Acquisition Sketch Project

Meeting 16:
Morphology in Child Language

11/12 March 2025

Box 10. Key areas of focus in child language: Morphology.

Core

(i) What types of morphemes occur at each stage? What kinds of nominal morphology? Verbal morphology? Grammatical morphology?

- nominal morphology (e.g. case, number, gender, class)
- verbal morphology (e.g. agreement, tense, aspect, evidentiality)
- grammatical morphology (e.g. passive, antipassive, causative, negation)

(ii) Is there any evidence for stages of development for a given type of morpheme? Do you observe an increase in the number of categories marked? In the number of items the morpheme attaches to? In the complexity of forms?

(iii) What, if any, evidence can be used to show that children have a productive understanding of the morphology (rather than reproducing memorized forms)?

(iv) What is the mean length of utterance for each session? Is this best measured by morpheme, word, or syllable?

Extension

(v) For one or two morpheme types that are particularly salient in the language (and where there is enough data available), do a more systematic analysis.

Type of Morphemes

What types of morphemes occur at each stage?

- Nominal morphology – e.g. case, number, gender, class
- Verbal morphology – e.g. agreement, tense, aspect, evidentiality
- Grammatical morphology – e.g. passive, antipassive, causative, negation

More types (and tokens) of nominal inflections used as children get older

Table 38. Types and tokens of nominal inflections by age in children's speech.

Group	Child	Number of Utterances	NI Types			NI Tokens		
			N	Per Utterance	Group Mean	N	Per Utterance	Group Mean
1;4	Jini	53	0	0.00		0	0.00	
	Sarah	17	1	0.06	0.03	1	0.06	0.03
1;10	Lucasi	25	0	0.00		0	0.00	
	Sarah	150	2	0.01	0.01	6	0.04	0.02
2;4	Paul	142	5	0.04		13	0.09	
	Lizzie	123	5	0.04	0.04	10	0.08	0.09
2;10	Elijah	232	16	0.07		58	0.25	
	Lizzie	182	10	0.05	0.06	41	0.23	0.24
3;4	Lizzie	117	11	0.09		18	0.16	
	Louisa	195	13	0.07	0.08	17	0.10	0.13

- 25 different nominal inflection types used across the children

Inuktitut; Lee & Allen 2023: 194

More types (and tokens) of nominal inflections used as children get older

Table 39. Nominal inflections at each age in children's speech.

Case	Inflection	1;4	1;10	2;4	2;10	3;4	
Absolutive	*-it* 'PL'			0.04	0.17	0.03	
	-ga '1SG.SG'	1.00	0.83	0.48	0.14	0.28	'my'
	-kka '1SG.PL'					0.08	
	-vut '1PL.SG'				0.01	0.03	
	-it '2SG.SG'				0.05	0.03	
	-kkit '2SG.PL'					0.03	
	-nga '3SG.SG'		0.17	0.09	0.04		'his, her, its'
	-ni '4SG.SG'				0.09		
Ergative	*-up* 'SG'					0.03	
	-mma '1SG.SG'					0.03	'my'
	-ppit '2SG.SG'					0.03	'your'

Inuktitut; Lee & Allen 2023: 195

Example Utterances for Nominal Inflection

*pi-**ga***
thing-**POSS.1SG>3SG.ABS**
‘My thing’. (Sarah 1;4)

*savi-**mut***
knife-**ALL.SG**
‘With a knife’. (Lizzie 2;6)

*piipi-nngua-**mik***
baby-imitation-**MOD.SG**
‘The pretend baby’. (Paul 2;6)

*nauja-alu-**it***
seagull-big-**ABS.PL**
‘Big seagulls’. (Lizzie 2;10)

*qaria-**mit***
room-**ABL.SG**
‘From the room’. (Elijah 2;9)

*anaana-**mma***
mother-**POSS.1SG>3SG.ERG**
‘My mother’s’. (Louisa 3;3)

Inuktitut; Lee & Allen 2023: 194-195

More types (and tokens) of verbal inflections used as children get older

Table 36. Types and tokens of verbal inflections by age in children's speech.

Group	Child	Number of Utterances	VI Types			VI Tokens		
			N	Per Utterance	Group Mean	N	Per Utterance	Group Mean
1;4	Jini	53	1	0.02		3	0.06	
	Sarah	17	0	0.00	0.01	0	0.00	0.03
1;10	Lucasi	25	0	0.00		0	0.00	
	Sarah	150	3	0.02	0.01	26	0.17	0.09
2;4	Paul	142	15	0.11		42	0.30	
	Lizzie	123	10	0.08	0.09	24	0.20	0.25
2;10	Elijah	232	29	0.13		87	0.38	
	Lizzie	182	18	0.10	0.11	70	0.38	0.38
3;4	Lizzie	117	27	0.23		71	0.61	
	Louisa	195	28	0.14	0.19	83	0.43	0.52

- 58 different verb inflection types used across the children

Inuktitut; Lee & Allen 2023: 190

More types (and tokens) of verbal inflections used as children get older

Table 37. Verbal inflections at each age in children's speech.

Mood	Inflection	1;4	1;10	2;4	2;10	3;4
Imperative	*-langa* '1SG.SBJ'				0.01	0.01
	-luk '1DU.SBJ'				0.01	0.03
	-ta '1PL.SBJ'				0.01	0.02
	-git '2SG.SBJ'		0.35	0.02	0.08	0.10
	-gitsi '2PL.SBJ'					0.01
	-li '3SG.SBJ'		0.08	0.06	0.03	0.05
	-lit '3PL.SBJ'			0.02		
	-lagit '1SG.SBJ.2SG.OBJ'				0.01	0.01
	-lagu '1SG.SBJ.3SG.OBJ'				0.01	0.03
	-lakka '1SG.SBJ.3PL.OBJ'				0.01	0.01
	-nnga '2SB.SBJ.1SG.OBJ'			0.03		
	-guk '2SG.SBJ.3SG.OBJ'	1.00	0.58	0.18	0.04	0.13

Inuktitut; Lee & Allen 2023: 190

Example Utterances for Verbal Inflection

*Qai-**guk***.
come-**IMP.2SG>3SG**
‘Bring it (to me).’ (Sarah 1;11)

*Kata-si-**mmat***.
descend-PRSP-**CTG.3SG**
‘It’s going down.’ (Paul 2;6)

*Nungu-tua-**ruma***.
be.finished-as.soon.as-**CND.1SG**
‘When I’m finished (with it)?’ (Lizzie 2;6)

Uku-a	*annia-**gama***	*pii-si-**jakka***.
DEM.this.one-DUPL.ST	be.sick-**CTG.1SG**	remove-PRSP-**PAR.1SG**

‘I will take these off because I am sick.’ (Louisa 3;3)

Inuktitut sketch data; Lee & Allen 2023: 203

Stages of Development

- Evidence for stages of development for a given type of morpheme?
- Increase in the number of categories marked?
- Increase in the number of items the morpheme attaches to?
- Increase in the complexity of forms?

“Stages” of Development for Nominal Inflection

Use

- Relatively little use before 2;0 and likely in frozen forms, use expands after 2;0

Case

- Absolutive is used earliest (by 1;4) and is most frequent case (~50%)
- Order: absolutive < modalis / allative / vialis < locative / ablative < ergative
- No use of equalis

Other Features

- Singular most frequent (80%), plural starts appearing by 2;4, no use of dual
- Possessive marking by 1;4, accounts for over 50% of nominal inflections
- 1st person possessive is used earliest (by 1;4) and is most frequent (~50%)

Inuktitut; Lee & Allen 2023: 194-195

“Stages” of Development for Verbal Inflection

Use

- 25% use on verb roots before 1;6 (i.e. early omission – see example on slide 14)
- over 90% use by 1;10 (i.e., target-like use)

Mood

- Earliest - imperative (e.g., -*git* ‘IMP.2SG.SBJ’)
  indicative (e.g., -*juq* ‘PAR.3SG.SBJ’)
- Next - contingent (e.g., -*gama* ‘CTG.1SG.SBJ’)
  interrogative (e.g., -*vit* ‘INT.2SG.SBJ’)
- Later - contemporative (e.g., -*tsuni* ‘CTM.4SG.SBJ’)
  incontemporative (e.g., -*lunga* ‘ICM.1SG.SBJ’)

Other Features

- Transitive predominates at 1;4-1;10, 75% intransitive at 2;4-3;4
- Singular most frequent, dual/plural starts appearing by 2;4
- 2nd person predominates at 1;4-1;10 (>90%), then 1st person is most frequent (45%)

Inuktitut; Lee & Allen 2023: 192

Productive Understanding of Morphology

What, if any, evidence can be used to show that children have a productive understanding of the morphology (rather than reproducing memorized forms)?

Productive Understanding of Root vs. Inflection

Use of the verb root with no inflection – not grammatical in target so suggests that Jini has segmented it from the preceding speech

MOT: *Pallar-tuq.*
trip-PAR.3SG.SBJ
'She tripped.'

MOT: *Ljukkar-tuq.*
fall-PAR.3SG.SBJ
'She fell.'

CHI: *Palla.*
trip
'Tripped.' (Jini 1;4)

Inuktitut; Lee & Allen 2023: 193

Productive Use of Nominal Inflection

Use of possessive inflection ***-ga*** ‘my’ with four different roots

*pi-**ga***
thing-POSS.1SG>3SG.ABS
‘My thing’. (Paul 2;6)

*nunakkujuu-nngua-**ra***
car-imitation-POSS.1SG>3SG.ABS
‘My toy car’. (Paul 2;6)

*anaana-**ga***
mother-POSS.1SG>3SG.ABS
‘My mother’. (Paul 2;6)

*pikku-alu-**ga**-li*
DEM.up.there-EMPH-POSS.1SG>3SG.ABS-and
‘And my thing up there’. (Paul 2;6)

Inuktitut sketch data

Mean Length of Utterance

- What is the mean length of utterance for each session?
- Is this best measured by morpheme, word, or syllable?

MLUm increases with children's age

Table 35. Average MLUm in children's speech.

	1;4	1;10	2;4	2;10	3;4
CHI A	1.19	1.48	2.59	3.07	3.53
CHI B	1.18	1.68	2.11	2.89	2.96
Average	1.18	1.58	2.35	2.98	3.25

One-morpheme utterance

Anaana!
mother
'Mother!' (Jini 1;4)

Six-morpheme utterance

Av-unnga-a-kainna-si-gama.
there-ALL-arrive.at-for.a.while-INCP-CTG.1SG
'Should it get anchored here?' (Elijah 2;9)

Inuktitut; Lee & Allen 2023: 189

Mean length of word in morphemes (MLWm) increases with children's age

Table 42. Word length in morphemes by age in children's speech.

Group	1	2	3	4	5	6	7
1;4	0.84	0.15	0.01				
1;10	0.68	0.23	0.07	0.01	0.01		
2;4	0.40	0.35	0.15	0.06	0.04		
2;10	0.36	0.29	0.17	0.11	0.04	0.01	0.01
3;4	0.34	0.31	0.20	0.09	0.05	0.01	0.01

The number of words at each age is as follows: 1;4=73, 1;10=198, 2;4=327, 2;10=570, 3;4=441.

- 1-morpheme words most frequent at every age
- 3-morpheme words common by 2;4
- 7-morpheme words present by 2;10

Inuktitut; Lee & Allen 2023: 199

More Systematic Analysis

For one or two morpheme types that are particularly salient in the language (and where there is enough data available), do a more systematic analysis.

Passives

Previous study with 21 hours of data →

passives used by 2;0, early and frequent compared to English, also full passives

Will we find the same pattern with 5 hours of sketch data?

11 passives in total

None at 1;4 or 1;10

Used by 2;4

(86) *atjiliurtausiarama.*
atjiliuq-jau-tsiaq-gama
film-PASS-well-CTG.1SG.SBJ
'I am being filmed well.'

1 full passive

(87) *ittumut qaiqujaugavit.*
ittuq-mut qai-qu-jau-gavit
ittuq-ALL.SG come-want-PASS-CTG.2SG.SBJ
'You were called for by Ittuq.'

Inuktitut; Lee & Allen 2023: 197-198

Noun Incorporation

Typologically interesting – polysynthetic structure allowing a word to comprise a full sentence

noun + verbalizer

(82) *mikijuunnginamaa.*
miki-juq u-nngit-gama
be.small-that.which COP-NEG-CTG.1SG.SBJ
'I am not small.' [lit: I am not one who is small] (Paul, 2;6)

(83) *sikituuviniqaratta!*
sikituuq-viniq qaq-gatta
snowmobile-former have-CTG.1PL.SBJ
'We have a broken snowmobile!' (Elijah, 2;9)

Inuktitut; Lee & Allen 2023: 197

More types (and tokens) of verbalizers used as children get older

Table 41. Verbalizers by age in children's speech.

Verbalizer	1;4	1;10	2;4	2;10	3;4
-tuq- 'consume'	1.00	0.40			0.03
-it- 'COP'		0.60	0.40	0.42	0.41
-aq- 'go by way of'			0.20		0.07
-liuq- 'make'			0.07		
-u- 'COP'			0.23	0.11	0.31
-uq- 'arrive at'			0.10	0.03	0.03
-guq- 'become'				0.05	
-ngaaq- 'rather'				0.02	
-qaq- 'have'				0.23	0.07
-siuq- 'look for'				0.02	
-taaq- 'acquire'				0.06	0.03
-taq- 'fetch'				0.02	0.03
-tuq- 'ride'				0.05	

The number of verbalizers at each age is as follows: 1;4=1, 1;10=5, 2;4=30, 2;10=63, 3;4=29.

- Used by 1;4 but rare and might be frozen form
- More frequent by 2;4
- Increased variety of structures with age

Inuktitut; Lee & Allen 2023: 197

Questions and Discussion

Good luck in writing up the morphology section!