THE IMPACT OF SIGN LANGUAGE ACQUISITION RESEARCH FOR SIGN LANGUAGE COMMUNITIES

UCONN

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Sign Language (Acquisition) Research

- Why linguists are interested in Sign Language (acquisition) research
- Deaf children as bimodal bilinguals and educational implications
- The importance of sign language acquisition research for Deaf/ Signing communities



Why linguists are interested in Sign Language acquisition research



Questions on the Universal Aspects of Language

- What aspects of language development are universal and observed in all languages?
- What aspects of language development vary by language?

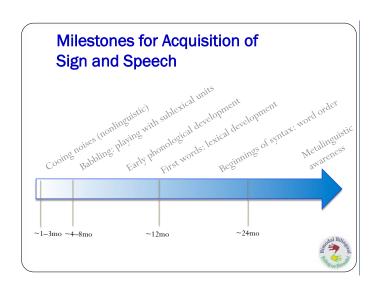




Universal Properties of Language Acquisition

- SL acquisition follows many of the same stages found in spoken languages.
 - Many parallel processes in sign and spoken language acquisition.
 - This research supports the view that sign languages are full languages and are on a par with spoken languages.





Modality Effects in Acquisition

- In what ways could aspects of the SL modality affect acquisition?
 - Simultaneity
 - Iconicity
 - Use of space
 - Visual accessibility



Using Acquisition to Find the Right Grammatical Model

- Grammatical models make different predictions
- SL acquisition data can be used to test
- In turn, grammatical models for SL direct researchers to look for new patterns of acquisition



Unique Insights on the Nature of Language

- SL acquisition crucial for understanding language and its development
- Findings on sign language acquisition, homesigners, late signers, and new sign languages offer unique information.



Deaf children as bimodal bilinguals and educational implications



Deaf Bilingualism

 Deaf bilingualism is usually understood as involving a signed language as an L1 and a written (and sometimes spoken) language as an L2.







Advantages of Bilingualism

- Bilinguals add a second language at no cost to the development of their first language
- Bilingualism fosters relatively high levels of fluency and literacy in both languages.



Advantages of Bilingualism

- Researchers also note that, compared to monolinguals, bilinguals benefit from
 - · greater sensitivity to linguistic meanings
 - · advantages in developing metalinguistic knowledge
 - · more cognitive flexibility.





Advantages of Using Sign Language

- Use of SL in deaf education allows natural language development.
- · Robust language is needed for
 - · access to communication
 - access to the curriculum (Johnson et al. 1989)



Full access to language and communication supports cognitive development.



Bimodal Bilingualism with Cochlear Implants

Davidson, Lillo-Martin & Chen Pichler 2014

Deaf children with cochlear implants are often encouraged to focus solely on spoken language

"Oral-only communication produc[ing] speech and language results superior to those observed in children who use a combination of signing and spoken language."

(Peterson et al. 2010, p. 241)

Here we investigate the effect of full, native, **American Sign Language** input from deaf parents on the development of **English** speech in children with cochlear implants



Spoken language development in children with CIs

- Large variability in outcomes (Nicolas & Geers 2008, Geers et al. 2009)
 - Some children reach typical grade levels by middle school
 - Other children are far behind
 - > Research push for determining the sources of this variation (age of implantation, educational environment, etc.)
- Most children with Cls have hearing parents, and so no access to language before the implant.
- If lack of access to language (of any kind) in the first year of life has a negative influence, children with Cls from deaf, signing households may perform better in English



Participants

	Participant	Age of first English testing	Age at first implant	Years since CI	Mother's Education (years)
Native signers with CIs	PAM	4;00	2;11	1;01	BA
	NIK	5;05	1;04	4;01	BA
	GIA	5;07	1;06	4;01	BA+
	FIN	5;08	1;07	4;01	BA+
	MAX	6;04	1;08	4;08	BA
Hearing native signers ("kodas") n=20	Mean	6;00	N/A	N/A	14
	Range	4;09-8;02	N/A	N/A	12-21

Non-signers with As reported in previous literature
Cls Typically high SES: 72% of mothers have 16+ years education
(Nicolas and Geers 2008)



Measures

Screening measures

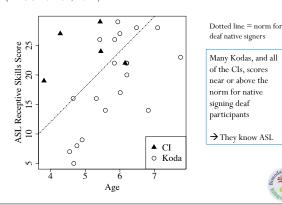
- IQ: Leiter-R Screener (all passed)
- Sign Language: ASL Receptive Skills (Enns & Herman 2011)

Measures of spoken English development (5)



ASL Receptive Skills Test

(Enns & Herman, 2011)



General Language Development: Preschool Language Scales

(Zimmerman et al. 2002, 4th Ed)

- · Auditory (AC) and Expressive (EC) components
- Nicolas and Geers (2008) established expected scores relative to age and age of implantation for children with Cls raised with oral/spoken English only



Preschool Language Scales: Predicted standard scores by age of implantation

Participant	Age at implant (months)	Predicted Standard Score EC	Actual Standard Score EC	Predicted Standard Score AC	Actual Standard Score AC
PAM	35	60		68	
NIK	16	89		93	
GIA	18	83		88	
FIN	19	80		86	
MAX	20	77		85	

Predicted scores based off combination of children's age of impantation and years of language use, data from 76 participants (Nicolas and Geers 2008)



Preschool Language Scales: Actual vs. predicted standard scores

Participant	Age at implant (months)	Predicted Standard Score EC	Actual Standard Score EC	Predicted Standard Score AC	Actual Standard Score AC
PAM	35	60	92	68	101
NIK	16	89	94	93	98
GIA	18	83	105	88	102
FIN	19	80	87	86	75
MAX	20	77	93	85	97

Predicted scores based off combination of children's age of impantation and years of language use, data from 76 participants (Nicolas and Geers 2008)



Tests of specific language skills

- Expressive Vocabulary Test
- Goldman-Fristoe Test of Articulation
- Index of Productive Syntax
- DIBELS (phonological awareness)
- Native signing children with CIs performed no different from hearing children



Summary

- 5 case studies: native signing deaf children with cochlear implants (implanted < age 3)
- No difference found between native signing children with Cls and bilingual hearing koda peers on:
 - general language development
 - vocabulary
 - articulation
 - phonological awareness
 - syntactic complexity in spontaneous production



Discussion

- Sign language exposure does no harm and may even mitigate effects of delayed first language input
- Deaf children as bilinguals
 - Comparison to kodas



- Generalizability
 - Few deaf children born to signing parents
 - · Effects of hearing parents using ASL still to be studied



Sign language acquisition research and Deaf/ Signing communities



Impacts of sign language acquisition research

- · Status of ASL
- · Linguistic research
- · Educational programs for Deaf children
- Sign language assessment
- Sign language teaching (L2)
- · What do you want?

LANGUAGE AND PUBLIC POLICY

Ensuring language acquisition for deaf children: What linguists can do POORNA KUSHALNAGAR Gaurav Mathur

TOM HUMPHRIES University of California, San Diego

Rochester Institute of Technology CAROL PADDEN

Gallaudet University

DONNA JO NAPOLI University of California, San Diego Swarthmore College

University of Hamburg



Upcoming video book



GU Gallaudet University Press



- language acquisition from multiple angles:
 - L1 child
 - bimodal bilingual (koda and Coda)
 - L2 adult
 - interpreters
- · All in ASL, with voiceover
- Glossary (>200 signs)



Support research!

- · Your participation is vital
- · Ask educators about current research projects
- · Help spread the word to other families





Support bilingualism

- · Provide opportunities for Deaf and hearing signing children to reinforce and use their knowledge of Sign languages
- Early linguistic exposure is crucial
- Biliteracy can be fun with new technology and signed books



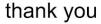
VL2 App with signed books



Conclusions

- Sign Language (acquisition) research is important for linguistic theory
- Deaf children can succeed as bilinguals this has educational implications
- Deaf/ Signing communities and sign language acquisition research can support each other









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