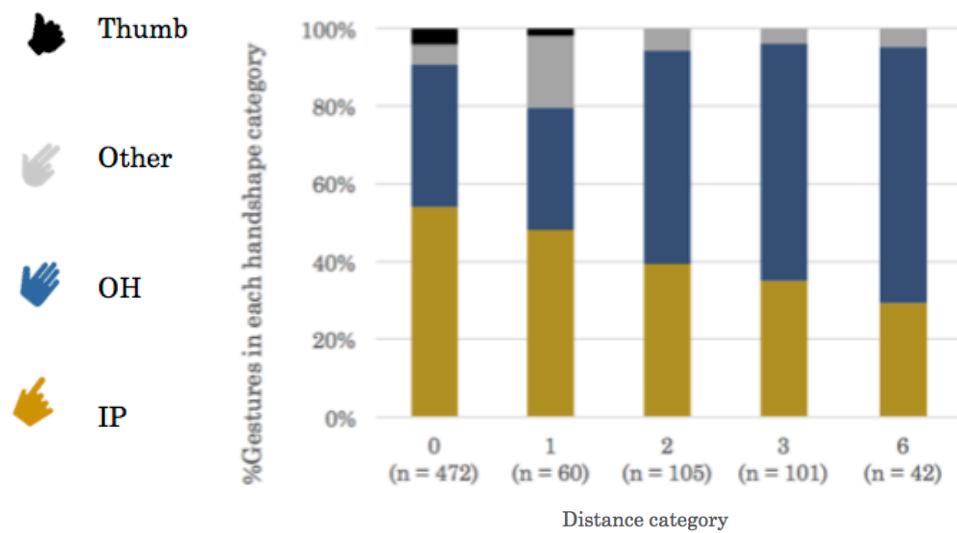
Handshape by distance



Speaker-Gesturers

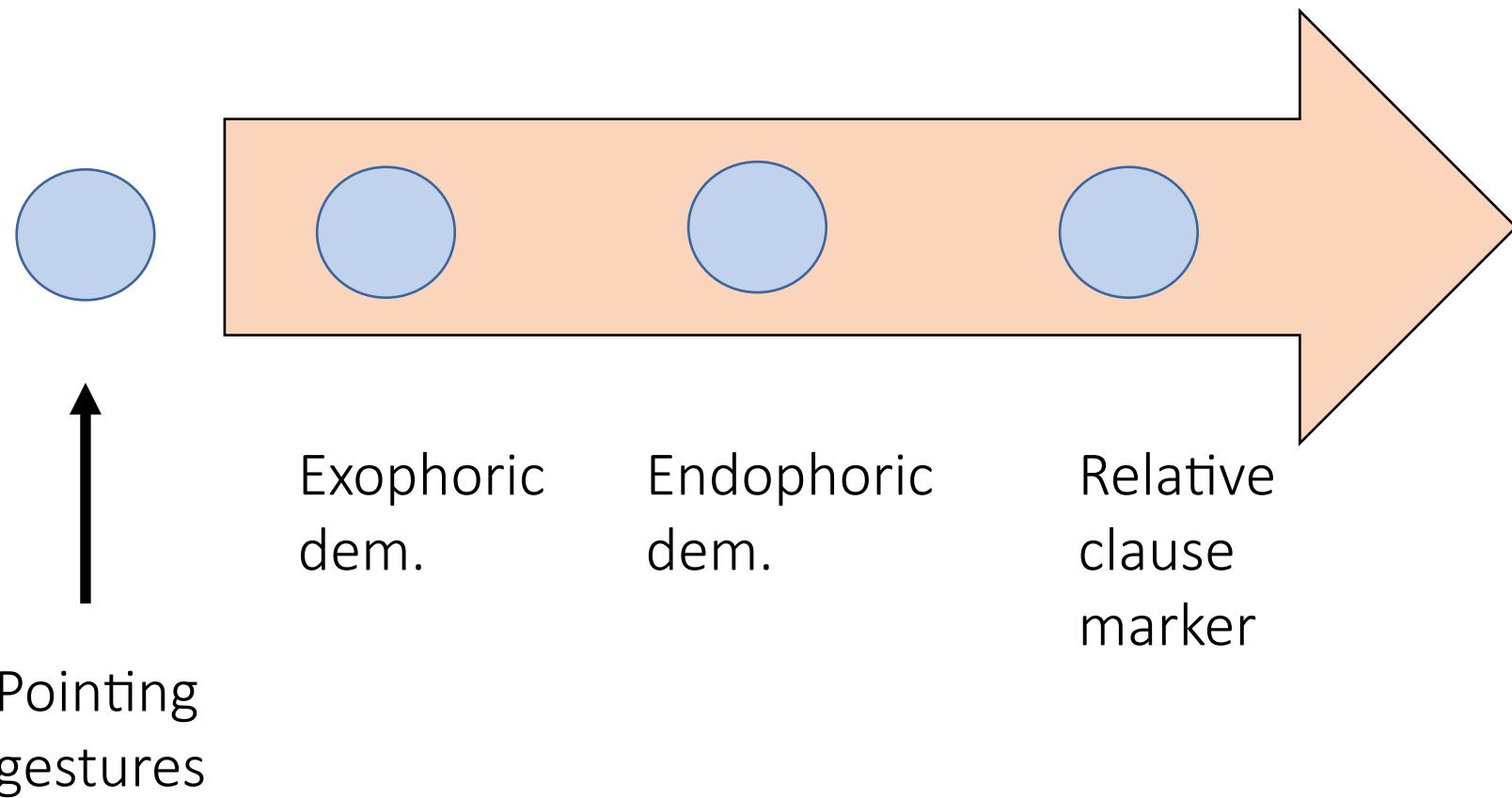
Sendo

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



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

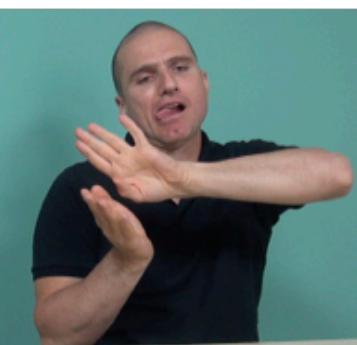
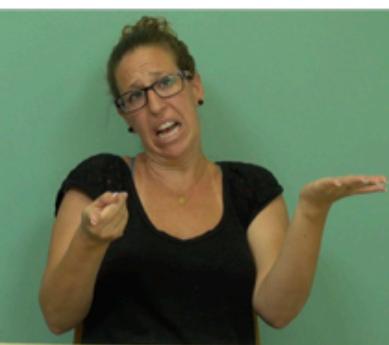


1950s: deaf social organizations mobilize

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

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

ISL Today

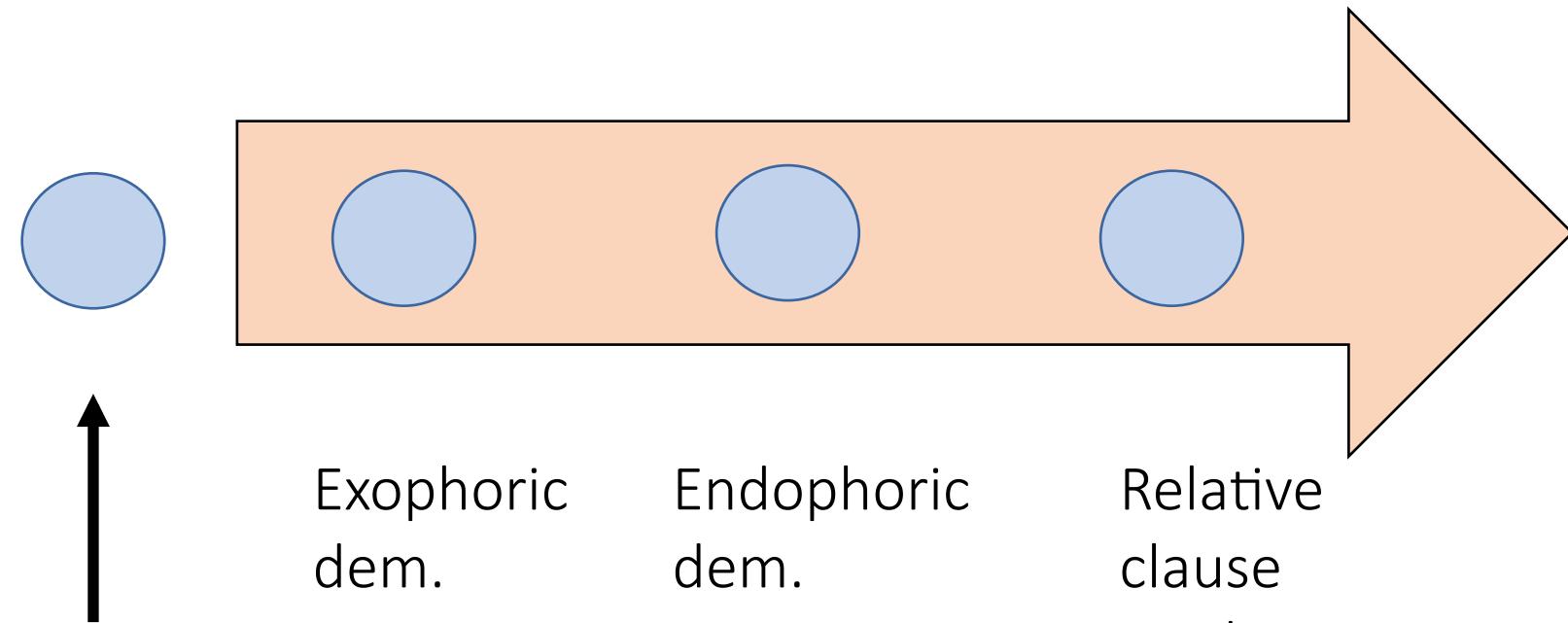


- Urban/National SL
- 10,000 signers
- 4 “generations” of signers across 80 years



Dachkovsky
(2016)

Sign Language Research Lab: University of Haifa



Pointing
gestures

Dachkovsky (2016)



Task (following Zukovski 2001):



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

Dachkovsky (2016)

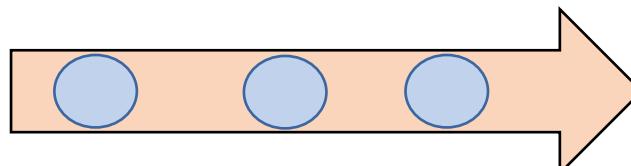


Dataset

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

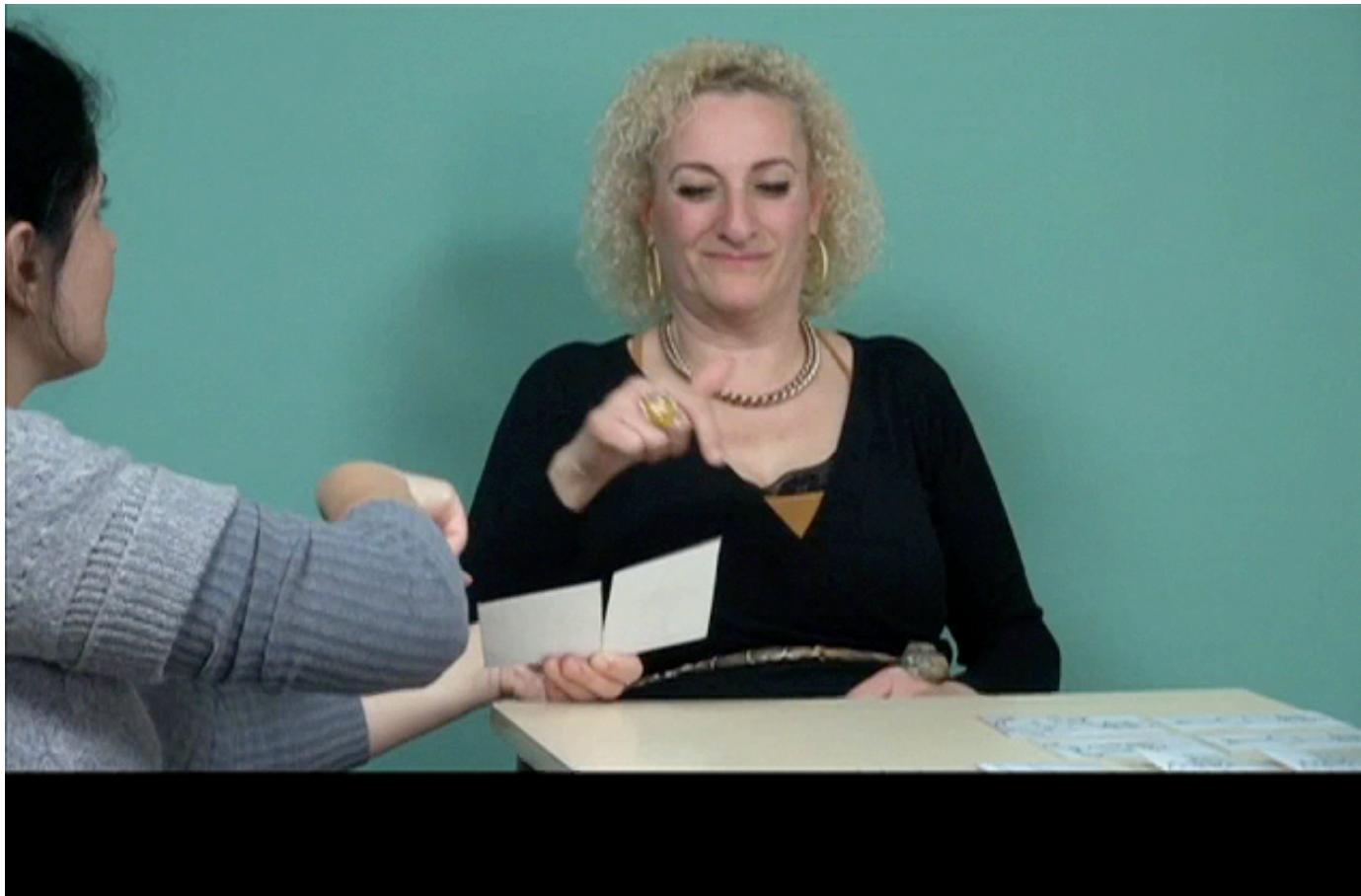


Dachkovsky
(2016)



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

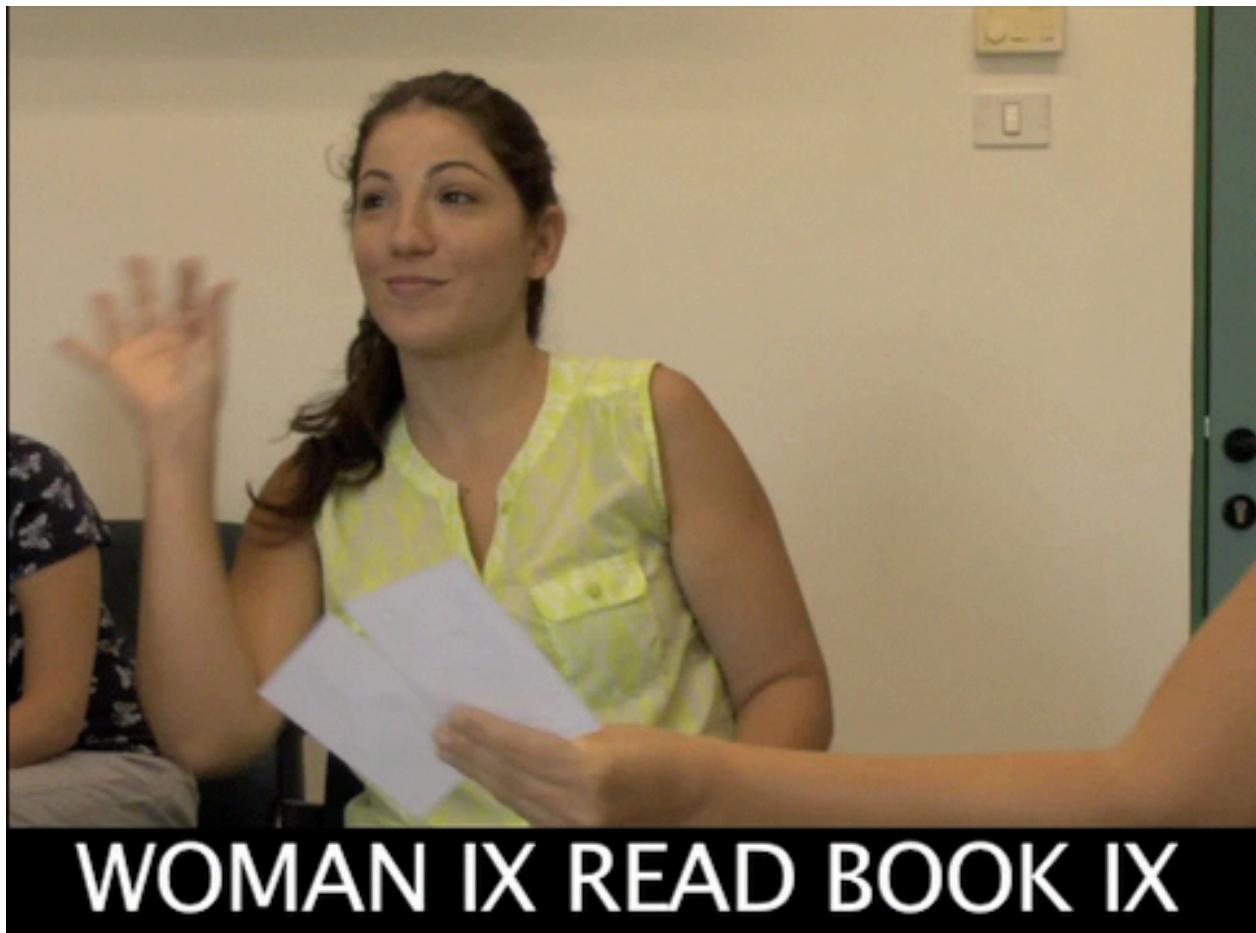


Dachkovsky
(2016)



Young participants (20-34)

- Overwhelmingly use points as RC markers

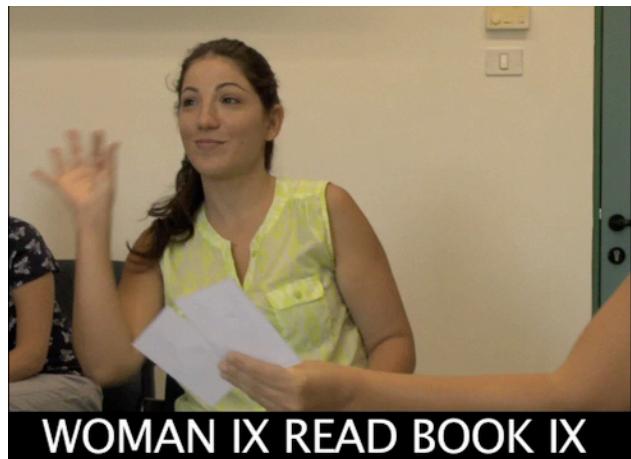


Dachkovsky
(2016)



Young participants (20-34)

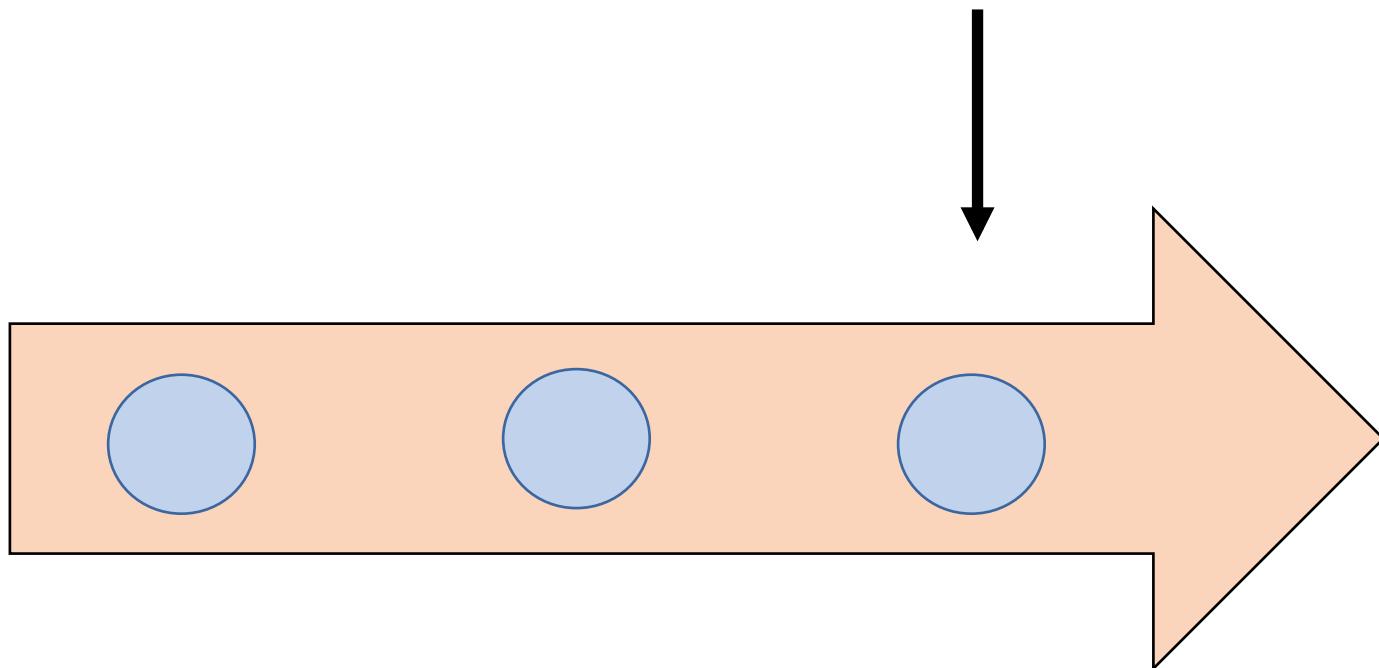
- What is the evidence for grammaticalization?
 - Change in function
 - Morphosyntactic Change
 - Phonological Reduction



WOMAN IX READ BOOK IX

Dachkovsky
(2016)





Exophoric
dem.

Endophoric
dem.

Relative
clause
marker



Dachkovsky (2016)



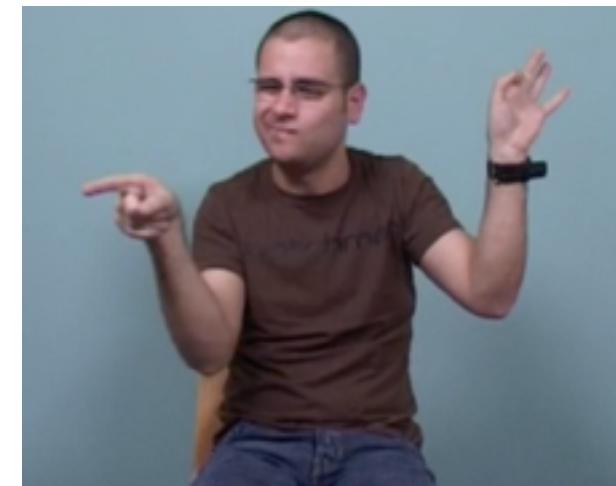
SJQCSL

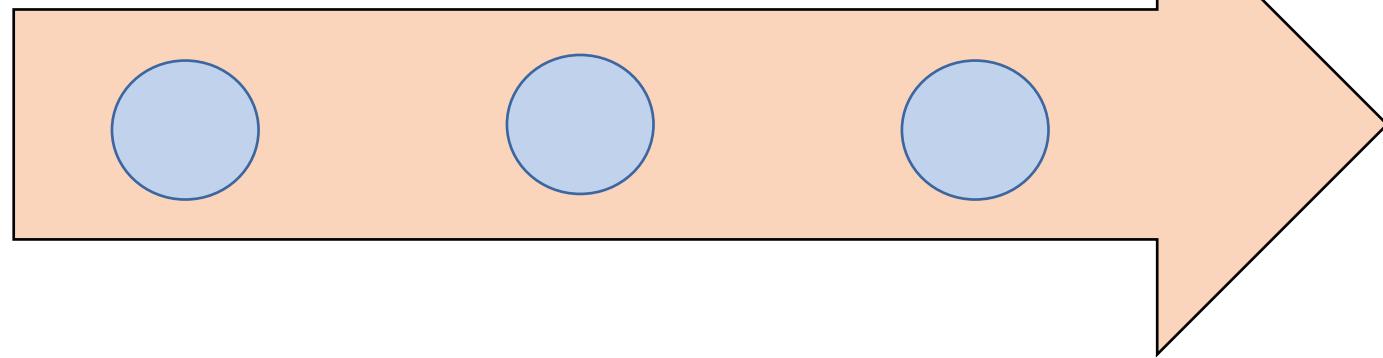
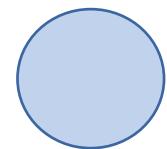
- Family SLs
- ~20+ signers
- ~ 55 years old



ISL

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



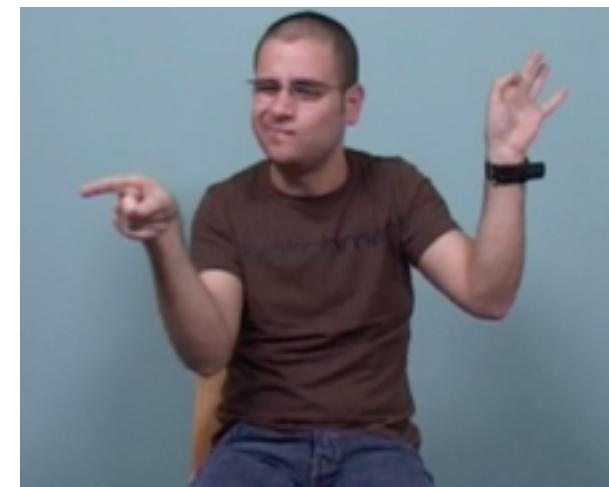


Exophoric
dem.

Endophoric
dem.

Relative
clause
marker

Pointing
gestures



Questions?

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Many thanks to



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

gibrán mórdés c. 2012

References

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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 Orie (2009), retrieved from <http://www.orishaimage.com/blog/yoruba-gestures>