Slide 1

CCLAS
Chisasibi
Child Language
Acquisition Study

Cree Child Language
Acquisition Study
(CCLAS) www.mun.ca/cclas

May 27, 2010

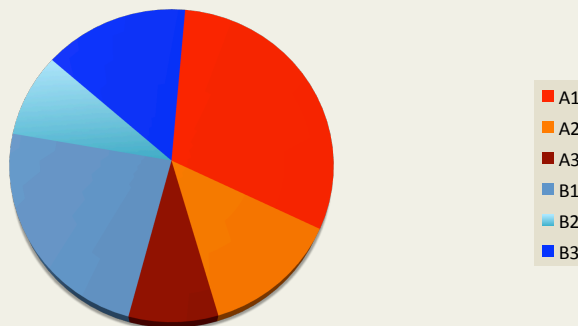Bridging the gap – how to make our data
serve a practical use

Slide 2

Making the connection between our research
and clinical applications …

(How) can we work with Speech-Language professionals
to assist in developing screening in the Cree language?

Slide 3

127 videos made over 30 month period
(2004 - 07), naturalistic diary study

In 2004, Group A are 2 years old, Group B are 4 years old.

- A1
- A2
- A3
- B1
- B2
- B3

Slide 4

Example of a Phon record (Ani, age 3;08)

#9	A1
Orthography	$[\hat{a}hku = si = u]$
Morpheme Type	$[initial = vai.final = IIN]$
Morpheme Meaning	$[be.sick = final = 3]$
Target Morphology	$[?ak = s = o]$
Actual Morphology	$['ak = s = o]$
Translation	he is sick
Notes	JB: first part of target was transcribed as %%%, which I deleted. No notes to say what it meant. There is more in the actual than in the target - looks like all DBK could understand was the target she gave us; I decided to treat preceding sounds as non-linguistic and deleted them; (KT) DB says that she does not understand 'the first part'.
Segment	000:52.142 to 000:58.551 Play Export

Syllable information (3;08)

| #7	A1
Orthography	⌈tân kâ = itwâ = htih = ch⌉
Morpheme Type	⌈p,quest pvb.IC = vii.final = CIN⌉
Morpheme Meaning	⌈what that = make.certain.noise = final = 3s⌉
Target Morphology	⌈dan ɡe = ˈdɑ = dɪ = tʃ⌉
Actual Morphology	⌈dɛm bə = ˈɹɑ = pɪ = d⌉
Target Syllables	d a n ɡ e d a d ɪ tʃ
Actual Syllables	d ɛ m b ə ɹ ɑ p ɪ d
Alignment	d a n ɡ e d a d ɪ tʃ d ɛ m b ə ɹ ɑ p ɪ d
Segment	000:45.799 to 000:49.508 Play Export
Notes	(E) Not sure if this is a /v/; MM: this is an n-stem verb, iitwaahtin, and the n > h before = ch
Translation	what is making that noise?

(3;08) alignment mismatch …

#16	A1
Orthography	⌈awân kâ = ihtut = ih = k⌉
Morpheme Type	⌈pro,wh preverb = initial = vti.final = CIN⌉
Morpheme Meaning	⌈who that = do = final = 3s⌉
Target Morphology	⌈wʊn ɡa = dʊt = (h) = kʰ⌉
Actual Morphology	⌈o ˈno = dʊt = Ø = Ø⌉
Target Syllables	w ʊ n ɡ a d ʊ t kʰ
Actual Syllables	o n o d ʊ t
Alignment	w ʊ n ɡ a d ʊ t kʰ o n o d ʊ t
Translation	who did that?
Notes	(KT) Interlocutor has just asked 'What's that sitting there?' in Cree; MM: ihtut = ih = k from itutim, and m > h before = k; metathesis on verb ending?
Segment	002:21.488 to 002:23.715 Play Export

Data processing …

- IPA ACTUAL Double blind transcription
- VALIDATION Review of double blind transcriptions, to agree on one form, or discard.
- IPA TARGET & TRANSLATION (Cree-speaker)
- CREE ORTHOGRAPHY   *ihtaayiu*
- MORPHOLOGY   *iht=aa=yi=u*

GROUP A (2 - 4 ½ years)
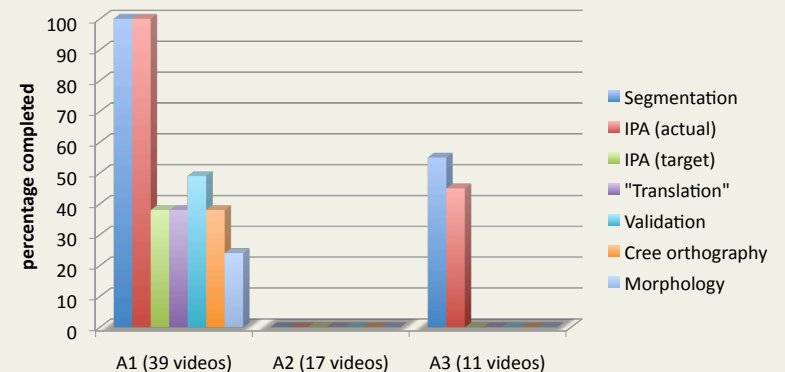
GROUP B (4 - 6½ years)
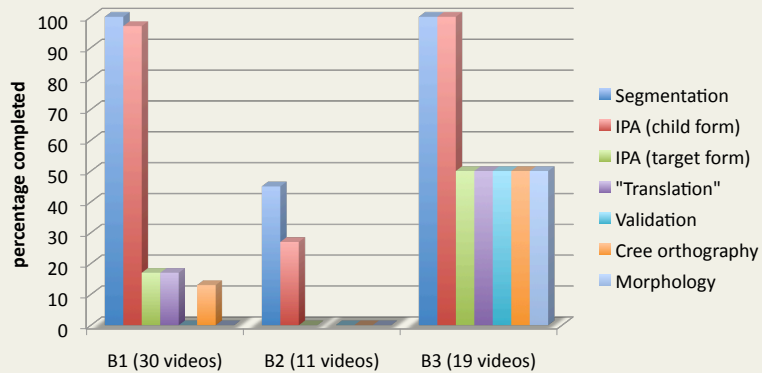
What we have ready for analysis…
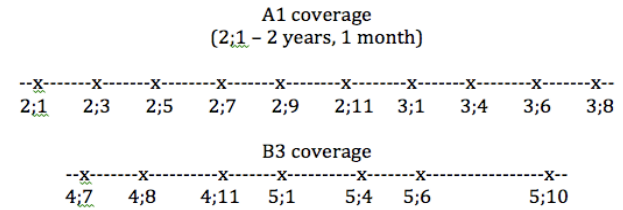
Examples of types of information we have access to …

For one child from each age group, development of:

- Vocabulary – word list (verbs, nouns, adverbs, prepositions, pronouns, conjunctions, etc)
- Use of prefixes, suffixes, "preverbs", etc.
- English:Cree ratio (and parts of speech)
- The verb – how do children build verbs (constitute approximately 80% of language)
- Acquisition of syllable structure & consonants by type

CCLAS Research: three principal areas of research, to date …

Selected bibliography of talks, publications, manuscripts and ongoing projects (handout pages 3, 4), based on 10 A1 (Ani) sessions:

1. Phonetics/phonology (syllable structure; consonants)
2. Acquisition of demonstrative pronouns
3. Verbal inflection (Animate Intransitives)

(1) Syllable structure

- Two sessions (2;01, 3;08) examined, syllable structure acquired (acquired = 80% success rate) CV, CVC, in keeping with observations based on a wide range of languages.

(Thorburn 2010)

Plosives in onset position /p/
(Thorburn 2010)

Production of /p/ in Session 1

Attempted:	17			
Target-like:	11	(64.7%)		
Deleted:	0	(0.0%)		
Substituted:	6	(35.3%)		
	Other labials:	[w][9]	1	(5.9%)
	Other plosives:	[t]	4	(23.5%)
		[k]	1	(5.9%)

Production of /p/ in Session 2

Attempted:	40			
Target-like:	33	(82.5%)		
Deleted:	4	(10.0%)		
Substituted:	3	(7.5%)		
	Other labials:	[w]	3	(7.5%)

Plosives in onset position /t/

Production of /t/ in Session 1

Attempted:	51	
Target-like:	40	(78.4%)
Deleted:	2	(3.9%)
Substituted:	9	(17.6%)[10]

Production of /t/ in Session 2

Attempted:	112	
Target-like:	88	(78.6%)
Deleted:	5	(4.5%)
Substituted:	19	(17.0%)

Plosives in onset position, overview
(Thorburn 2010)

Given the 80% benchmark, A1 has acquired one NEC plosive (/p/) and is on the cusp of acquiring the other two. These data are summarized in Figure 4. The results for /t/ and /k/ are consistent across sessions but those for /p/ show significant change.
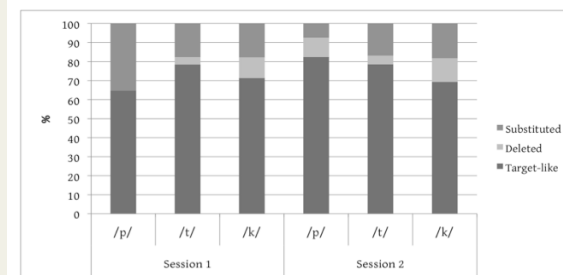

Figure 4. A1's acquisition of plosives in onset position.

(2) Age 2;01, most proximate singular demonstrative forms are in place (Oxford 2007)

	Basic demonstratives			Emphatic demonstratives		
	Prox	Dist	Rem	Prox	Dist	Rem
Anim Prox Sg	û	an		mâw	mân	
Inan Prox Sg						mânâ
Adv Restr				mâutih		
Adv Extend			nâtâ	mâutâ(h)	mânitâ(h)	mânâtâ(h)

2 months later (2;03), new forms are highlighted

	Basic demonstratives			Emphatic demonstratives		
	Prox	Dist	Rem	Prox	Dist	Rem
Anim Prox Sg	û	an		mâw	mân	
Inan Prox Sg			nâ			mânâ
Anim Prox Pl			nâch(î)	mâuch(î)		
Inan Obv Sg	uyâ, uyâyû	aniyâ, aniyâyû	nâyâ, nâyû		mâuyâ, mâuyâyû	mâniyâ, mâniyâyû

More than a year later (3;06)

	Basic demonstratives			Emphatic demonstratives		
	Prox	Dist	Rem	Prox	Dist	Rem
Anim Prox Sg	û	an		mâw	mân	
Inan Prox Sg			nâ			mânâ
Anim Prox Pl			nâch(î)	mâuch(î)		
Inan Prox Pl				mâuhî		
Inan Obv Sg	uyâ, uyâyû	aniyâ, aniyâyû	nâyâ, nâyû	mâuyâ, mâuyâyû	mâniyâ, mâniyâyû	

(3) Verb types: transitivity/gender agreement, (handout (a))

- 4 (agreement) verb types: 2 Intransitive, 2 transitive, agreeing with gender (animate/inanimate) of subject, object, respectively.
- Animate intransitive (AI) *mihkusiu* '(fox) is red'
- Inanimate intransitive (II) *mihkwaau* '(car) is red'
- Transitive Animate (TA) *waapimaau* 's/he sees (fox)'
- Transitive Inanimate (TI) *waapihtim* "s/he sees (car)'
- And for each, 3 inflectional "orders" …

A1 (Ani): Transitivity of verbs

Percentage of all verbs

Ages in years and months

Legend: AI, II, TI, TA

Child A1: Order of verbs

Percentage of all verbs

Age in years and months

Legend: Independent, Conjunct, Imperative
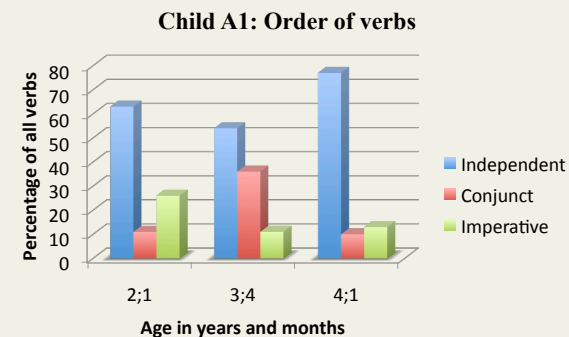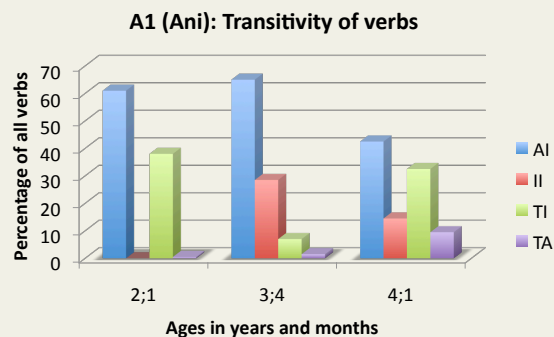
Verbal inflection: acquisition (based on Ani's 10 sessions, 2;01 – 3;08)

- For all verb types, Ani produces the (more grammatically transparent) Independent order most often, in spite of projected input frequency.
- She also produces Animate Intransitives more frequently than any other type of verb.

Independent vs. Conjunct orders

	Independent	**Conjunct**
Syntax	Restricted to a subset of main clause contexts, and is posited to be the elsewhere inflection.	Required in: • subordinate clauses • wh-clauses • focus constructions
Morphology	Less fusional	• More fusional • Initial Change

Representative examples (handout (c))

Independent	Conjunct
Aakusiu.	*Awaan iyaakusit?*
aakusi-u	awaan iyaakusi-t
be.sick-3	who (IC)be.sick-3.s
"S/he's sick."	"Who's sick?"

(2;01) transitivity classes

	AI	II	II/AI*	TA	TI	Child	Unan.
Types	4	0	0	1	3	2	1
Tokens	15	0	0	1	5	7	1

(2;07) transitivity classes

	AI	II	II/AI	TA	TI	Child	Unan.
Types	8	1	1	3	3	3	2
Tokens	18	15	14	4	12	3	2

(3;08) transitivity classes

	AI	II	II/AI	TA	TI	Child	Unan.
Series1	24	4	2	6	5	3	3
Series2	37	10	4	9	41	3	3
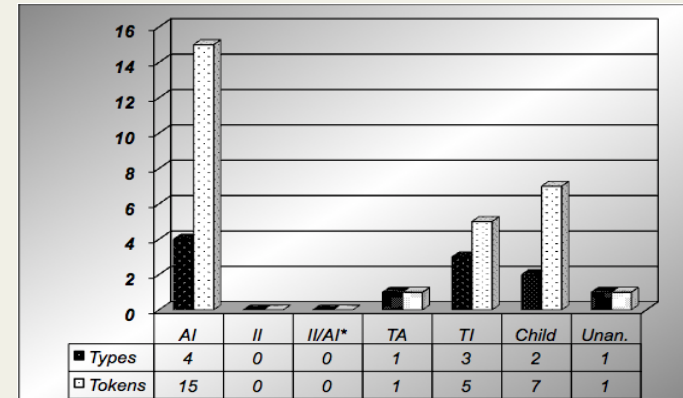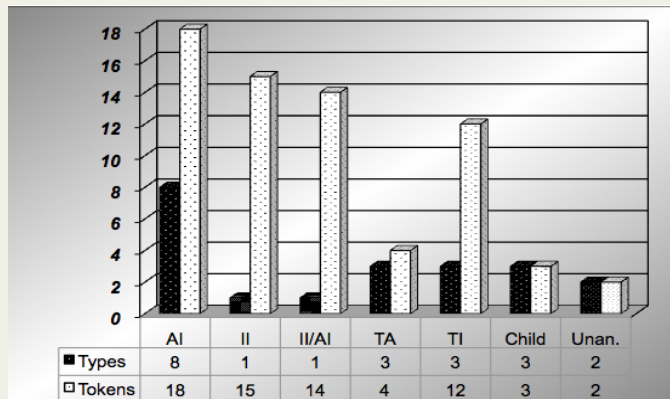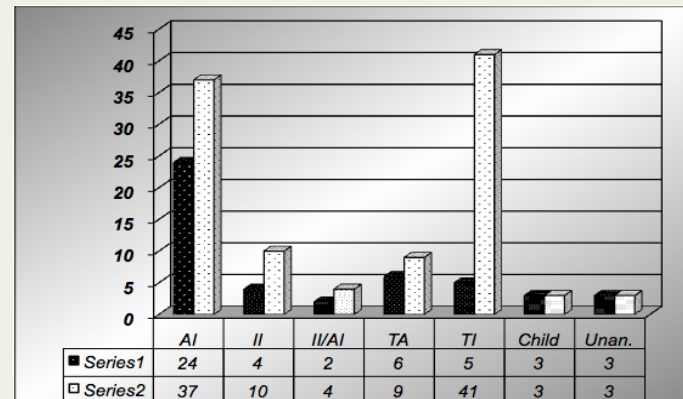
Age 3;04, a dip in performance (handout (d))

- Productive (innovative) inflection of child forms
  - From age 3;04, Ani inflects 'child' forms (AI verbs, handout (b))
  - These forms are inconsistently, if at all, inflected in the input
- Performance drop
  - The onset of productive grammatical analysis (3;04) coincides with a drop in performance, suggesting a move from use of stored amalgams to creative use of rules (more errors made with suffixes, but she improves on prefixes; phonological template expands).

Ani's child forms (see handout (b)) at age 2;06 and 3;08

	Age 2;06	Age 3;08
Orthography	*mîmî*	*mîmî -u*
IPA target	['mimi]	[mi'mij –o]
Gloss	sleep	sleep -3
Morpheme type	Child form	Child form -IIN
Translation		's/he's asleep'
IPA actual	[mimi]	[mimij -oː]
Orthography	*kîkî*	*ni- kîkîsh -n*
IPA target	['gigi]	[nə- 'gigiʃ -ɪn]
Gloss	hurt	1- be.hurt.DIM -non.3
Morpheme type	Ch.form	1- Ch.form.DIM -IIN
Translation		'I'm hurt, I'm in pain'
IPA actual	[digi]	[Ø- gigis -jɪd]

Production of 1st person singular inflection (on AI Independent verbs)

Child (A1)'s Age	Prefix (ni-)			Suffix (-n)		
	Target	Actual	Percentage	Target	Actual	Percentage
2;01.12						
2;03.24						
2;06.05						
2;07.19	4	0	0	4	4	100
2;09.28	2	0	0	2	2	100
2;11.15	3	1	33.3	3	3	100
3;01.18	2	1	50	2	2	100
3;04.09	1	0	0	1	1	100
3;06.23	3	0	0	3	3	100
3;08.24	14	7	50	14	7	50

Interpretation: creative rule use begins at ≈3;04

- Initial productions are stress-driven
  - Swain (2009): child's initial foot: WS
  - Prefix deletion: prefix outside of the initial foot
  - Suffix production: final syllable part of the foot-size amalgam
- Performance dip at ≈3;04:
  - Ani is engaging in productive grammatical analysis
  - The emerging grammar imposes a greater processing burden (speech no longer made of amalgams)
  - Hence the decline in performance observed

Acquiring Cree …

Acquiring the grammar of a language like Cree *may* be a somewhat different task from learning the grammar of a French/English type language.

- Cree grammar is to a larger extent a matter of verbal constructions.
- Verbs are potentially highly complex derivationally, and there is a great deal of inflection to learn.
- Word order is more flexible and lexical nominals are frequently omitted (because so much is encoded in the verb).

2008 community (Chisasibi) discussions identified the need for …

- more culturally and linguistically appropriate screening materials (there is a sense that Cree children are being over-diagnosed with speech delay problems);
- taking stock of what Cree language materials/ procedures exist already;
- systematic basic training for Cree-speaking daycare workers, to flag need for early intervention;
- more community information on the effects of exposing a child to two (or three) languages simultaneously.

To conclude …

GIVEN OUR SMALL (BUT DETAILED) DATABASE, ARE THERE POSSIBILITIES FOR PRACTICAL APPLICATION FOR THE SPEECH COMMUNITY?