



The Grammar of the Body

Sign Language Research Lab, University of Haifa



Changes in the compositionality of indicating signals in the course of grammaticalisation

Svetlana Dachkovsky, Kate Mesh,
Wendy Sandler & Rose Stamp

University of Haifa

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Introduction



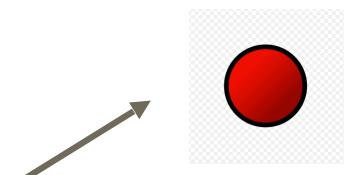
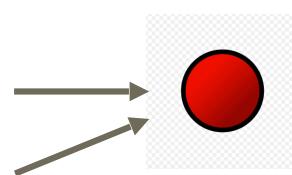
Road Map



- Background:
 - what are **indicating expressions?**
 - how do they develop grammatical functions in sign language?
- Research question: what happens to **eye gaze** when **manual points** develop grammatical functions?
- Our study: gaze & manual points in gesturers & signers

Indicating expressions

- indicate the location of an object or the direction of movement
- coordinate the attentional focus of the communicative partners



Functions of indicating expressions

Exophoric

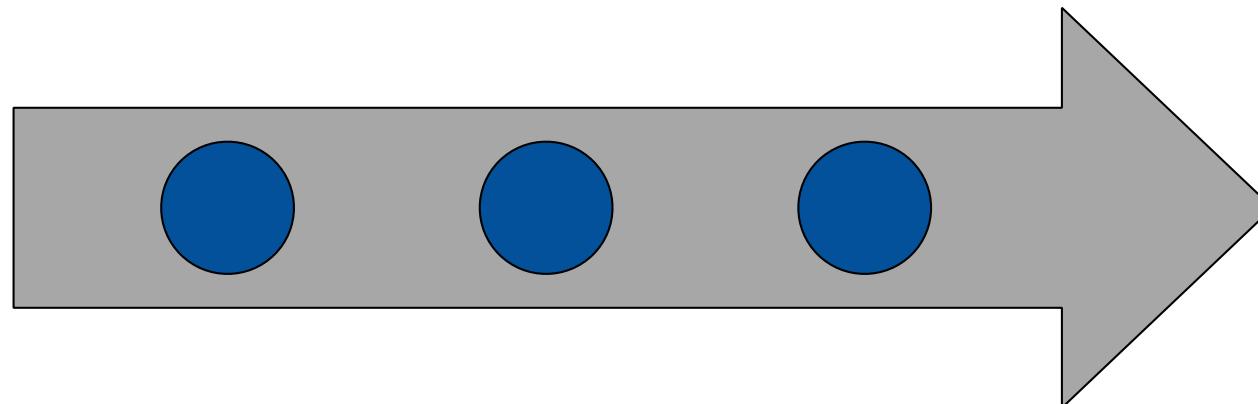
External reference
to real objects in space

Endophoric

Discourse and text
internal reference

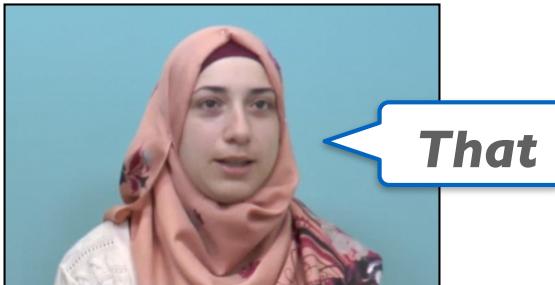
Syntactic

clause connectivity,
no referencing

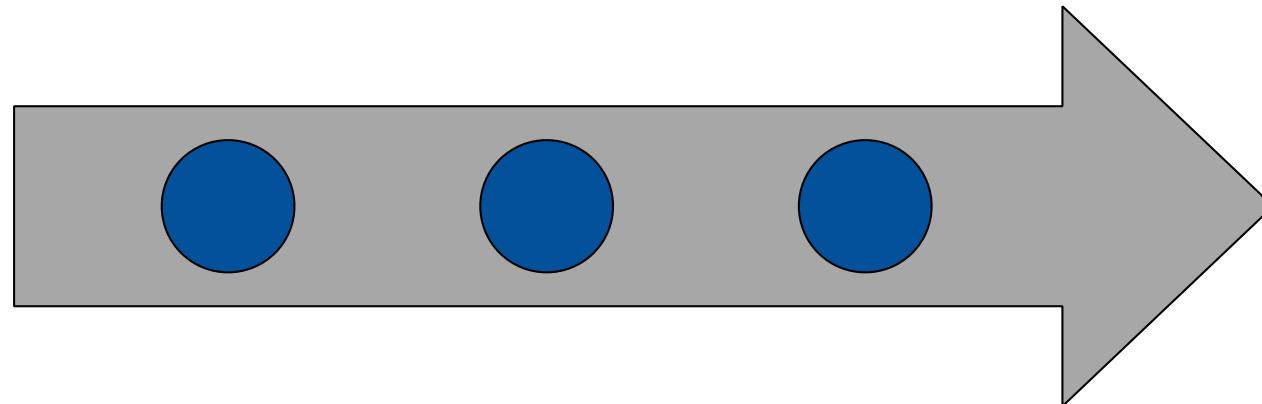


(cf. Fillmore 1982, Levinson 2004, Diessel 2005)

Grammaticalization of indicating expressions



Well-documented grammaticalization chain for demonstrative expressions
(Cf. Diessel 1999, 2005; Traugott, 1999)



Exophoric
demo.

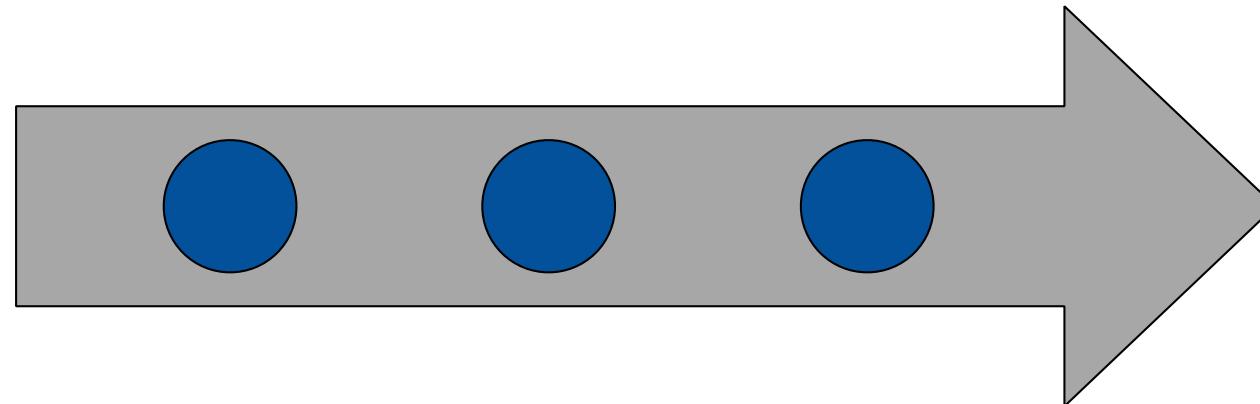
Endophoric
demo.

Syntactic
marker

Grammaticalization of indicating expressions



Theorized grammaticalization chain
for pointing in sign languages
(Cf. Pfau & Steinbach, 2006)



Exophoric
pointing

Endophoric
pointing

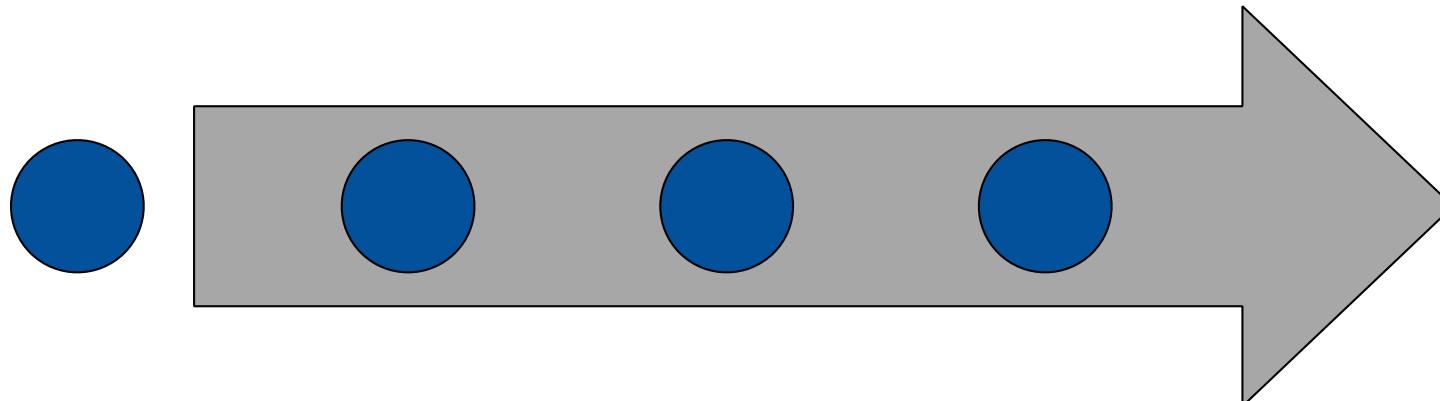
Syntactic
marker

Grammaticalization of indicating expressions



Theorized grammaticalization chain
for pointing in sign languages
(Cf. Pfau & Steinbach, 2006)

Pointing
gestures



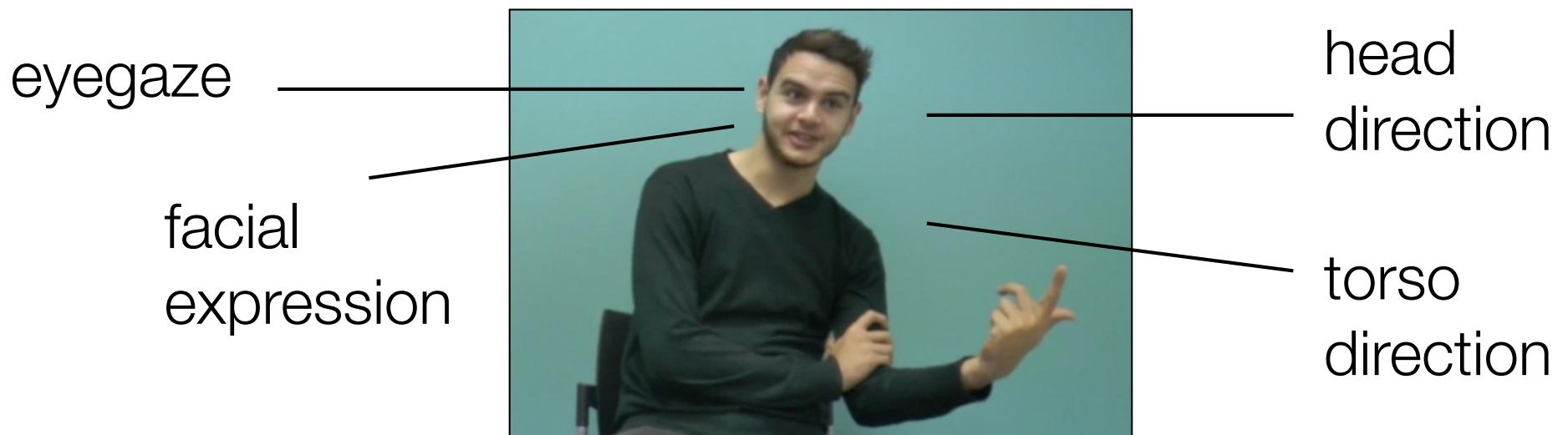
Exophoric
pointing

Endophoric
pointing

Syntactic
marker

Indicating expressions are joined by other signals

Spoken indicating expressions and manual points are co-organized with:



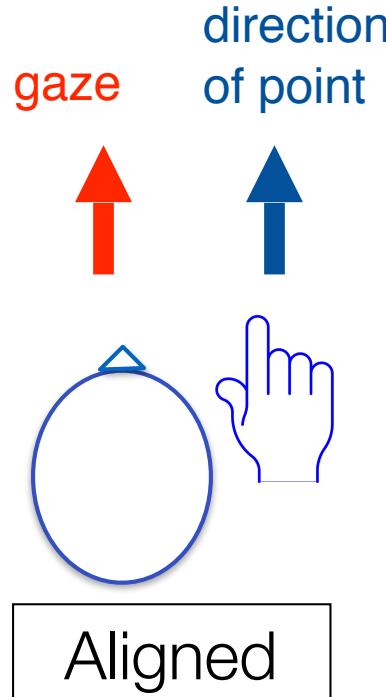
(cf. Cooperrider, 2014; Engberg-Pedersen, 2003;
Kita 2003; Morgenstern, 2014; Pfau, 2011)

Indicating expressions are joined by other signals

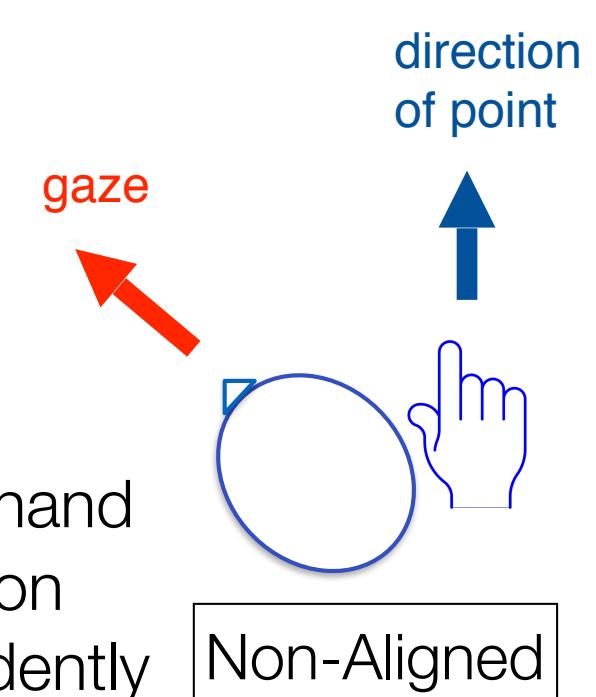
manual points

eyegaze

Gaze & hand
indicate the same
location in space

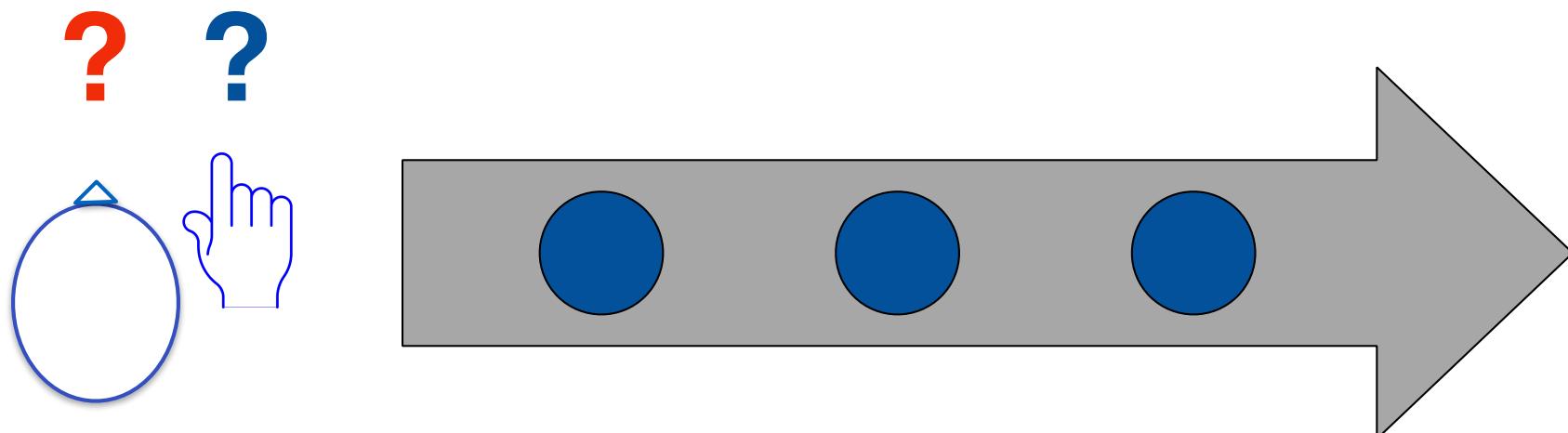


Gaze & hand
function
independently



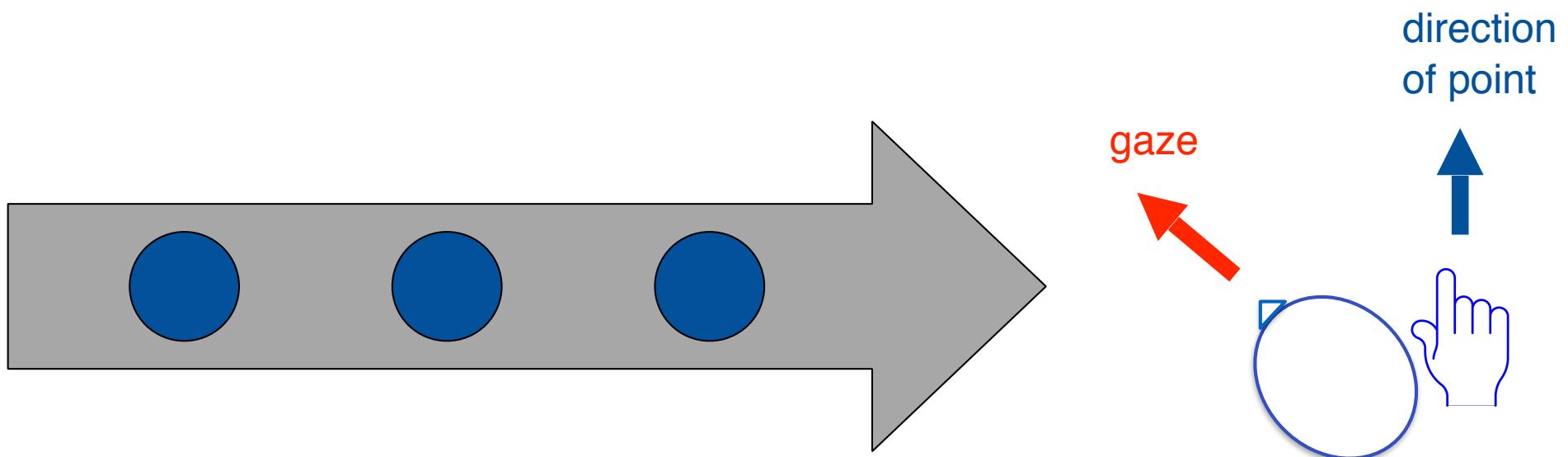
Research Question

When manual points grammaticalize in a young sign language, what happens to the accompanying gaze signal?



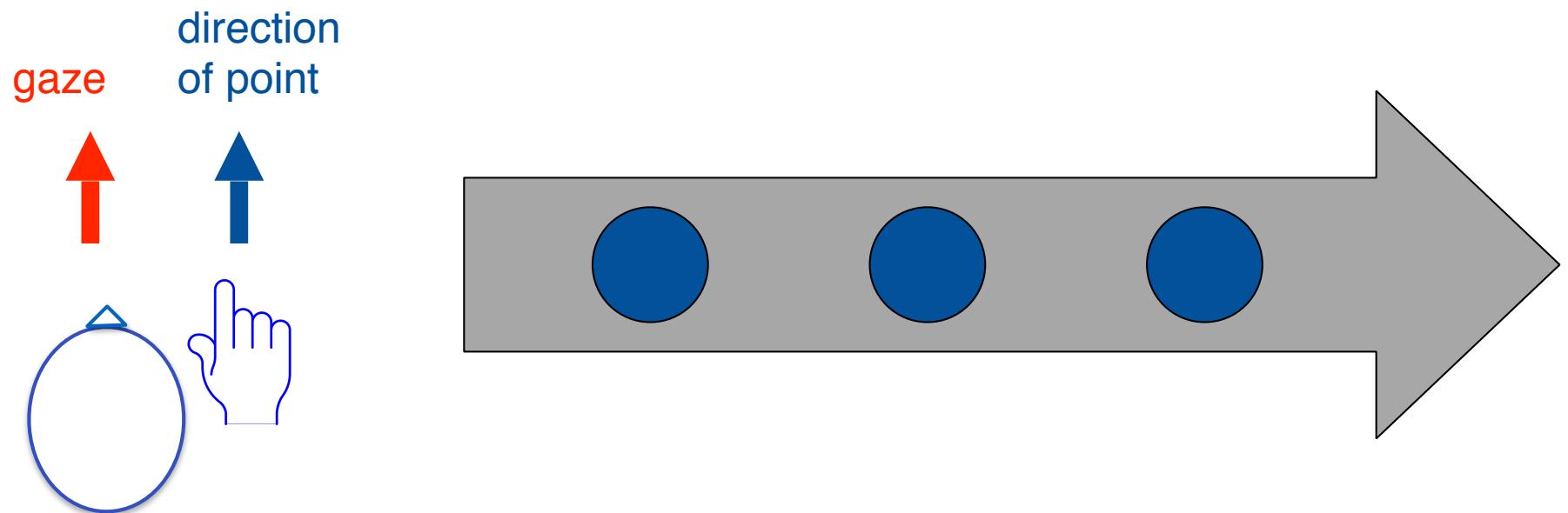
Hypotheses

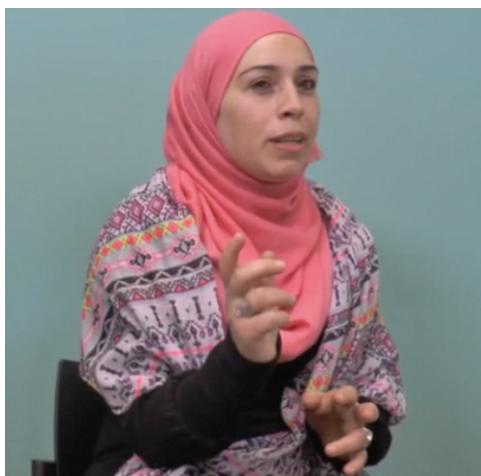
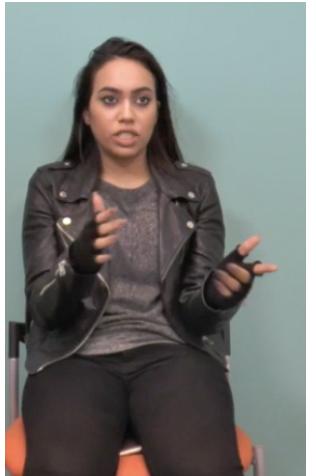
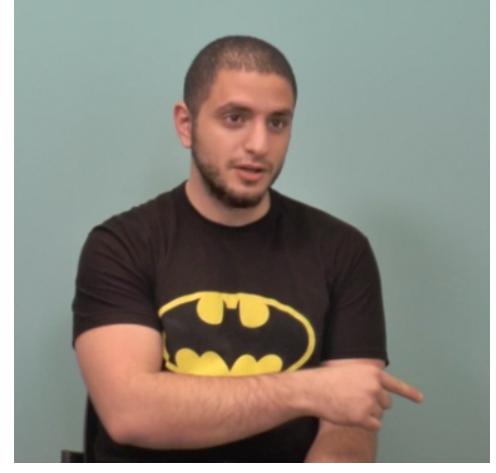
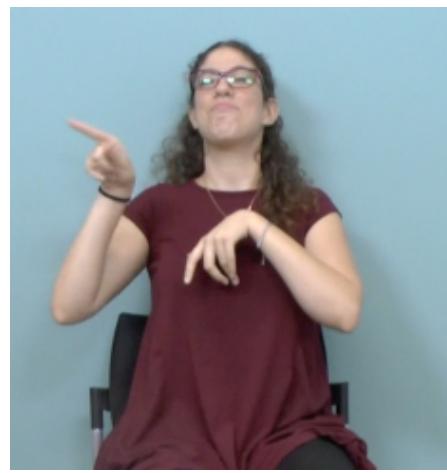
H1. As manual points grammaticalize in a young sign language, the alignment of gaze with manual points reduces



Hypotheses

H2. Gesturers, as representative of the beginning of the grammaticalization chain, exhibit more gaze alignment than signers





Participants

- 14 speakers of Hebrew/Arabic/English
 - Ages 17-45
- 15 Israeli Sign Language (ISL) signers
 - From 3 age groups:
 - 5 younger (18-34)
 - 5 middle (35-54)
 - 5 older (55+)



Study: Task

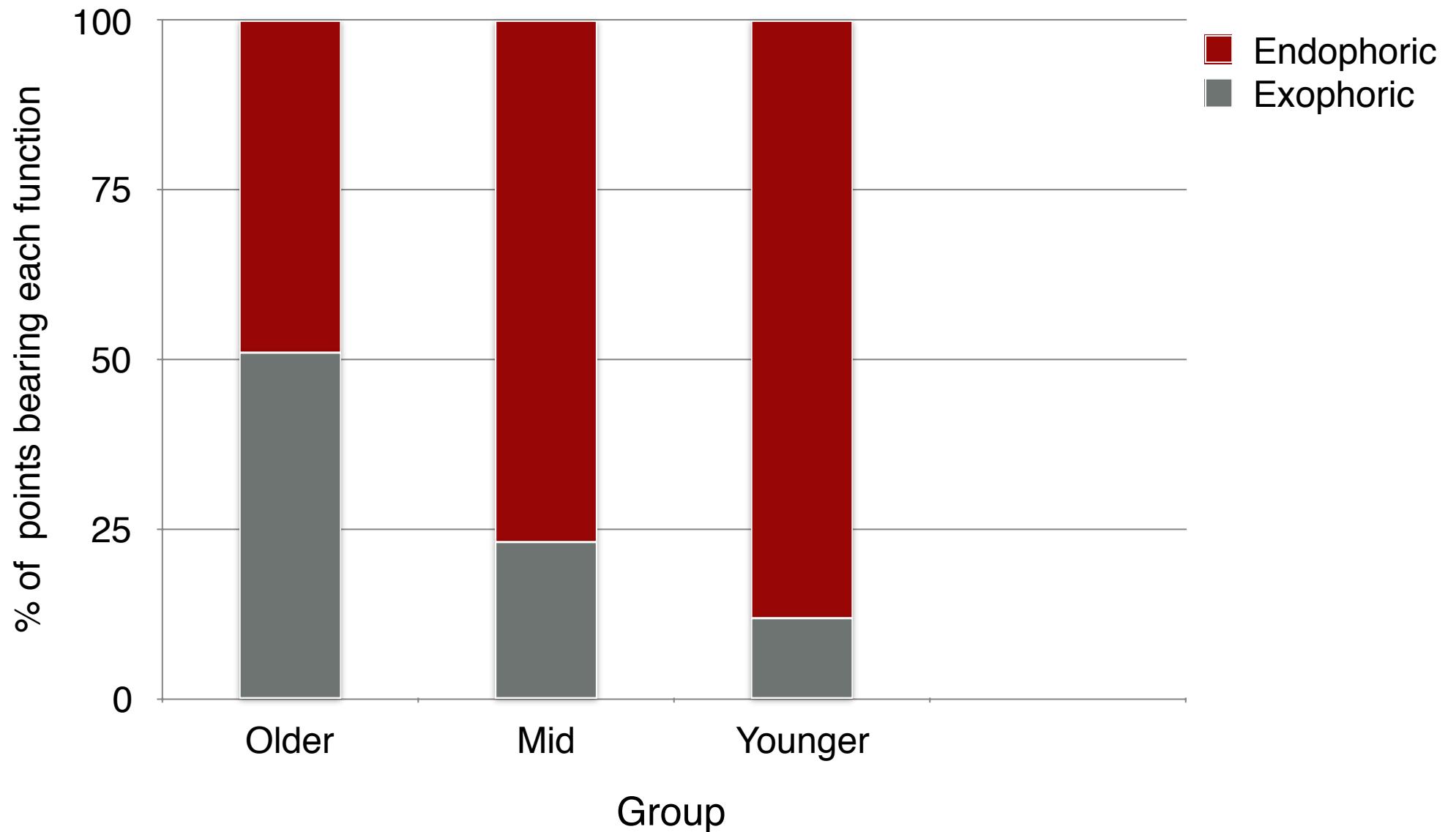
- Participants retold the stories of Charlie Chaplin's *The Lion's Cage* and *The Kid*



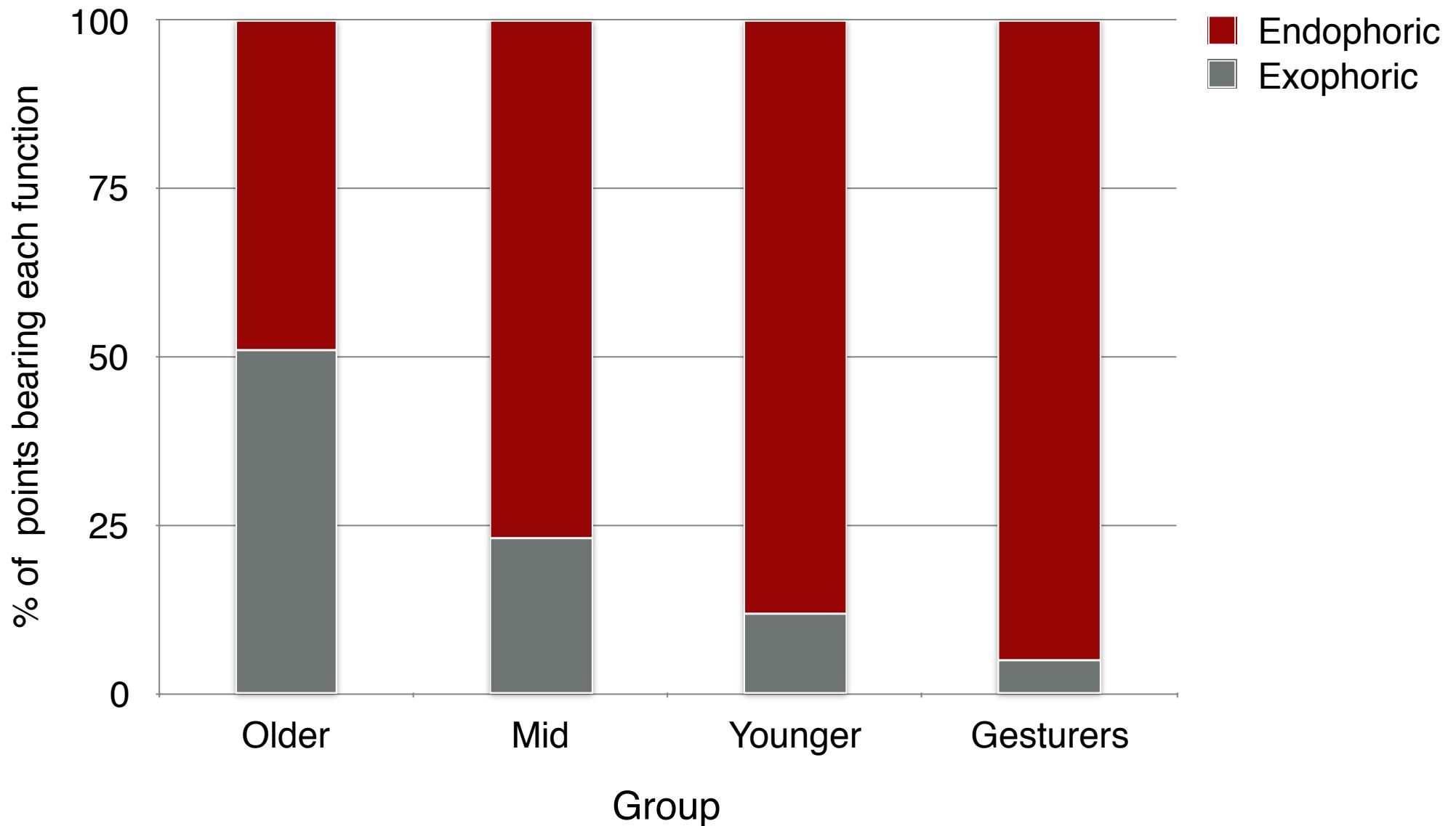
Study: Coding

- 177 pointing gestures, 180 pointing signs, coded with:
 - Function of point
 - Gaze (Aligned/ Non-Aligned)
-
- The diagram illustrates the coding of pointing gestures. It features two main columns. The left column, labeled 'Exophoric' (with a red 'gaze' arrow), shows a blue circle representing 'External reference to real objects in space'. The right column, labeled 'Endophoric' (with a red 'gaze' arrow), shows a blue circle representing 'Discourse and text internal reference'. Below each column is a hand icon pointing towards the circle. A large blue double-headed arrow between the columns is labeled 'direction of point'. At the bottom of each column is a box labeled 'Aligned' or 'Non-Aligned', corresponding to the gaze alignment.
- direction of point
- Exophoric
- External reference to real objects in space
- gaze
- Endophoric
- Discourse and text internal reference
- gaze
- direction of point
- Aligned
- Non-Aligned

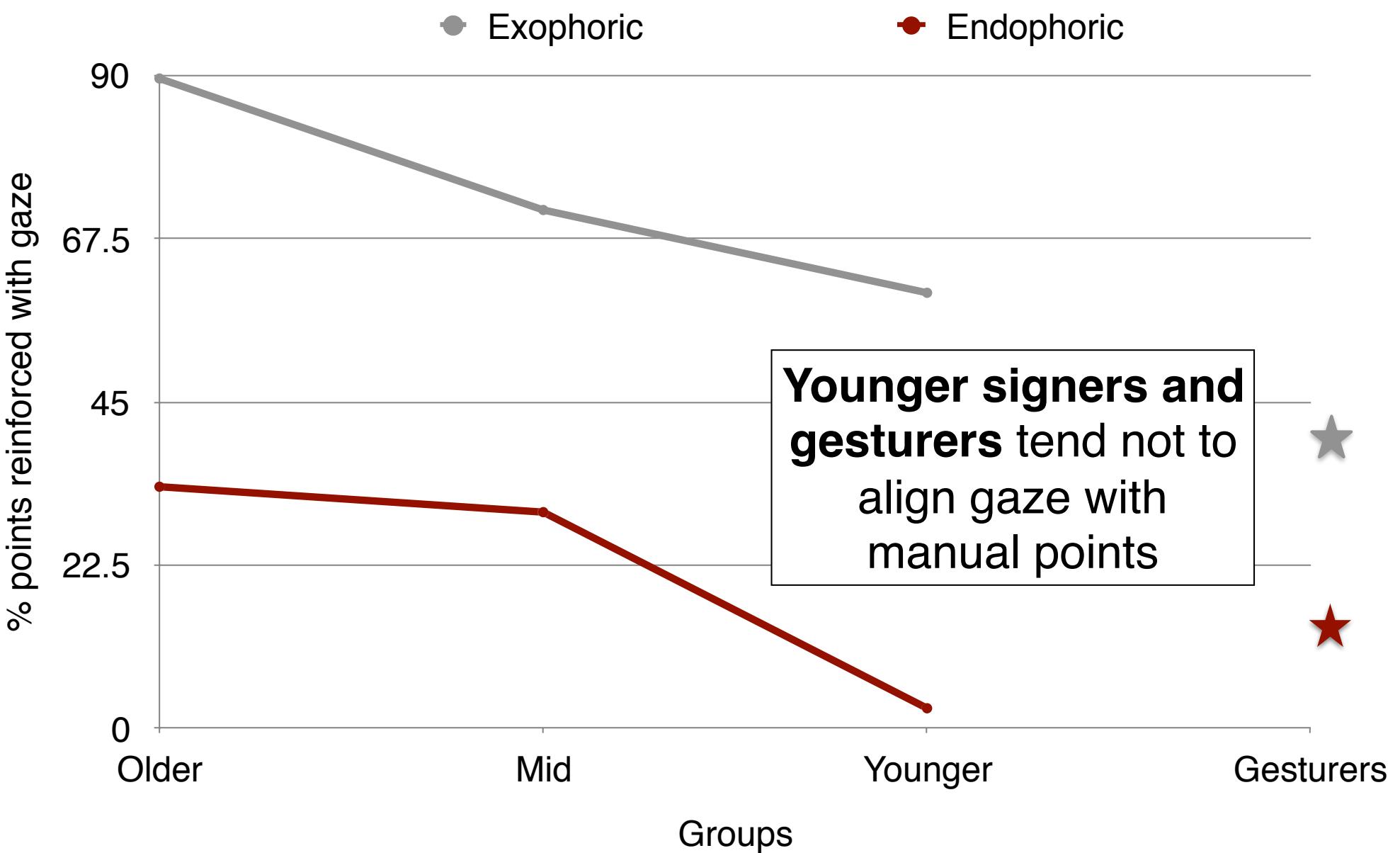
Functions of points in the data



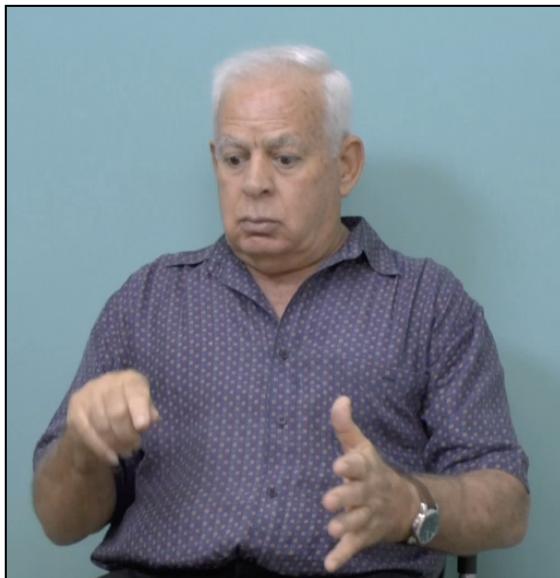
Functions of points in the data



Results: manual point and gaze alignment across groups



Older Signers



WHAT-TO-DO PUT-DOWN-CONTAINER
IX RESCUE WATER POUR-WATER

Charlie thinks 'what to do, what to do'; he wants her [the girl] to rescue him so he pours water over her

Endophoric: Older Signers



eyegaze

direction
of point



Endophoric: Older Signers

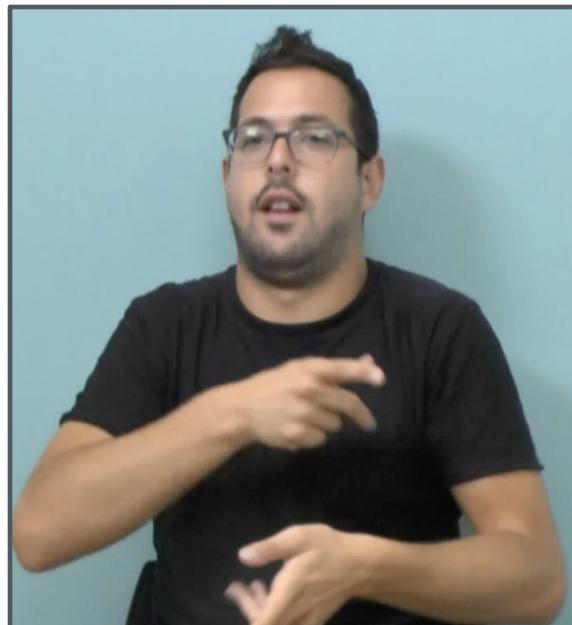


eyegaze

direction
of point



Endophoric: Younger Signers



HORSE RUN FRIGHTEN IX RUN WHAT
OPEN-AND-CLOSE-DOOR

*The horse startles Charlie Chaplin;
he runs and opens and slams
the [cage] door*

Endophoric: Younger Signers

eyegaze

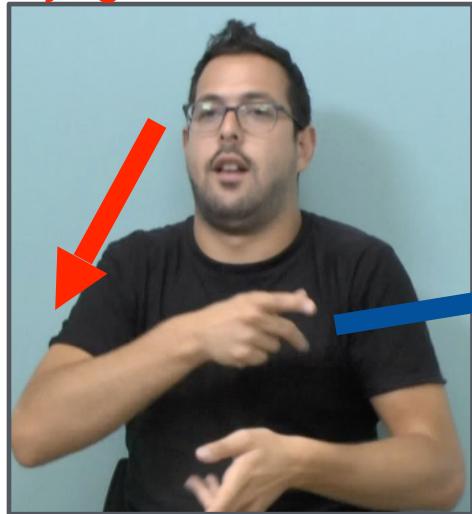


direction of point



Younger Signers

eyegaze



direction of point



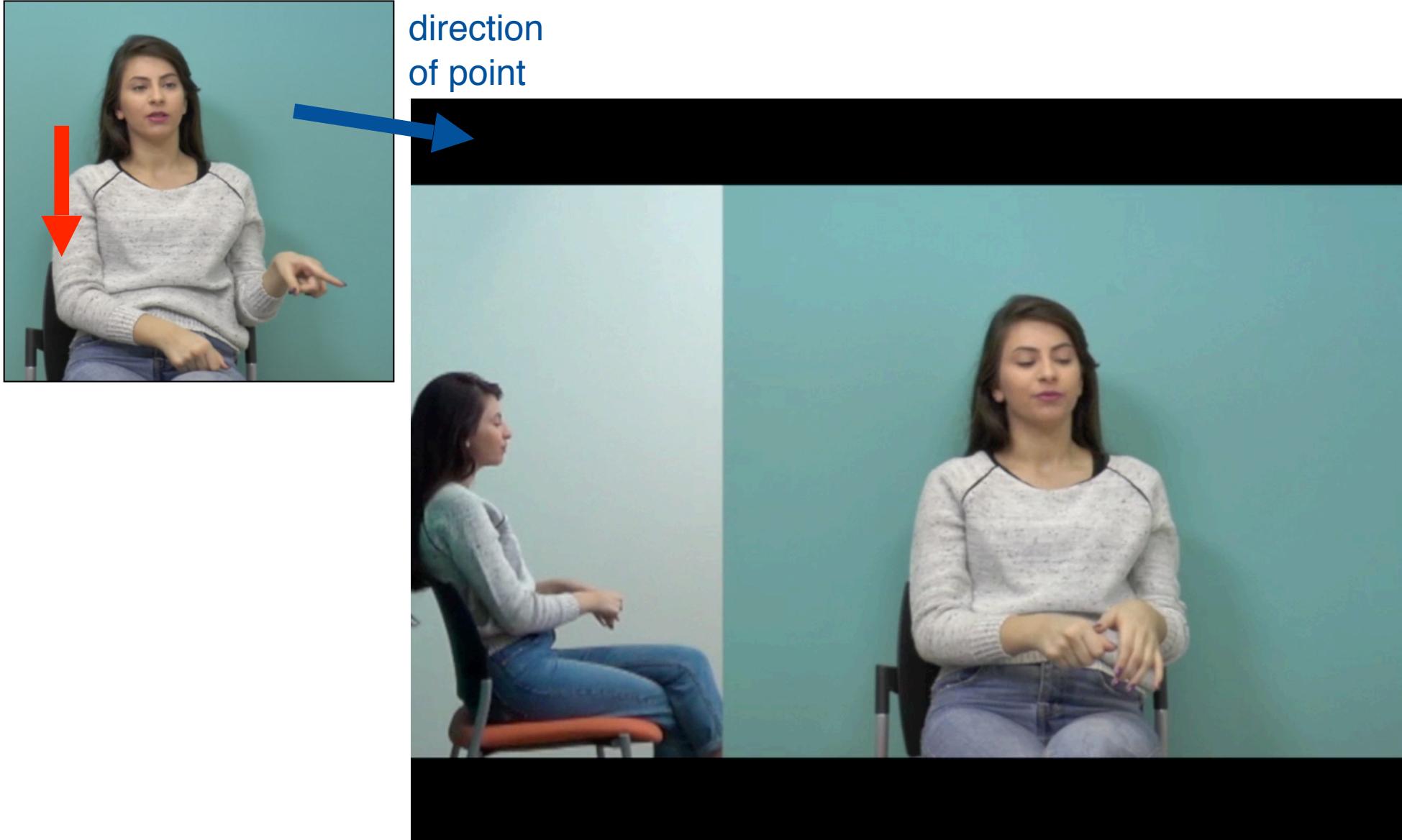
Endophoric: Gesturers



*[he hits the glass with a stone];
the window glass*

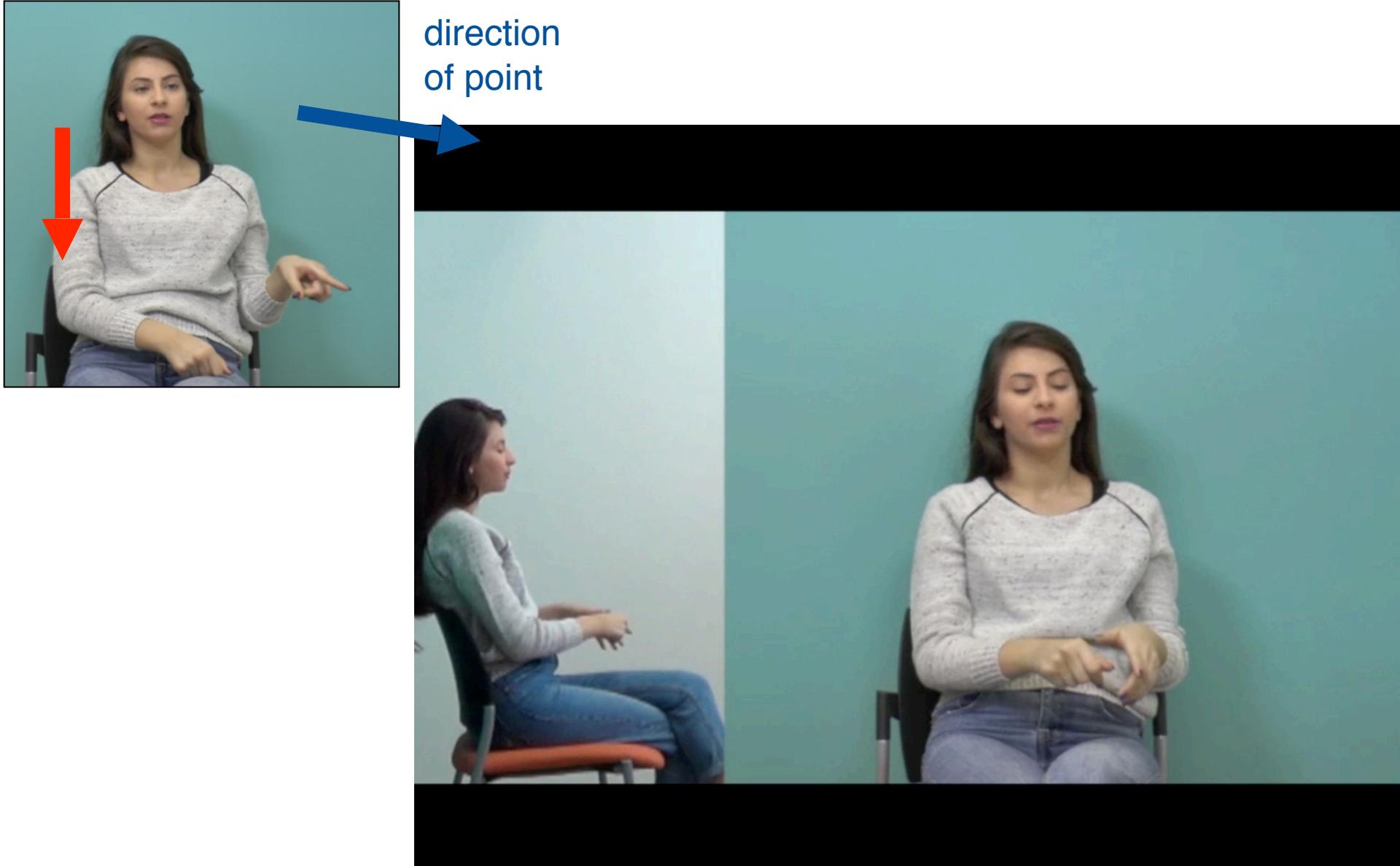
eyegaze

Endophoric: Gesturers



eyegaze

Endophoric: Gesturers



H1. As manual points grammaticalize in a young sign language, the alignment of gaze with manual points reduces

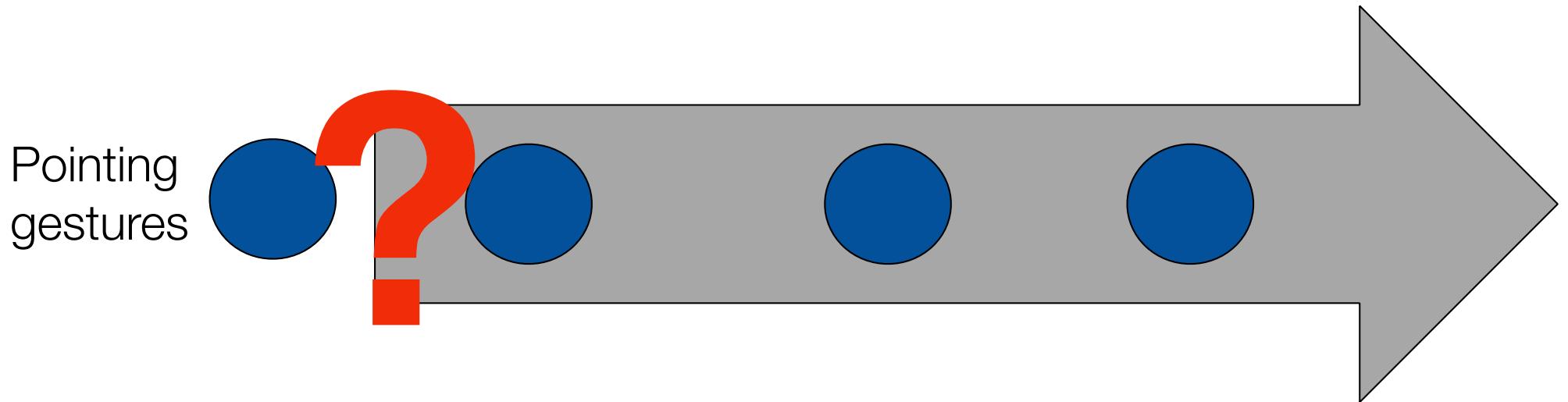
Our findings support the hypothesis.

H2. Gesturers, as representative of the beginning of the grammaticalization chain, exhibit more gaze alignment than signers

This was not the case: gesturers pattern with younger signers in exhibiting non-alignment

Younger signers and gesturers are users of linguistically complex systems.

Gestures are integral part of language.



Levelt (1985); Gullberg (2006); Perniss and Ozyrek (2015)

What does the “stripping” of manual points from gaze afford to language users?

It frees the pointing sign to occur productively in a variety of linguistic composites

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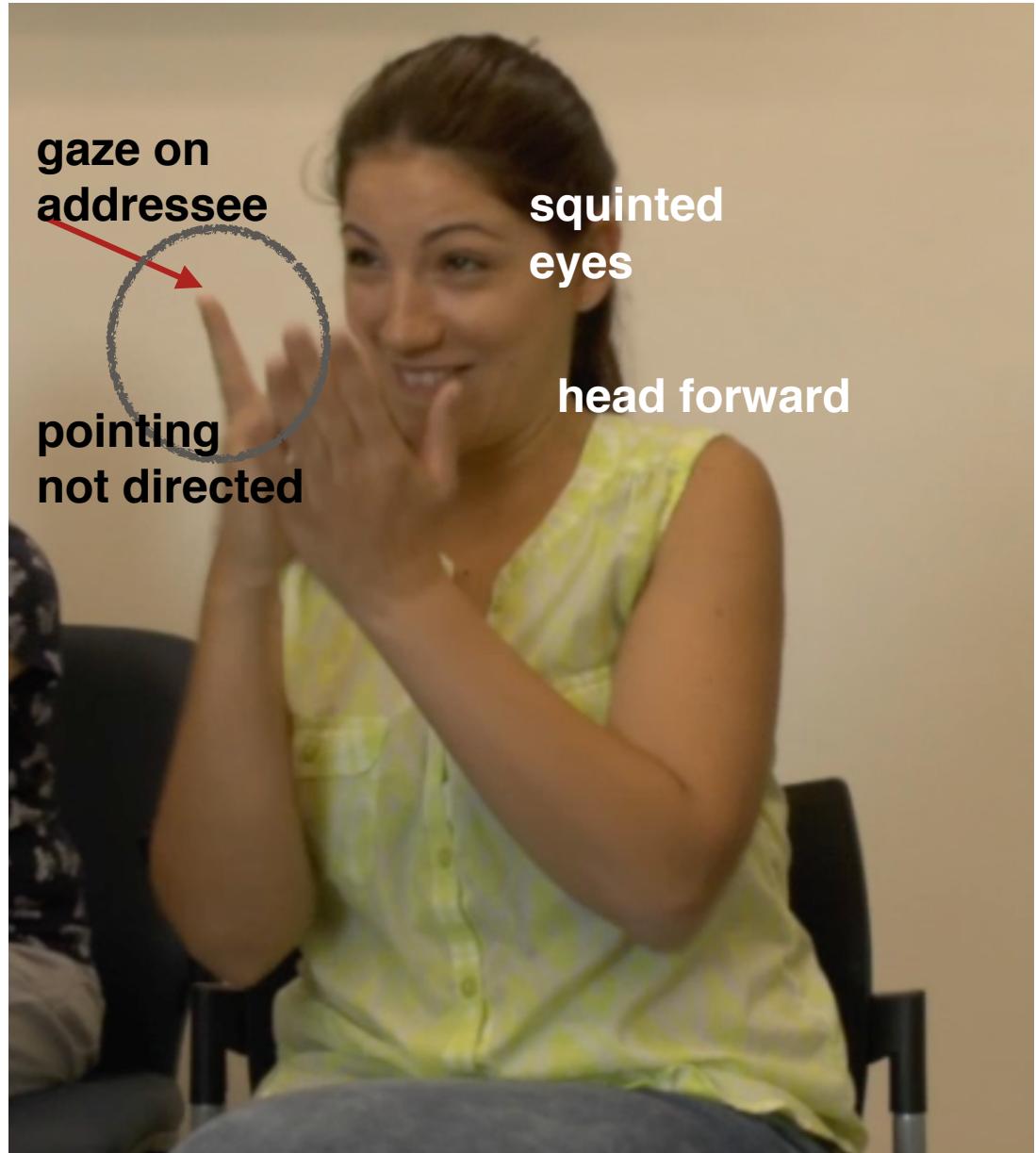


It frees the pointing sign to occur productively in a variety of linguistic composites

Role of pointing signs in relative clauses structural composite

(Dachkovsky 2018)

- Loss of pointing movement
- Loss of gaze alignment
- Phonologically reduced



Role of pointing signs in relative clauses structural composite

(Dachkovsky 2018)



'The woman who is drawing is eating an apple'

Role of pointing signs in relative clauses structural composite

(Dachkovsky 2018)



'The woman who is drawing is eating an apple'

Conclusions

- In a young sign language, indicating expressions are reduced in the course of grammaticalisation, so that gaze is dropped.
- Gesturers' pointing expressions are not accompanied by gaze.
- We see the reduction in mature linguistic systems, regardless of modality.
- Once reduced and simplified, pointing components can make distinct contributions to linguistic structural composites.

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