

Development of pointing signs in ASL and implications for their analysis

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BACKGROUND

Index points (IX) serve pronominal functions in American Sign Language (ASL). Because of their apparent similarity to co-speech pointing, there have been many discussions of the analysis of points in sign languages.

- Are all IX points in ASL linguistic or are they equivalent to co-speech gestures? (Johnston 2013; Cormier et al. 2013)
- Given their grammatical characteristics, some have argued that there is no formal difference between IX(addressee) and IX(non-addressee); others argue for analysis as 2nd and 3rd person pronouns. (Meier 1990; Lillo-Martin & Meier 2011; Wilbur 2006)

RESEARCH QUESTIONS

Gesture vs. Linguistic points?

➤ How different are the points used by signers when compared to the points used by non-signers?

Many analyses or few?

➤ Do the different functions of points in sign languages require different analyses, or are they different realizations of the same thing?

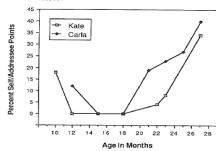
Data from ASL acquisition can contribute to this discussion

- Do signing and non-signing children use pointing in similar ways?
- Are the different pronominal functions acquired together or separately?

Previous studies of IX development

Petitto (1987) observed discontinuity in production of points to people by 2 Deaf signers, and pronoun reversal errors when points to people came back in.

Percent of Kate and Carla's total number of pointing forms directed to self and addressee.



- Is assumption that hearing children point early true for points to people?
- Would other children acquiring ASL show the same pattern?
- Would they show a different pattern for different pronominals?

METHOD

Analysis of Spontaneous Production Data

Deaf children of Deaf parents from SLAASH project

- All productions of IX tabulated
- 3-way contrast: IX_1, IX(person), IX(object/location/unclear)
- FRU of IX, IX_1, IX(addr), IX(non-addr) for each child determined (FRU = First of Repeated Uses – first month followed by at least one month with usage)
- Noted FRU of POSS_1 and appearance (not repeated) of NS(self) and SELF_1 as possible alternative means of self-reference
- Statistical comparisons using binomial test with Bonferroni correction

Hearing non-signers from CHILDES-Providence

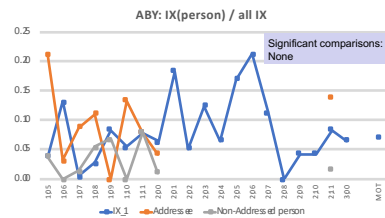
- Viewed video searching for all pointing produced by child
- Categorized as Pt(thing/loc) vs. Pt(person)

Pointing uses the index finger (slight variability possible)

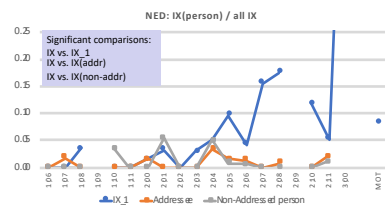
RESULTS

Deaf Native Signers

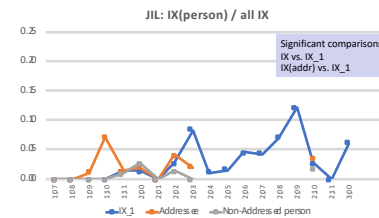
Participant	Age Range	# Sessn	Total # IX	FRU IX	FRU IX_1	FRU IX(addr)	FRU IX(non-addr)	FRU POSS_1	First NS(self)	First SELF_1
ABY	1;05-3:00	30	2295	(1;05)	(1;05)	(1;05)	1;07	1;10	2;01	2;10
ABY's MOT	1;05-2:00	22	1992							
JIL	1;07-3:00	33	2239	(1;07)	1;11	1;09	1;11	2;02	2;02	2;09
JIL's MOT	1;08-3:00	19	1335							
NED	1;06-3:00	25	1620	(1;06)	2;00	2;04	2;04	2;00	2;02	2;08
NED's MOT	1;06-3:00	25	4022							
SAL	1;07-2;10	18	2769	(1;07)	1;08	1;11	1;09	2;02	1;08	2;06
SAL's MOT	1;07-2;08	14	1905							



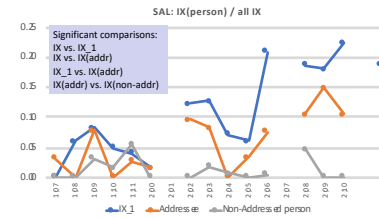
Starts with essentially all types;
IX(non-addr) not significantly later



Several months with IX only; all three IX(person) forms come in (statistically) together



Several months with IX, then IX(addr), IX_1 and IX(non-addr) come in statistically later



Acquires, in order:
IX > IX_1 > IX(non-addr) > IX(addr)

Hearing Non-Signers

Child	Age Range	# Sessions	Tot. time	# Utts	Total # Pt	Pt thing/loc	Pt person	*Pt person	*Pt self
Alex	2;00-3;00	5	4:46:41	3392	263	261	2	0	NYO
Lily	2;00-3;00	5	4:45:46	2364	211	211	0	0	NYO
Naima	2;00-3;00	5	5:19:43	2274	68	65	3	1	NYO
Violet	2;00-3;00	5	3:33:00	1995	155	153	2	0	NYO

Nearly all points to person were produced in "Where's X" games. *Columns exclude these productions. NYO=not yet observed.

DISCUSSION

All pointing is not the same! We have observed (here and elsewhere) *asymmetries* between:

- Pointing to self, addressee, and non-addressed persons by Deaf children
- Deaf, Koda and Hearing children in pointing to self/persons
- Children and adults in use of points to self and others

Gesture vs. Linguistic points?

➤ How different are the points used in signing when compared to the points used by non-signers?

- ✓ Both signers and non-signers frequently point to objects and locations, but
- ✓ Only (Deaf) signers point to themselves and other people
- ✓ (At least the latter) points are part of a linguistic system for signers

Many analyses or few?

➤ Do the different functions of points in sign languages require different analyses, or are they different realizations of essentially the same thing?

✓ The different timing of acquiring points to self, addressee, and non-addressed persons by the signers suggests that these different pointing functions are not acquired together – casting doubt on analyses that combine the types

CONCLUSIONS

- In both speech and sign, pointing can be used with language and can be abstract
- In speech, pointing can complement spoken words
- In sign, pointing accomplishes the equivalent of speech+point

Spoken language	Sign language
Word (speech)	IX
Point (gesture)	

- Despite surface similarities, different functions of points are acquired differentially
- Deaf children exposed to a sign language learn how pointing works as part of the linguistic system
- Though many factors contribute to explaining acquisitional patterns, Acquisition data can shed new light on long-standing theoretical issues

Selected References

Cormier, K., Schembri, A. & Woll, B. 2013. Pronouns and pointing in sign languages. *Lingua* 137, 230-247.
 Johnston, T. 2013. Functional and formal characteristics of pointing signs in a corpus of Auslan (Australian sign language): are the data sufficient to posit a grammatical class of 'pronoun' in Auslan? *Corpus Linguistics and Linguistic Theory* 9, 109-159.
 Lillo-Martin, D. & Klima, E. S. (1990). Pointing out Differences: ASL Pronouns in Syntactic Theory. *Theoretical Issues in Sign Language Research*, Volume 1: Linguistics, 191-210. Chicago: University of Chicago Press.
 Meier, R. P. 1980. Person deixis in ASL. *Theoretical Issues in Sign Language Research*, Volume 1: Linguistics, 175-90. Chicago: University of Chicago Press.
 Meier, R. P. & Lillo-Martin, D. 2013. The points of language. *Humana mente: Journal of Philosophical Studies* 24, 151-176.
 Petitto, L. A. 1987. On the autonomy of language and gesture: Evidence from the acquisition of personal pronouns in American Sign Language. *Cognition* 27, 1-52.

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