# The influence of same-age peers on language emergence

Deanna Gagne, Ann Senghas, Marie Coppola









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Contributions from Kurt Gagne and Hayseli Midence

# Typical language acquisition:





# Typical language acquisition:

VERTICAL

and

HORIZONTAL





**1970**s

only

**1980**s

# THE EMERGENCE OF SPATIAL GRAMMAR IN NSL





■ rotated
□ unrotated



#### Cohort

2



acquisition

# Source of grammaticalization?

If acquisition, is vertical experience enough?

Why Rotated?

Physical and visual affordances?

Cohort 1 provided statistical "seed?" Something else?

What if Cohort 2 did not have each other?

■ rotated
□ unrotated







# DISENTANGLING VERTICAL AND HORIZONTAL EXPOSURE



# PARTICIPANTS 7 families **Cohort 1** *n*=8 **Hearing Children of Cohort 1 (Codas)** *n*=8 Cohort 2 *n*=8

#### **Vertical and Horizontal**

**Vertical only** 

## **RESEARCH QUESTIONS**

# Source of grammaticalization?

Are Codas' spatial productions more *internally consistent* than their Cohort 1 parents'?

Why Rotated?

What layout(s) do the Codas use, and where does it come from?

# rotated unrotated







# STIMULI CONTEXT



## **RESPONSE TYPES**





### CODAS' CONSISTENCY FALLS BETWEEN COHORT 1 AND COHORT 2



12

# CODA LAYOUTS UNRELATED TO PARENT(S)'; MOST CODAS PREFER UNROTATED



Mann-Whitney U=67, p = .021, Parent Median = 6.6, Child Median = 12.4

# HOW DID THIS PATTERN EMERGE ACROSS THE CODAS?









100%







100% 80% 60% 40% 20% 0%

#### 3) Parent/ Child

Rotated

No direction

#### SPATIAL ENCODING TASK



#### Stimulus:

Player kicks the ball to the **LEFT** side of the goal

#### Task:

Identify whether a picture presented immediately after viewing stimulus video matches the spatial layout of the video







#### **Cohort 1 Spatial Encoding**



Percent correct







Player kicks ball to his <u>right</u> Coda signs to his <u>left</u> but says "to the <u>right</u>"

Sign: Unrotated; Speech: Rotated



Cohort 1 do not encode spatial aspects of events

Codas experience successful communication in Spanish

> Codas might be accommodating their parents with unrotated layout

#### **SUMMARY**



20 years after Senghas et al. 1997 (!!): Cohort 1 still does not use space grammatically Cohort 2 signers still consistently rotate



Unlike Cohort 2, Codas use unrotated layouts more than Cohort 1 (their parents)



Codas' use of space corresponds to their parents' spatial encoding ability, not their parents' use of space

## THEORETICAL IMPLICATIONS

Vertical transmission -> Reorganization

Horizontal transmission -> Consistency

Input includes social/communicative context in addition to observed productions (Hoff, 2006)

In natural acquisition, children constantly reorganize; interlocutors shape the process of that reorganization



# **REAL-WORLD IMPLICATIONS: PEER CONTACT MATTERS**



# **AVAILABLE SOON for Android and iPhone!!**

# Señas y Sonrisas

A *free* smartphone app that helps parents learn basic NSL signs to communicate with their deaf children



To learn more, send an email with SYS in the subject line to: info@manos-unidas.org

#### THANK YOU

Thanks to:

The Nicaraguan participants

Deanna Gagne deanna.gagne@gallaudet.edu

Marie Coppola marie.coppola@uconn.edu

Ann Senghas asenghas@barnard.edu

Kurt Gagne Hayseli Midence



Karianna Montalvo Therese O'Neill

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