



Sign Language Acquisition is a Human Right

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UNIVERSITY OF CONNECTICUT

Language rights are human rights



<https://www.sclد.org/december-a-season-to-celebrate-human-rights/>

Recognition of (sign) language rights



[UN Declaration of Human Rights](#)

[UN Resolution A/RES/61/266](#)

[UN Declaration on the Rights of Persons Belonging to National or Ethnic, Religious and Linguistic Minorities \(1992\)](#)

[UN Declaration on the Rights of Indigenous Peoples](#)

[UN Convention on the Rights of Persons with Disabilities](#)

[World Federation of the Deaf Charter on Sign Language Rights for All](#)



WORLD FEDERATION
OF THE DEAF

Why is this important (here, now)?

Sign language acquisition is an important part of the study of language development.

15 presentations related to sign languages at this year's BUCLD.

We don't understand language acquisition if we don't understand sign language acquisition.

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Some deaf/hard-of-hearing children are denied access to a sign language but struggle using a spoken language exclusively

Use of a sign language can help ensure successful learning of at least one language as a crucial foundation for cognitive development, social-emotional well-being, and educational progress



Sign Language Acquisition Research

[Focus on American Sign Language]



Early studies of sign language acquisition

Washoe

(project started in 1967 by R. Allen and Beatrix Gardner)



https://commons.wikimedia.org/wiki/File:M8062_F34_001.jpg

Nim

(project started in 1973 by Herbert Terrace)



<https://laura-ann-petitto.com/nim-chimpsky>

Ursula Bellugi

1967	Ed.D., Harvard University
1969	Visited Washoe
1970	Began studies of acquisition of ASL by deaf children with deaf, signing parents
1970-2018	Director Laboratory for Cognitive Neuroscience, Salk Institute for Biological Studies

Bellugi (1988)

<https://www.salk.edu/engage/women-science/profiles-ursula-bellugi/>



Cross-Linguistic Early Syntax Study (CLESS)

CLESS Project: With William Snyder (starting in the mid-90's)
ASL and Libras acquisition research students/collaborators:



William Snyder



Deborah Chen Pichler



Gaurav Mathur



Ronice Quadros

Sign Language Acquisition: Annotation, Archiving, and Sharing (SLAAASh)



Julie Hochgesang

<https://slla.lab.uconn.edu/slaaash/>
<https://aslsignbank.haskins.yale.edu/>

Major findings

Deaf children's acquisition of ASL with input from birth

- Babbling (Petitto & Marentette 1991); Pronouns (Petitto 1987)
- First words (Meier & Newport 1990)
- Early morphology (Bellugi & Klima 1982)
- Early syntax (Lillo-Martin 1991)
- Non-manual marking (Reilly et al. 1990)
- Narrative development (Loew 1984)

Researchers
associated with
Bellugi's lab

Overview articles: Newport & Meier (1985); Lillo-Martin (1999);
Chen Pichler (2012); Meier (2016); Lillo-Martin & Henner (2021)

Sign language acquisition studies: Implications (1)

Parallels – and differences – between sign and spoken language acquisition

“Deaf children exposed to signed languages from birth acquire these languages on an identical maturational time course as hearing children acquire spoken languages.”



Petitto (2000)

Modality effects: The development of motor control accounts for many aspects of the nature and timing of very early sign language forms. In particular, the first signs may occur slightly earlier than first spoken words.



Meier & Newport (1990);
Meier et al. (2008)

Sign language acquisition studies: Implications (2)

Advances in sign language grammatical analyses inform us about sign language acquisition

Example: Word order
ASL has a 'default' word order of Subj-Verb-Obj, but previous researchers claimed that young children did not converge on this order until relatively late.



Chen Pichler (2001, 2008)

SAL 2;02

HAT BRING-HERE

Video example removed

Research on adult ASL grammar later showed that specific grammatical operations licensed the use of Verb-Subj ('Subject Pronoun Copy) and Object-Verb (with particular verbal morphology) word orders.

Considering children's use of Subject Pronoun Copy and verbal morphology shows much earlier regularity in word order and allowable word order variation for both SV and VO pairs.



Chen Pichler (2001, 2008)

Sign language acquisition studies: Implications (3)

Using sign language acquisition data to inform us about sign language grammar

Example: topic, focus,
and WH-questions



Lillo-Martin & Quadros (2005, 2006)

In ASL and Brazilian Sign Language (Libras), modals, auxiliaries, wh-words, etc. can occur twice in one sentence ('doubling'), or in the non-canonical sentence-final position ('final')

WE-TWO WILL GO WILL
WE-TWO GO WILL

SAL 2;02

PULL-ON-SHIRT CAN

Video example removed

Researchers debated the proper analysis of these structures. One proposal supported a derivational relationship between the doubling and final structures, but another considered them as completely distinct.

Children acquire doubling and final structures (used for emphasis) together, and separate from information focus, supporting the analyses that treat them similarly.



Lillo-Martin & Quadros (2005, 2006)



Bimodal Bilingual Language Development



Sign language acquisition by hearing children with deaf, signing parents

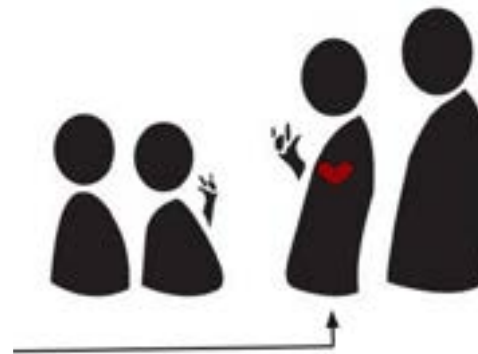
A unique context of language transmission

95%
of deaf children
are born to
hearing parents



Mitchell & Karchmer (2004), Mitchell et al. (2006)

80%
of children born to
Deaf parents
are hearing

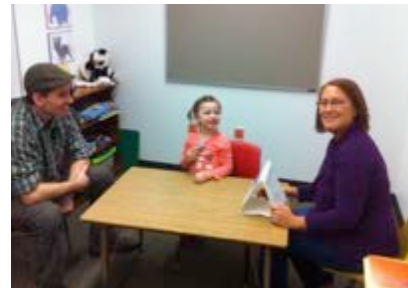


CODA:
Child of Deaf Adults
KODA: Kids of Deaf
Adults

Studies of Koda language acquisition



Project started with Debbie Chen Pichler;
Brazil PI: Ronice Quadros;
Student / Collaborator: Helen Koulidobrova;
Post-docs: Kathryn Davidson, Kadir Gökgöz



Typical bilingualism effects

Cross-linguistic influence

- Example: WH structures in sign-influenced speech
- ASL and Libras permit wh-words in sentence-initial position (like English, Portuguese) – but they also permit wh-doubling and wh-final

- a. WHERE RABBIT
- b. WHERE RABBIT WHERE
- c. RABBIT WHERE



BEN 2;00

“Where’s the rabbit where”

Video example removed

WH structures in sign-influenced speech

- **Kodas** (Ben, Tom, Igor) produced doubling and final wh-elements

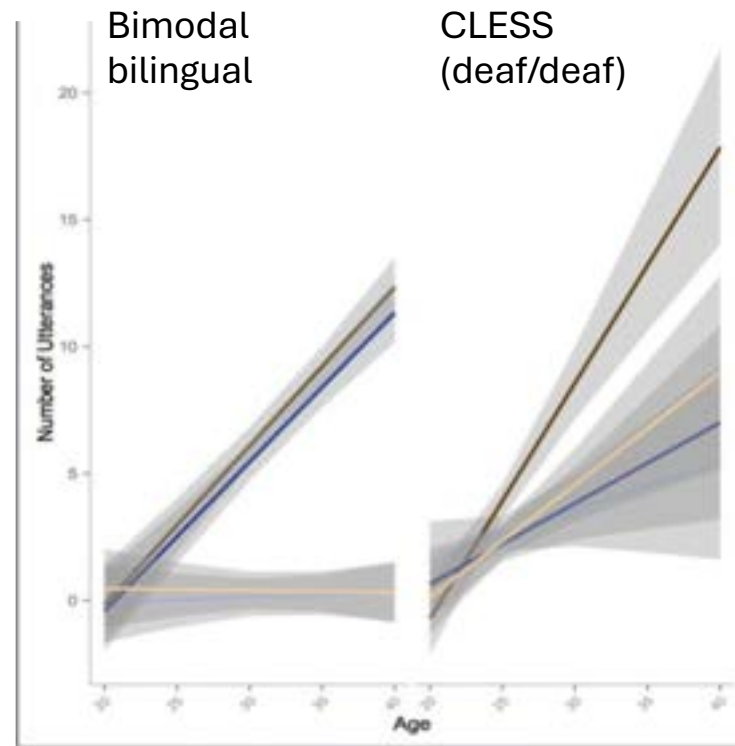
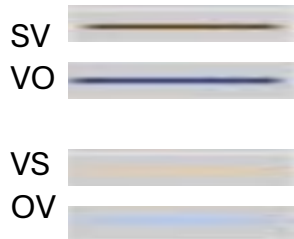
- Monolingual **English** and **Portuguese** speakers do not

Lillo-Martin, Koulidobrova, Quadros & Chen Pichler (2012)

Participant	Sentence-initial	<i>In situ</i> /Final	Double	Earliest <i>In situ</i> /Final
Ben	*.865	.02	.115	2;00
Tom	*.92	.07	0	2;04
Igor	*.94	.01	.05	2;01
Adam	.998	.002	0	2;08
Eve	1.0	0	0	--
Naomi	1.0	0	0	--
Nina	.993	.007	0	2;09
Natália	1.0	0	0	3;09
Luiza	1.0	0	0	3;11
Gabriela	1.0	0	0	--

Heritage language effects

Bimodal bilingual children display a reduction in licit word order variation as compared with the CLESS participants



Unique to bimodal bilingualism: Code-blending

BEN 1;11

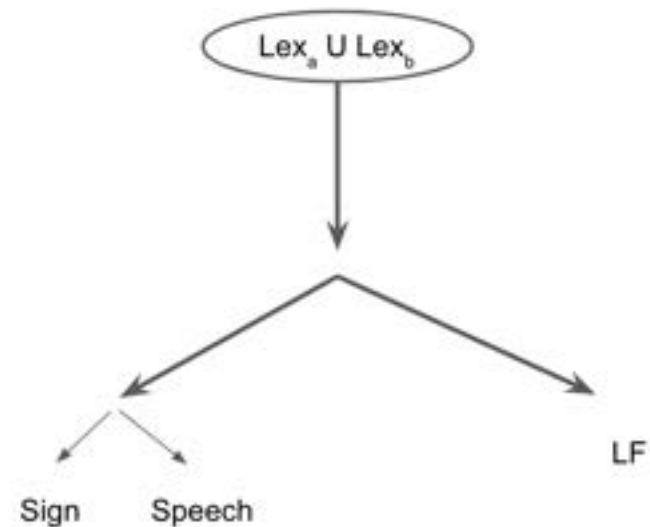
“Daddy work”
“Mommy work”

Video example removed

Implications for linguistic architecture

Language *synthesis*

- A derivation can employ overt and null elements from either lexicon, as long as the derivation converges
- For bimodal bilinguals, vocabulary insertion can use sign, speech, or both



Deaf bimodal bilingual children

What does acquisition of sign and speech look like for deaf children with deaf parents, using cochlear implants?



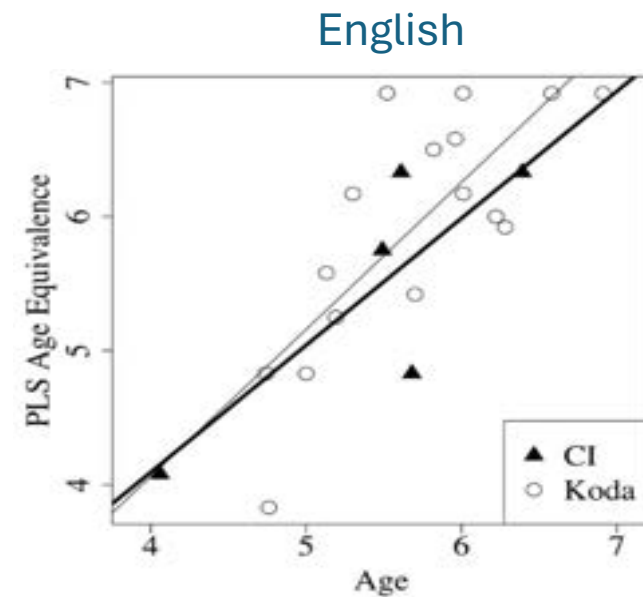
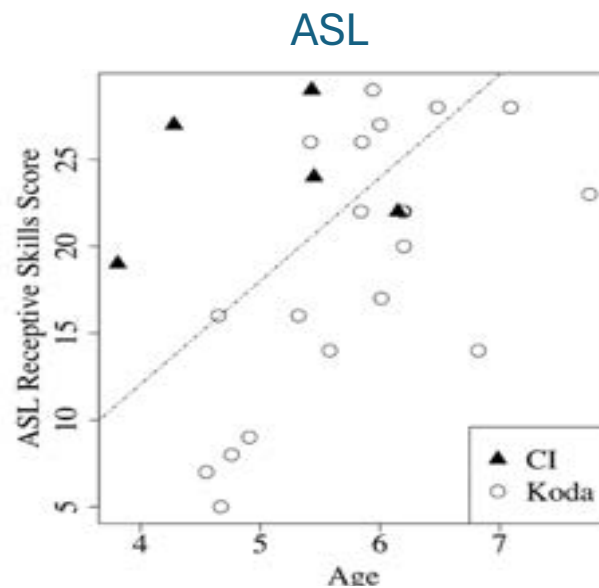
<https://stock.adobe.com/search?k=cochlear>

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Lillo-Martin, Chen Pichler, & Gagne (2022); Davidson, Lillo-Martin, & Chen Pichler (2014)

English development by bimodal bilinguals

Kodas and deaf children with CI who use a natural sign language with their Deaf families scored in the normal range for hearing children on standard English tests, outperforming oral-only DHH children.



<https://www.childrensmn.org/educationmaterials/parents/article/9266/cochlear-implants/>

General language measures
Preschool Language Scale

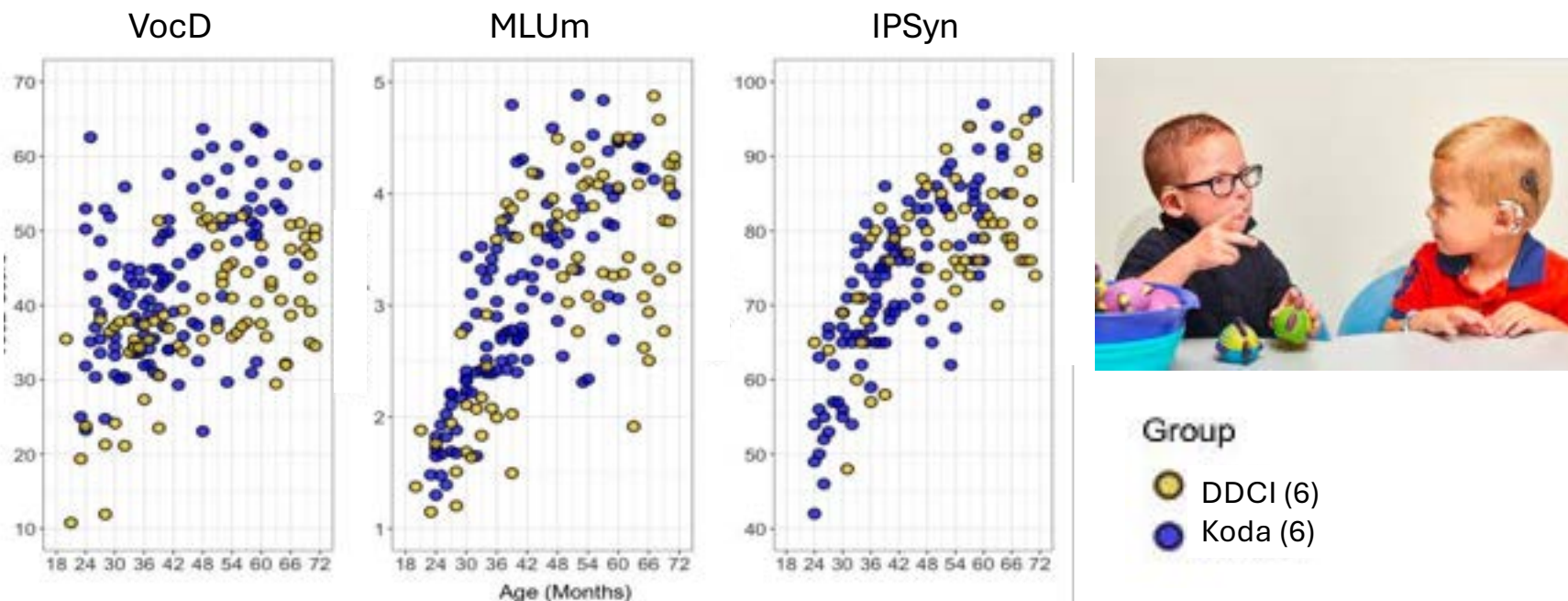
Phonological awareness
Phonetic articulation

Expressive vocabulary
Productive syntax

Davidson, Lillo-Martin & Chen Pichler (2014)

Typical bilingualism effects

Longitudinal English data from 12 bimodal bilingual children



Goodwin & Lillo-Martin (2023)

<https://magazine.uconn.edu/2018/02/28/case-bilingual-deaf-children/>

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Summing up so far ...

With fluent sign input from birth, DHH children acquire a sign language along a typical timeline

- ...with some interesting effects of the modality

With fluent sign input from birth, and access to the sounds of spoken language, hearing children and DHH children using cochlear implants acquire a sign language AND a spoken language along a typical timeline

- ...with some interesting effects of bilingualism



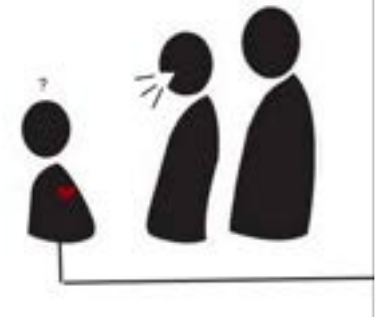
Language Development by Deaf Children without Deaf, Signing Parents



The most common context

- What if a DHH child is born into a family that does not sign?
- Well-known, wide-spread, long-lasting effects of delayed accessible language input
- Even nowadays, with hearing technology, a period without linguistic input is inevitable and outcomes are extremely varied
- Nevertheless, parents are often advised not to sign with their children while awaiting a cochlear implant; they are told the child can learn sign later

95%
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hearing parents



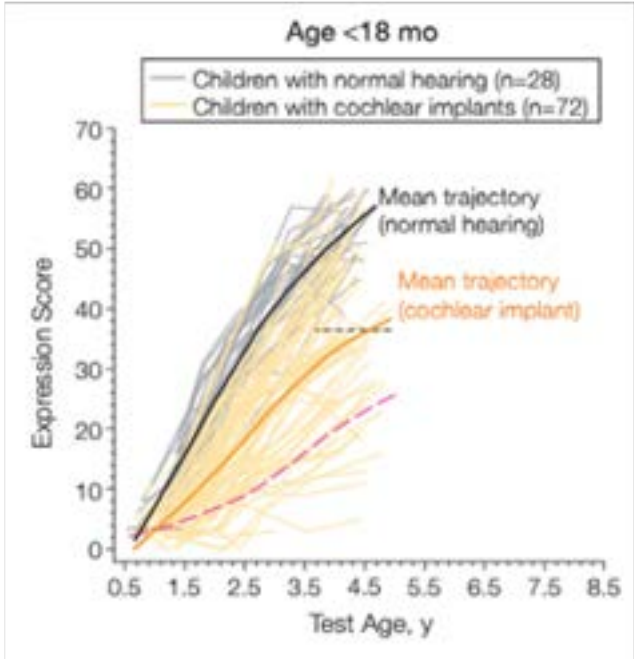
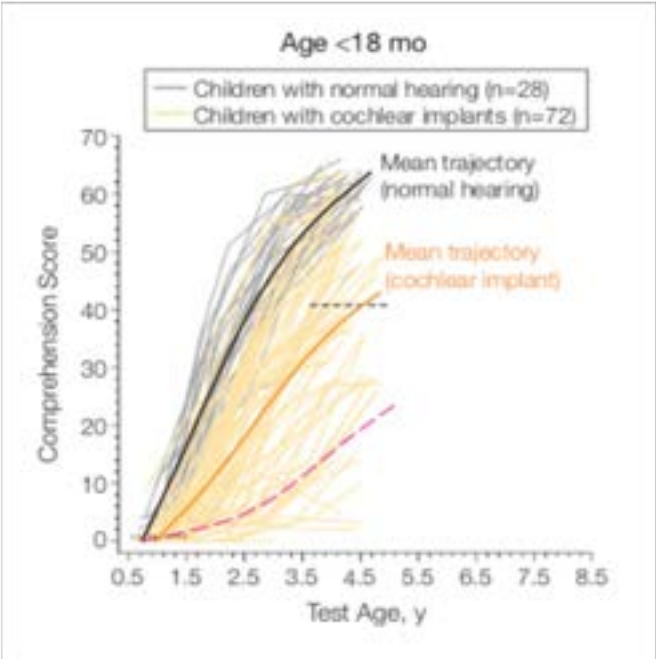
The listening & spoken language approach

- Use of spoken language only
- Early identification and early use of technology
- Focus on listening and auditory learning
- Therapists and parents provide input

<https://www.clarkeschools.org/clarke-speaks-up/research-review/>



Highly variable spoken language outcomes



Niparko et al. (2010)

Spoken language outcomes

- Geers et al. (2017) – elementary children in a ‘no sign’ group outperformed children with exposure to sign on a spoken language composite measure
- HOWEVER, as reported by Hall, Hall & Caselli (2019):
 - approximately 75% of the DHH children performed below the 50th percentile
 - among the best-performing group of participants, 49% scored lower than the 16th percentile at the early elementary timepoint
 - more than triple the expected rate for below-average spoken language proficiency

Continued weak performance at older ages

Pragmatics

(Crowe & Dammeyer 2021)

“Across studies children with CIs were reported to demonstrate a variety of pragmatic abilities, ranging from extreme difficulties with pragmatic skills in conversational contexts to little or no difficulties.”

Academic language

(Nittrouer & Lowenstein 2021)

Children using CI showed deficits in “linguistic flexibility needed to consider more than one interpretation for sentences lacking immediate, real-world context”

Since spoken language development may be **delayed, disrupted, and unreliable ...**

Wouldn't it make sense to provide input in an accessible full natural language to serve as a foundation for later linguistic, cognitive, and academic development?

Can hearing parents provide a linguistic foundation using a sign language?

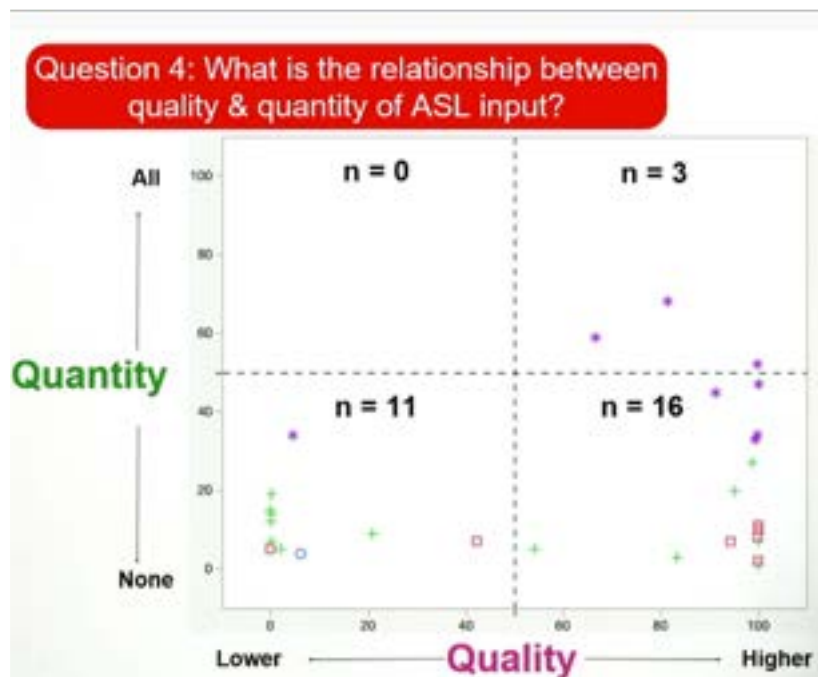
- Deaf parents outperform hearing L2 signers on a wide range of measures (e.g., Spencer & Harris 2006, Lu et al. 2016)
- Hearing parents may feel overwhelmed and insufficient to the task

“[To] learn language, a child has to be exposed to it on a full-time basis. That means that parents need to be able to expose their children to language every waking minute...While parents of deaf children can (and many do) learn sign language, very few become fluent. While they can communicate basics they often cannot communicate complex information nor discuss complicated thoughts. ”

Jane Madell

<https://hearinghealthmatters.org/hearingandkids/2015/its-not-the-same-old-deafness-2/>

Low quantity (not quality) is the bigger barrier to child ASL development



DHH Language Exposure Assessment Tool (D-LEAT):

- No one is getting large quantities of poor ASL
- Some get low quantities of low quality ASL

➤ **Focus on increasing quantity.**



Perhaps L2 sign input can be effective



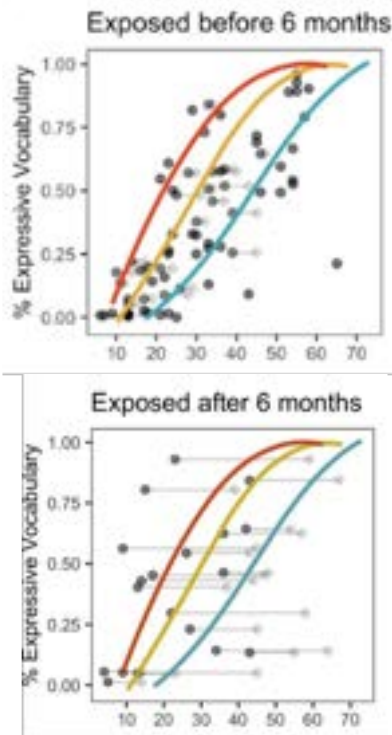
Deaf children in hearing+signing families: A unique context for language acquisition



Deaf children learning a sign language as an L1 from hearing parents who are learning the sign language as an L2

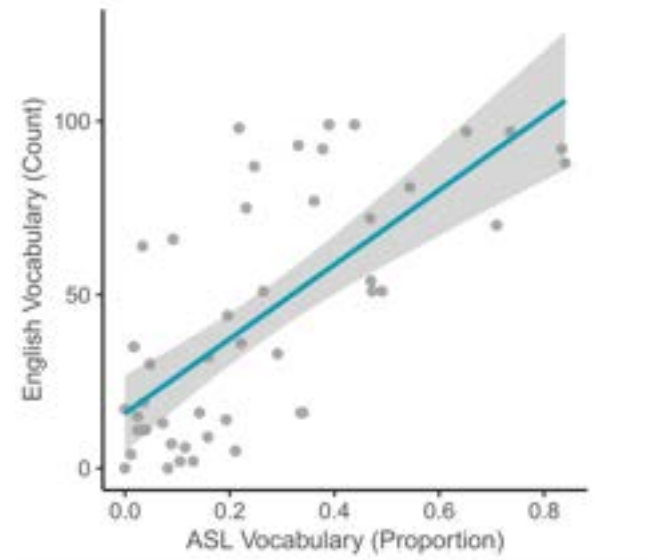
Family ASL project

Vocabulary development in deaf children with hearing parents learning ASL



Children exposed to ASL by 6 months develop ASL vocabulary on par with deaf children from Deaf, signing families.

Children's ASL and English vocabulary are strongly correlated.



Caselli et al. (2021); Pontecorvo et al. (2023)

Access to non-native input brings benefits

“...even short-term exposure to nonnative sign input has positive effects on general language and phonological memory abilities as well as on nonverbal working memory—with **total length of exposure to sign input being the best predictor of deaf children’s performance** on these measures.”



<https://www.valleychildrens.org/news/news-story?news=1318>

Children's use of the visual modality supports their own language learning

ALL language learning is multi-modal

Hearing infants use visual cues in early language learning

Infants point and gesture before their first words indicating they are ready to learn new words

Using visual and tactile modalities is not limited to deaf children and not a sign of language delay



Family ASL Project



Co-PIs:

Diane Lillo-Martin (UConn)

Elaine Gale (Hunter College, CUNY)

Deborah Chen Pichler (Gallaudet)



- The Family ASL project engages families with hearing parents who have chosen to include ASL as one of their family languages with their DHH child.
- An ASL specialist supports the family's development in ASL through online meetings.
- Children and parents participate in tasks that allow us to observe their development of ASL and spoken English.

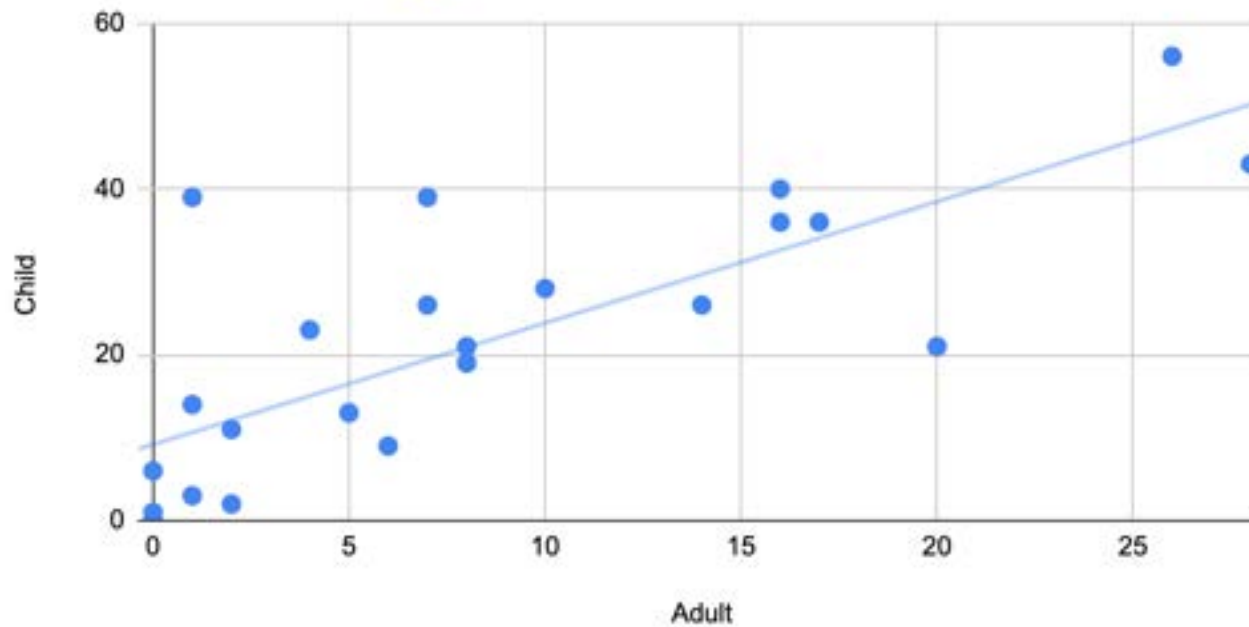
Video example removed



Sample of FASL research results

Positive relationship between Adult & Child ASL-CDI

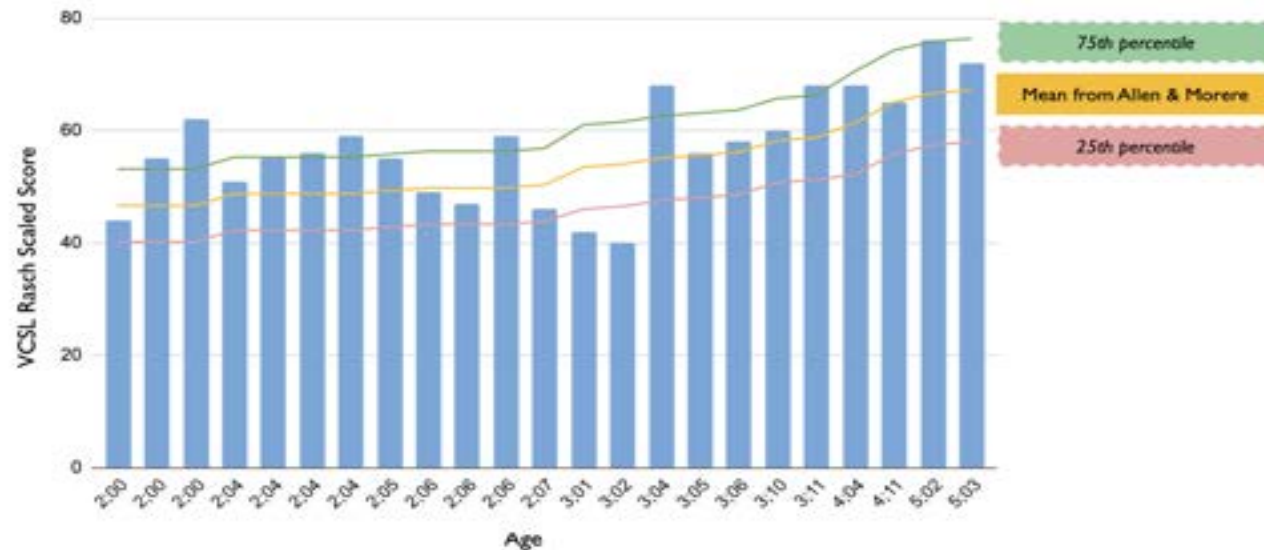
ASL Vocabulary (# of words unknown)



Task: Caselli et al. (2020), shortened version (100 signs)

Visual Communication & Sign Language Checklist

Standardized checklist of typical behaviors

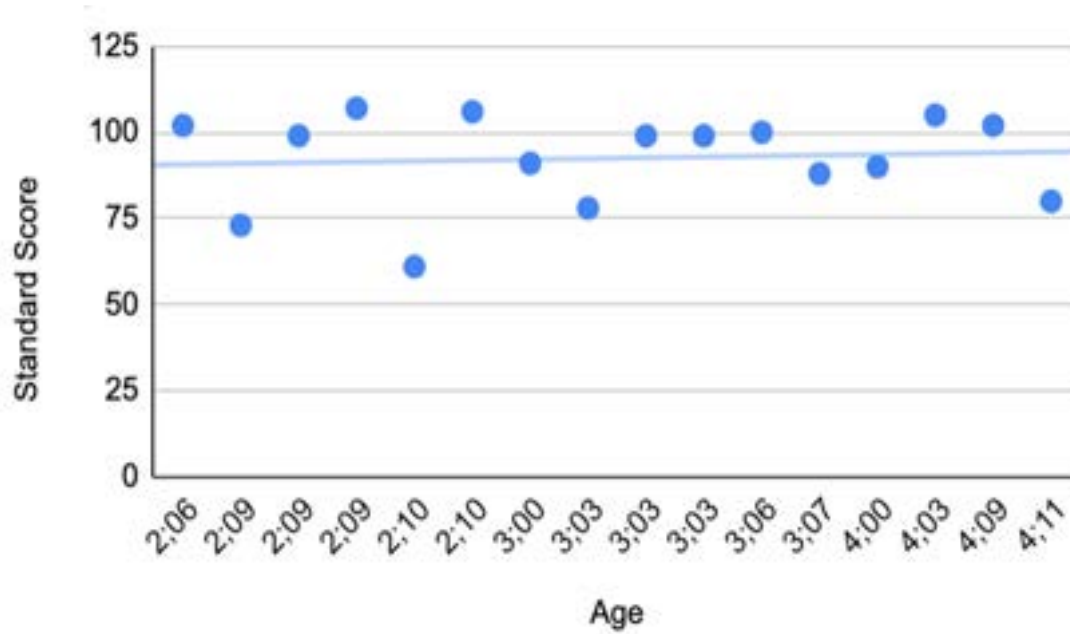


VCSL scores by age compared to mean scores in Allen & Morere (2022)

Task: Simms et al. (2013); Results: Blau et al. (2025)

English PPVT-5

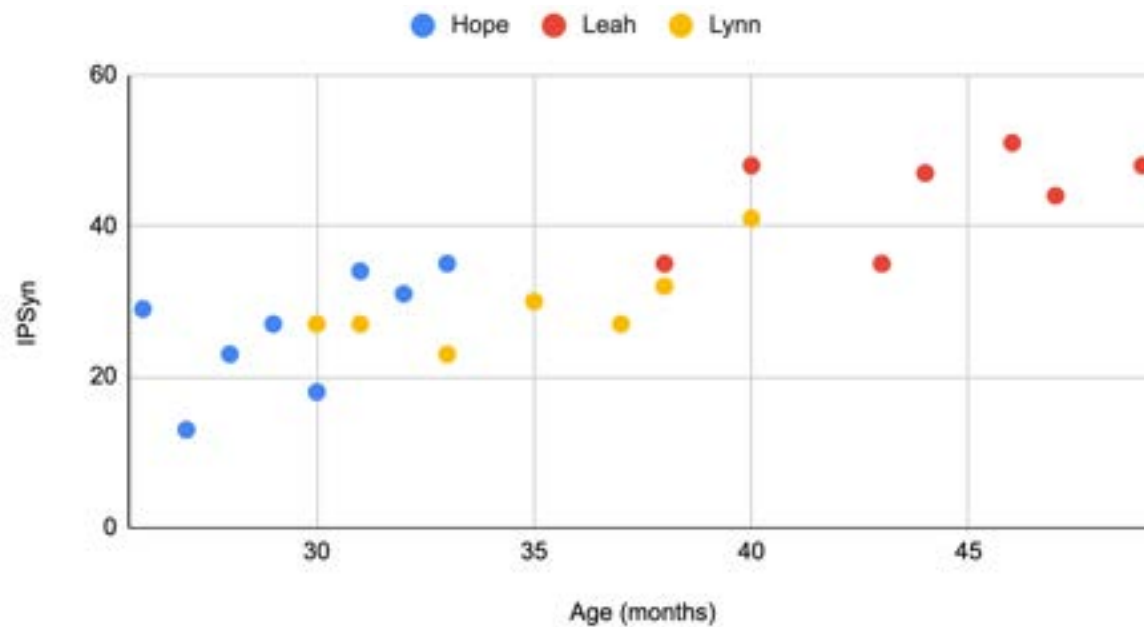
English vocabulary comprehension



Task: Dunn (2019)

English IPSyn

Development of English morpho-syntactic structures



Task: Scarborough (1990); Ratner & MacWhinney (2016); Results: Lillo-Martin et al. (2025)

Summary

Some children use more sign; others use more speech.

Parents' ASL proficiency is variable.

Yet, we see overall positive ASL and English growth.

Adopting a natural sign language for family use did not interfere with children's English development, whether families showed higher or more moderate levels of ASL proficiency.

Deaf gain

Parents reported their perspective on advantages of the bimodal bilingual approach (Chen Pichler 2021; Lieberman et al. 2024)

- Communication options in a variety of contexts (for family and for child)
- Opportunities for their children to participate in both deaf and hearing communities

“A bimodal bilingual environment is both a **least-restrictive AND language-rich environment**, maximizing communication options and empowering the child to choose the language that works best for them in each situation.” (Clark et al. 2020)

Theoretical Implications

Studies of language development by DHH children with L2-signing parents can help us address detailed questions about the relationship between input and development (see also Singleton & Newport 2004)

- Parents are not the only input-providers

Studies of the parents' own development are also crucial

- These studies are also important for L2 acquisition research questions
 - How L2M2 acquisition is different from L2M1
 - Differences in motivation, learning environment, primary interlocutors

Sign Language Rights for All



See also Humphries et al. 2013, 2023

<https://wfdeaf.org>

I am thrilled to have had the chance to share this work with BUCLD. An immense *THANK YOU* to the organizers for the invitation.



I am also incredibly grateful for the colleagues and students with whom the research presented here was conducted, particularly:



Deborah
Chen Pichler



Ronice
Quadros



Elaine
Gale



Julie
Hochgesang



Kate
Davidson



Helen
Koulidobrova

Acknowledgments

This research could not take place without the support of participants and their families. THANK YOU all for your tireless support.



Research reported in this publication was supported by the National Institute on Deafness and Other Communication Disorders of the National Institutes of Health under Award Numbers R01DC013578, R01DC009263, and R01DC016901. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

References

