Language acquisition in crosslinguistic Perspective

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HOW TO MEASURE DEVELOPMENT?

(STOLL & GRIES SUBM.)

RESEARCH QUESTIONS

1. How do children learn aspect?
2. How can we trace their development?
3. When can we state that they have acquired aspect?

RUSSIAN ASPECT

Perfective aspect

[----------]

Imperfective aspect

WHAT DO CHILDREN HAVE TO LEARN?

Grammatical difference between pfv. and ipfv. verbs

	Imperfective *rasskazyvat'*	Perfective *rasskazat'*
Future	*budu rasskayvat'*	*rasskazhu*
Present	*rasskazyvaju*	----
Past	*rasskazyvala*	*rasskazala*

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WHAT DO CHILDREN HAVE TO LEARN?

Morphology of Russian aspect:

Imperfective	Perfective
dumat'	*dat'*
vorozhit'	*vorotit'*
brosat'	*brosit'*
poluchat'	*podumat'*

MORPHOLOGY OF RUSSIAN ASPECT

Rule 1:

Verbs with the suffixes {-a/-aj}, {-va/-vaj} or {-iva/-ivaj} are imperfective.
e.g. *perepis-yv-at'* 'copy', *rasskaz-yv-at'* 'tell'

Exceptions: double prefixation, z.B. *po-vy-task-yv-at'* 'pull out'

Rule 2:

Prefixed verbs are perfective
e.g. *pere-pisat'* 'copy', *po-dumat'* 'think for a while', *za-plakat'* 'start crying'
Exceptions: e.g. *pred-videt'* 'forsee', *pred-čuvstvovat', pri-xodit'* 'come'

Rule 1 and 2 are ordered hierarchically.Rule 1 wins over Rule 2 if both could apply. e.g.
pere -pis-yv-at' 'copy'

(Stoll,1998)

MORPHOLOGY OF RUSSIAN ASPECT

Rule 3:
Simplex verbs are imperfective.
e.g. *dumat'* 'think', *spat'* 'sleep', *čitat'* 'read'

Exceptions: verbs of conjugation class V, ending in *-it'*, *e.g. brosit'* 'throw'; *dat'* 'give', *vzjat'* '*take*'.

Rule 4:
Verbs with the suffix *-nu* are perfektive.
e.g. *pryg-nu-t'* 'jump once', *krik-nut'* 'scream once'

Exceptions: z.B. *tonut'* 'drown', *gnut'* 'bend', *tjanut'* 'pull'.

(Stoll,1998)

DECODING OF ASPECT?

Rules are complicated with lots of exceptions and lots of rote learning required

- It is doubful that aspect is decoded by morphological rules alone.

(Stoll, 1998)

HOW IS ASPECT LEARNED?

As a unified grammatical category?

or

In a piecemeal fashion via lexical aspect/ Aktionsarten?

RESULTS FROM OTHER LANGUAGES

Aspect Hypothesis

Strong empirical tense/aspect patterning in early acquisition:

perfective aspect & telic Aktionsart ∞ past tense
imperfective aspect & atelic Aktionsart ∞ present tense

Longitudinal observational data

English: Brown (1973); Bloom, Lifter & Haffitz (1980): age 1;10 -2;4;
Shirai & Andersen (1995): age 1;6 – 4;10
Italian: Antinucci & Miller (1976): age 1;6 to 2;6
Turkish: Aksu-Koç (1988)
Greek: Stephany (1988,1997)
Mandarin: Li (1990)
Japanese: Rispoli&Bloom (1985), Shirai (1998)
Polish: Weist et al. (1984, 1991)
Russian: Gagarina (2000)

Experimental data

English: Harner (1981) age 3-7; McShane & Whittaker (1988), Bloom et al. (1980)
French: Bronckart & Sinclair (1973)
Mandarin: Li (1990)
Russian Stoll (1998, 2001)

(Stoll & Gries, subm.)

ASPECT IN THE INPUT?

Brown (1973) and Stephany (1988) hypothesized that the distributions in the input are similar to that of the output.

Distributional Bias Hypothesis:

> The input provides a similar distribution of tense-aspect forms as found in the child data (Shirai & Anderson 1995: 747).

However:

There are few studies relating the child's output to the child's input in this area (Stoll & Gries, subm.)

HOW IS ASPECT LEARNED?

Stephany (1981) was first to look at the input and compare it to the output of children (Greek)

Results: very similar distributions

- In the mothers 96% of all past forms are perfective
- In children 100% of all past forms are perfective.
- In adult to adult speech there more imperfective verbs in the past tense than in child directed speech.

OUR GOALS

General goal: Introduce a statistical method

- that allows to trace development in longitudinal corpora (in general).
- that correlates the input of the child with the output

- Specific goal: longitudinally trace the children's acquisition and development of tense/aspect in corpora

(Stoll & Gries, subm.)

DATA

Corpus of Russian Child Language (Stoll)

- 4 target children video-recorded over several years (weekly hour long recordings)
- Transcribed (Tatjana Krugljakova)
- Morphologically Glossed (Stochastic Tagger, Roland Meyer)
- Handcorrected (Tatjana Krugljakova, Madelaine Taoubi)

(Stoll & Gries, subm.)

OUR STUDY

	Age	Recordings (1h each)
Child 2	1;11 - 4;3	80
Child 3	3;1 - 6;7	117
Child 4	2;3 - 5;6	66
Child 5	11,7 -13;11	42

(Stoll & Gries, subm.)

DATA

- Verbs with ambiguous coding and imperatives excluded
- Manual check of grammatical tagging of all verb forms
- Retrieval of tense marking and aspect marking of all verb forms
  - is an effect size, i.e. unaffected by (different) sample sizes

(Stoll & Gries, subm.)

DATA

- Association between tense and aspect is tested,
  ==> we use an association measure as our most central statistic: Cramer's V
- Measure of correlation
  - ranges from 0 to 1
  - is (close to) 0 when tense and aspect are not

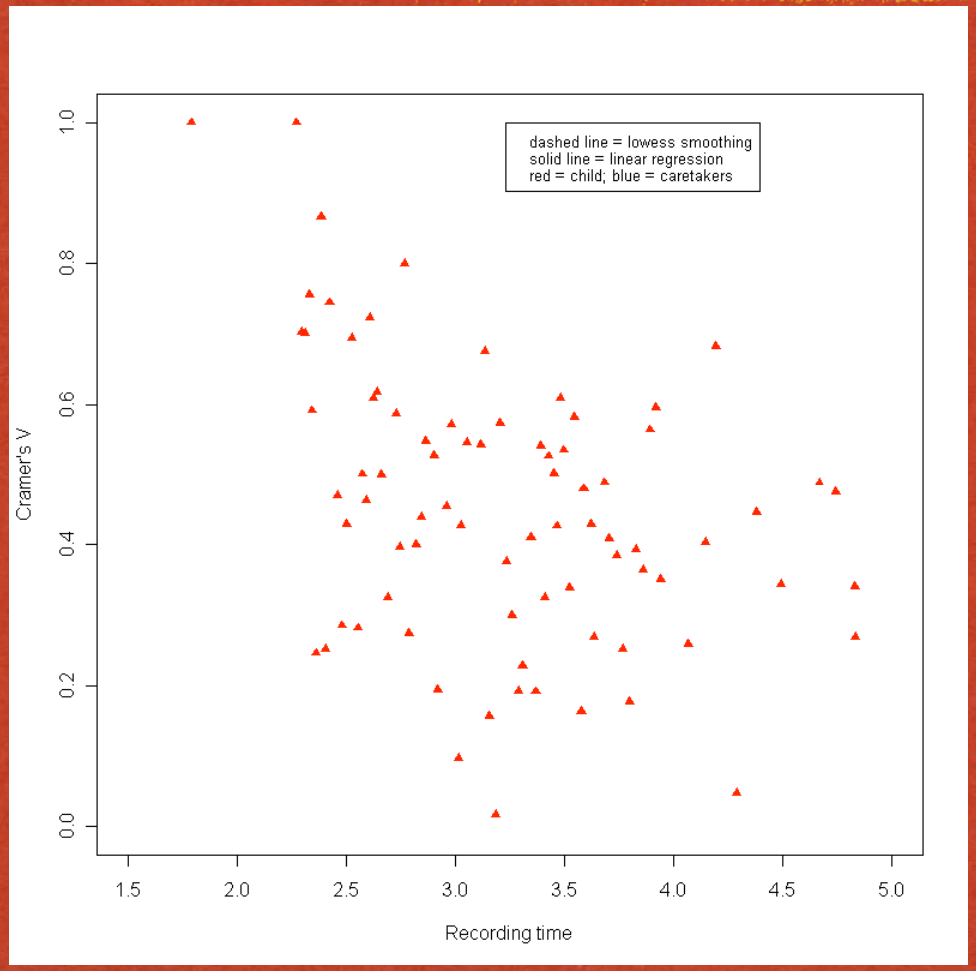
(Stoll & Gries, subm.)

DATA ANALYSIS

- Plotting the data
  - for each recording (on the x-axis), we plotted
    - the Cramer's V values of the child (on the y-axis)

(Stoll & Gries, subm.)

RESULTS FOR CHILD 2



(Stoll & Gries, subm.)

DATA ANALYSIS

- Plotting the data
  - for each recording (on the x-axis), we plotted
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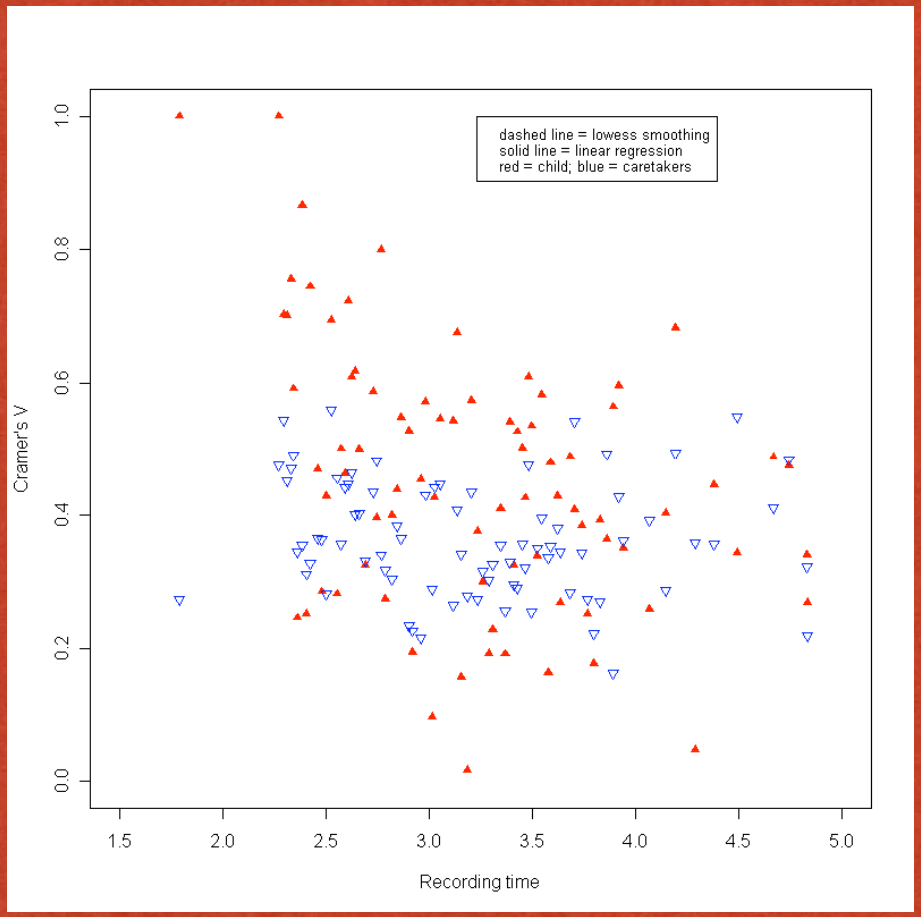
    - the Cramer's V values of the caretakers (on the y-axis)

(Stoll & Gries, subm.)

RESULTS FOR CHILD 2



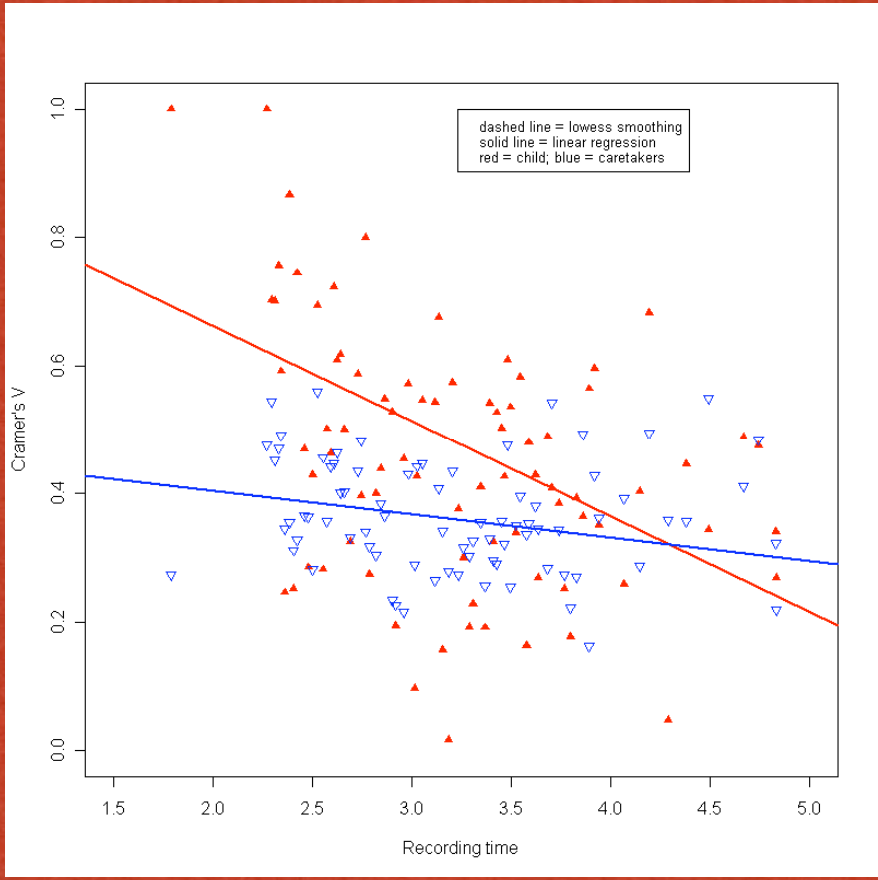
(Stoll & Gries, subm.)

DATA ANALYSIS

- Plotting the data
  - for each recording (on the x-axis), we plotted
    - the Cramer's V values of the child (on the y-axis)
    - the Cramer's V values of the caretakers (on the y-axis)
  - to each of these scatterplots, we added
    - a line resulting from a linear regression

(Stoll & Gries, subm.)

RESULTS FOR CHILD 2



(Stoll & Gries, subm.)

DATA ANALYSIS

- The use of simple correlational techniques (Pearson's r or simple linear regression) is not useful
  - linear regressions are particularly sensitive to outliers
  - linear regressions are particularly insensitive to curvature
- thus, as a simple summary statistic, such measures provide less information than they hide

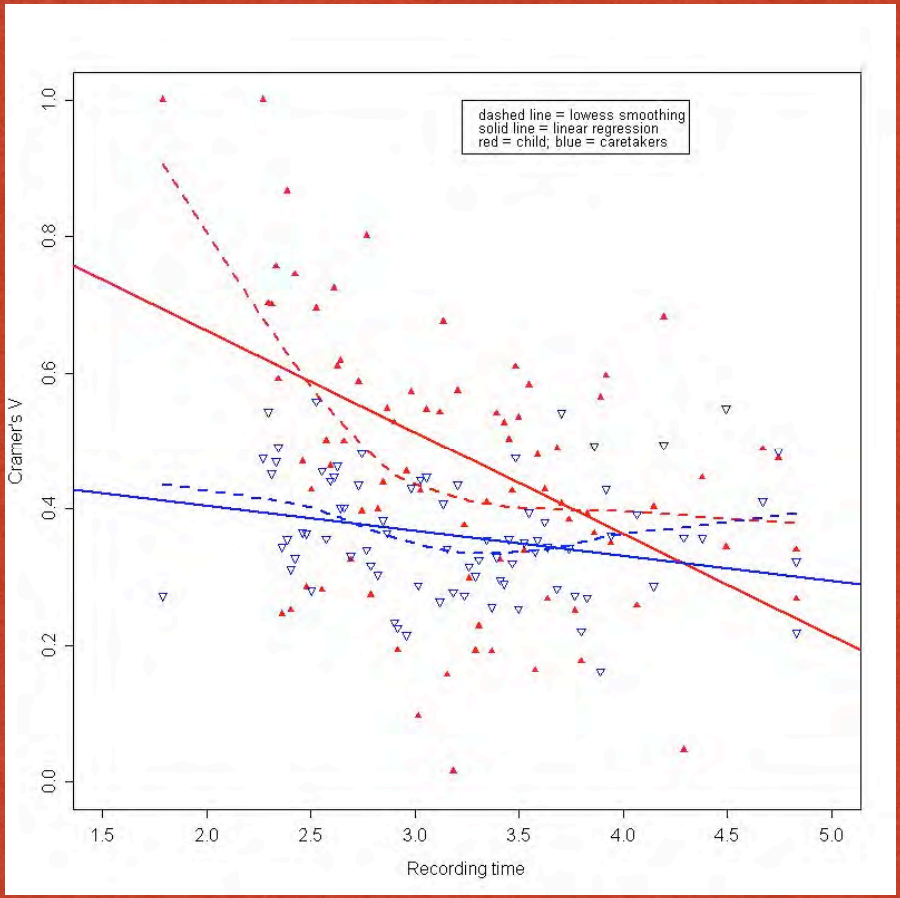
(Stoll & Gries, subm.)

DATA ANALYSIS

- Plotting the data
  - for each recording (on the x-axis), we plotted
    - the Cramer's V values of the child (on the y-axis)
    - the Cramer's V values of the caretakers (on the y-axis)
  - to each of these scatterplots, we added
    - a line resulting from a linear regression
    - a line resulting from a non-parametric smoothing technique (locally weighted robust

(Stoll & Gries, subm.)

RESULTS CHILD 2



(Stoll & Gries, subm.)

General findings:

- Aspect hypothesis confirmed for both Child2 and her caretakers
- Child2 is much more conservative than her caretakers

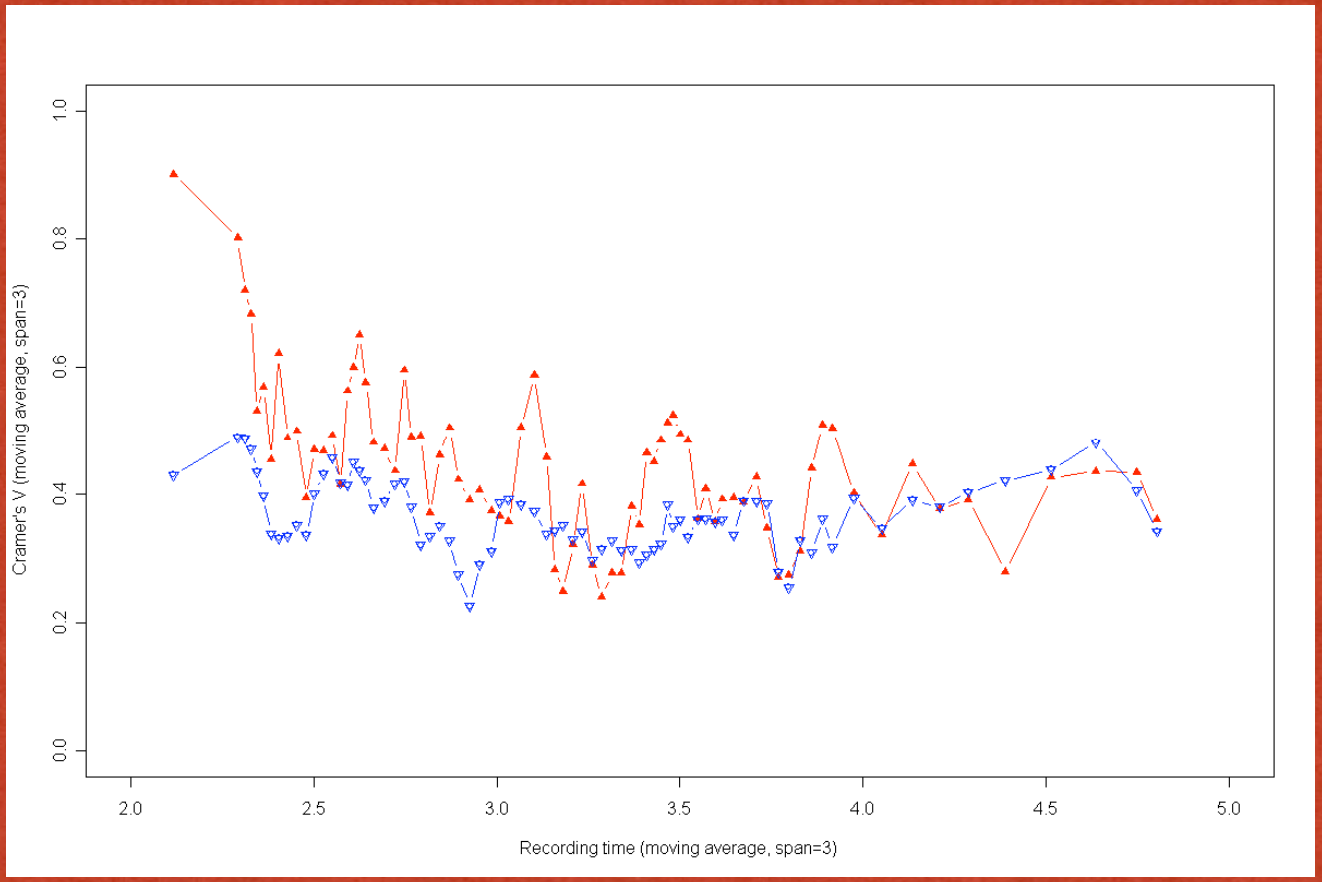
Child2

- Developmental curve
- Sharp decline until nearly age 3
- Flattening out as of age 3 resulting in a nearly parallel line to that of the caretakers

Caretakers

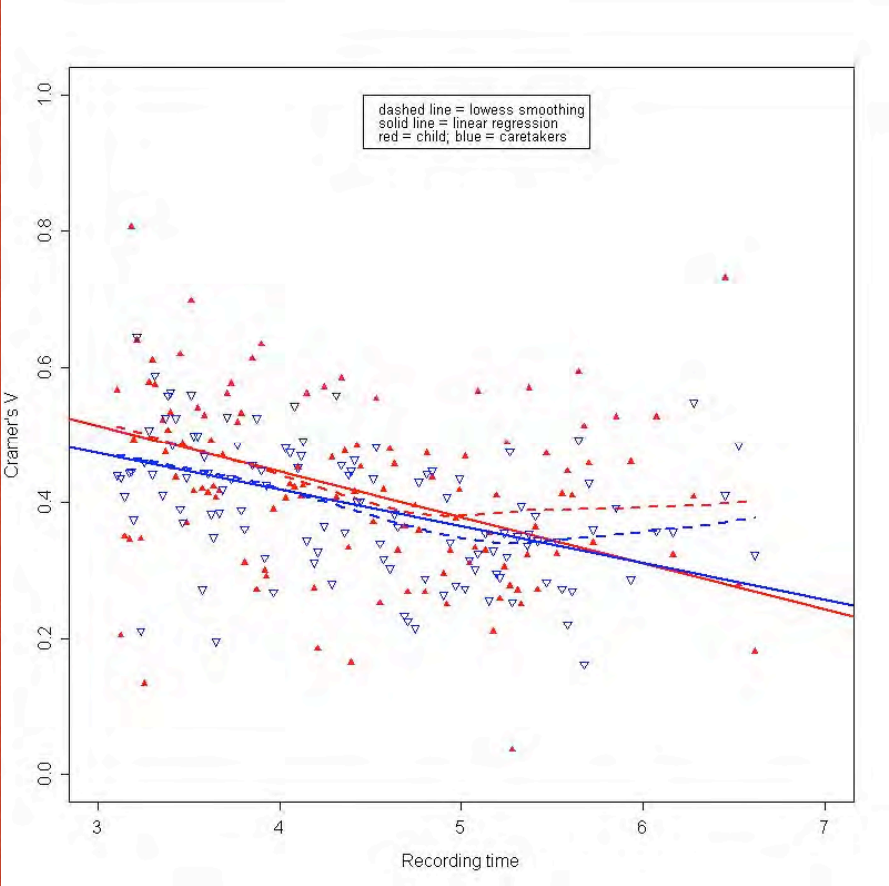
- No consistent developmental curve or pattern of change (as expected)
- Slight hump around age 3

RESULTS CHILD 2



(Stoll & Gries, subm.)

RESULTS CHILD 3



(Stoll & Gries, subm.)

General findings:

- Aspect hypothesis confirmed for both Child3 and his caretakers
- Child3 is more conservative than his caretakers

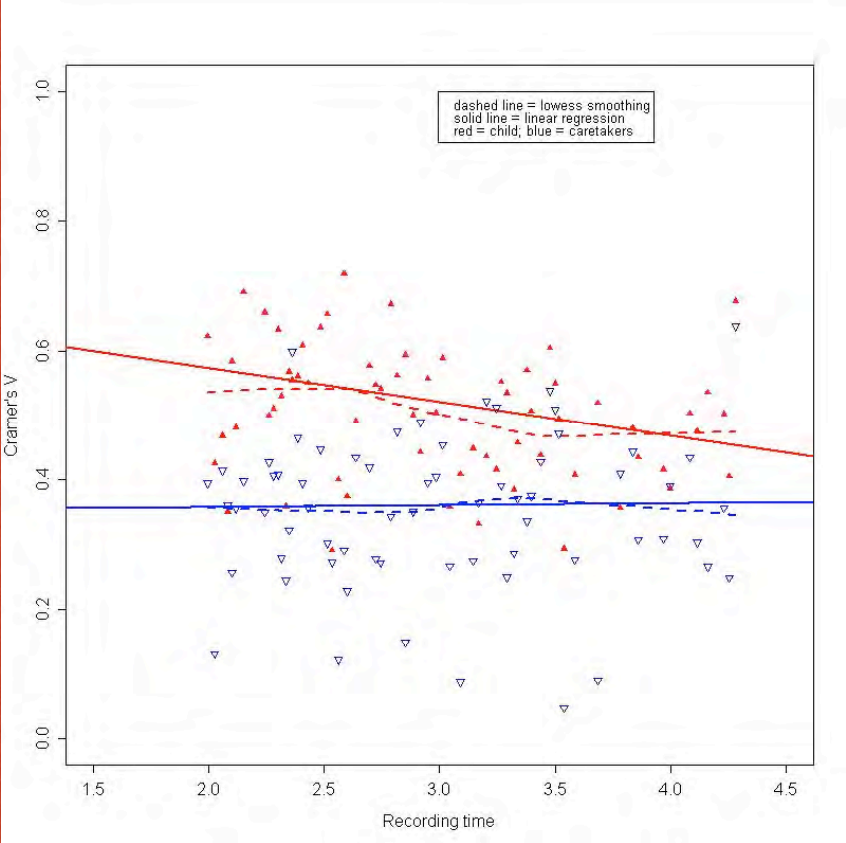
Child3

- Developmental curve
- Decline until nearly age 5
- Flattening out as of age 5

Caretakers

- No consistent developmental curve or pattern of change
- Slight hump around age 5, after that, flattening as of then

RESULTS CHILD 4



(Stoll & Gries, subm.)

General findings:

- Aspect hypothesis confirmed for both Child4 and his caretakers
- Child4 is much more conservative than his caretakers

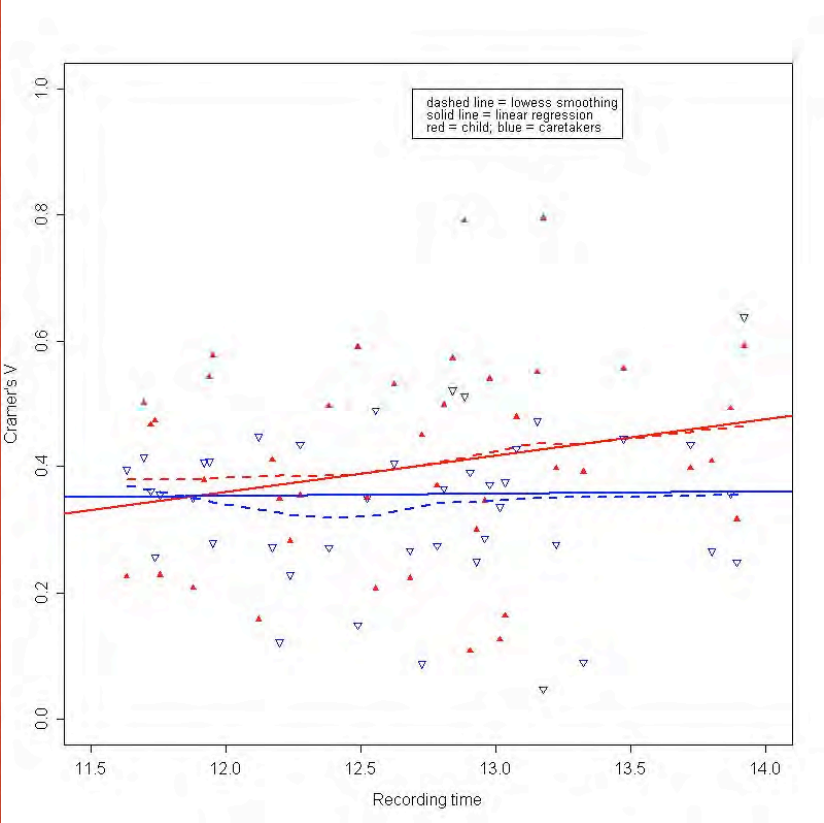
Child4

- Less pronounced developmental curve
- Slight decline as of age 2;6
- Flattening out as of age 3;6
- Possible confounding variable: MLU (Child4's MLU at the beginnings of the recordings is 0.8 words larger than that of Child2)

Caretakers:

- Absolutely no developmental curve or pattern of change (as expected)

RESULTS CHILD 5



(Stoll & Gries, subm.)

General findings:

- Aspect hypothesis confirmed for both Child5 and his caretakers
- Child5 is slightly more conservative than his caretakers

Child5:

- no consistent developmental curve (as expected)

Caretakers:

- no consistent development curve or pattern of change (as expected)

MAJOR FINDINGS

- The Aspect Hypothesis is confirmed for child data. Russian children prefer: perfective with past and imperfective with non-past
- Adults talking to children also exhibit the above tense/aspect patterning
- New method to trace development: Assosication Strength Approach
- First time that development of aspect is traced in such detail

(Stoll & Gries, subm.)

MAJOR FINDINGS

- Developmental Findings: strong variation found across children and also in the adult data across sessions.
- New Criterion for acquisition: Distributional equivalence between child and caretakers:
  - Here: Endpoint of acquisition corresponds to the mean Cramer's V of all caretakers in our data: 0.357±0.015 (95% C.I.)
    The three groups of caretakers do not differ from each other significantly (adj. R^2=-0.007; $F_{2, 188}$=0.295; p=0.7449)

(Stoll & Gries, subm.)

APPROACHES

2 main approaches to do crosslinguistic research with the data we have available.

1. Intragenealogical approach: comparisons of closely related languages (e.g. within a language family within or across subbranches).

2. Intergenealogical approach: comparisons of typologically unrelated languages with interesting variance in a specific variable.

INTRAGENEALOCIAL APPROACH

To study a specific question:

- Choose a group of languages that share a selection of features. Then one can focus on variation along specified dimensions.
- Keep most factors constant in order to explore the role of variation of a specific feature. E.g. test for the replication of a developmental pattern across languages.

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EXAMPLE INTRA-GENEALOGICAL APPROACH

	Masc. Animate	Masc. Inanimate	Feminine	Neuter
Russian Nom Acc	‘son’ *syn* *syna*	‘house’ *dom* *dom*	‘rose’ *roza* *rozu*	‘apple’ *jabloko* *jabloko*
Polish Nom Acc	*syn* *syna*	*dom* *dom*	*róza* rózę	jabłko jabłko

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INTERGENEALOCIAL APPROACH

- Determine according to which dimension languages can vary with respect to a specific phenomenon.
- Check in a set of languages which exhibit these features and vary along various dimensions.

Goal: search for (universal patterns) and typologically specific factors.

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RELATIONSHIP BETWEEN COGNITION AND LANGUAGE

1. Language influences cognition (Whorf, Linguistic relativity hypothesis)
2. Cognition comes first and children learn semantic organization as they map words onto concepts.

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SPATIAL COGNITION AND LANGUAGE

- Constraints by biological and environmental influences (e.g. vision, poture, front-back body assymetry and gravity, Clark 1973)
- Consistent order of acquisition of spatial words (*in, on, under, next to, between, in front of, behind*)

ACQUISITION OF SPATIAL PREPOSITIONS

TABLE I.1
Order of Acquisition of Locative Expressions in Four Languages and Percentage of Subjects Producing Each[a]

Scale Point	*English*		*Italian*		*Serbo-Croatian*		*Turkish*	
1	IN	90	IN	91	ON	88	IN	90
2	ON	83	ON	88	IN	84	ON	80
3	UNDER	81	UNDER	84	BESIDE	82	UNDER	79
4	BESIDE	74	BESIDE	77	UNDER	72	BESIDE	79
5	BETWEEN	49	BETWEEN	57	$BACK_f$	31	$BACK_f$	71
6	$FRONT_f$	30	$BACK_f$	42	BETWEEN	26	$FRONT_f$	53
7	$BACK_f$	21	$FRONT_f$	41	$FRONT_f$	19	BETWEEN	50
8	BACK	14	BACK	23	BACK	16	BACK	7
9	FRONT	3	FRONT	18	FRONT	12	FRONT	4
Gutman coefficient of reproducibility		0.93		0.89		0.86		0.91
Number of subjects		86		74		90		70

[a]Data come from an elicitation task carried out with subjects between the ages of 2;0 and 4;8. The subscript *f* on BACK and FRONT denotes location with regard to reference objects that have an inherent front-back orientation (e.g., cars, houses), while BACK and FRONT without the subscript denote non-oriented reference objects (e.g., plates, blocks). This table appears as Table 5 in Johnston and Slobin (1979, p. 537).

(Johnston & Slobin 1979)

Spatial demonstratives in Chintang

		Ø TRANPOSED (not with me)	PROXIMAL	DISTAL	F TRANSPOSED (not with me)	F AT SPEAKER (up to me)	interjections
UP	LOCATIVE	utu(ba)	toba	atu(ba)	tobandu	bandu	to, toto, toi, togoi
	DIRECTIVE	utuʔni	toʔni	atuʔni			
	ABLATIVE	utubaʔŋa	tobaʔŋa	atubaʔŋa			
	LATIVE	utupʌtti	topʌtti	atupʌtti			
	GENITIVE	utu(ba)ko*	togo	atu(ba)ko			
DOWN	LOCATIVE	umu(ba)	moba	amu(ba)	mobamu	bamu	mo, momo, moi, mogoi
	DIRECTIVE	umuʔni	moʔni	amuʔni			
	ABLATIVE	umubaʔŋa	mobaʔŋa	amubaʔŋa			
	LATIVE	umupʌtti	mopʌtti	amupʌtti			
	GENITIVE	umu(ba)ko	mogo	amu(ba)ko			
ACROSS	LOCATIVE	uyu(ba)	yoba	ayuba	yobayu	bayu	yo, yoyo, yoi, yogoi
	DIRECTIVE	uyuʔni	yoʔni	ayuʔni			
	ABLATIVE	uyubaʔŋa	yobaʔŋa	ayubaʔŋa			
	LATIVE	uyupʌtti	yopʌtti	ayupʌtti			
	GENITIVE	uyu(ba)ko	yogo	ayugo			

*Note: derived from *-pak-ko*, where the final /k/ of *-pak* is optional, as in Athpare and Belhare.

Terms:

- zero-point (Ø): the point of reference from which something is being located
- figure (F): the place being located

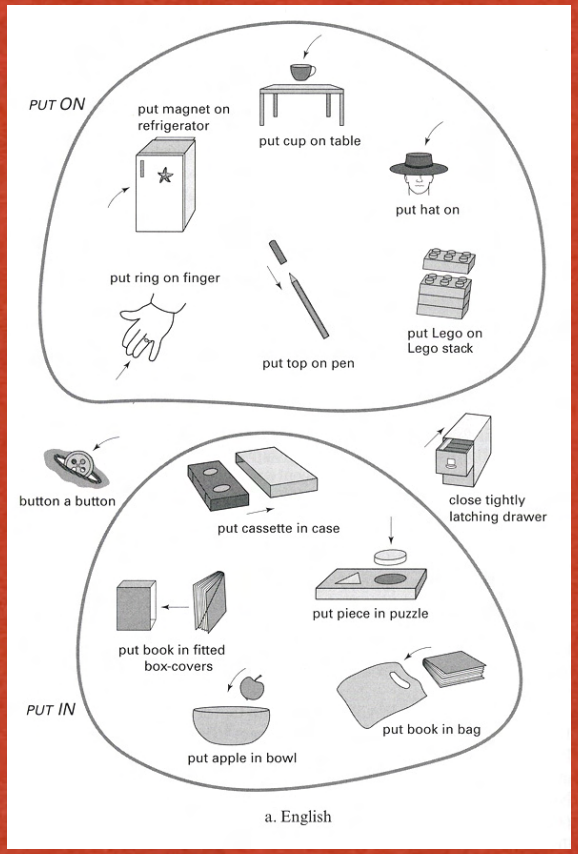
All terms can be lengthened iconically (to:ba, at:u, to:bandu), except bandu (*ba:ndu)

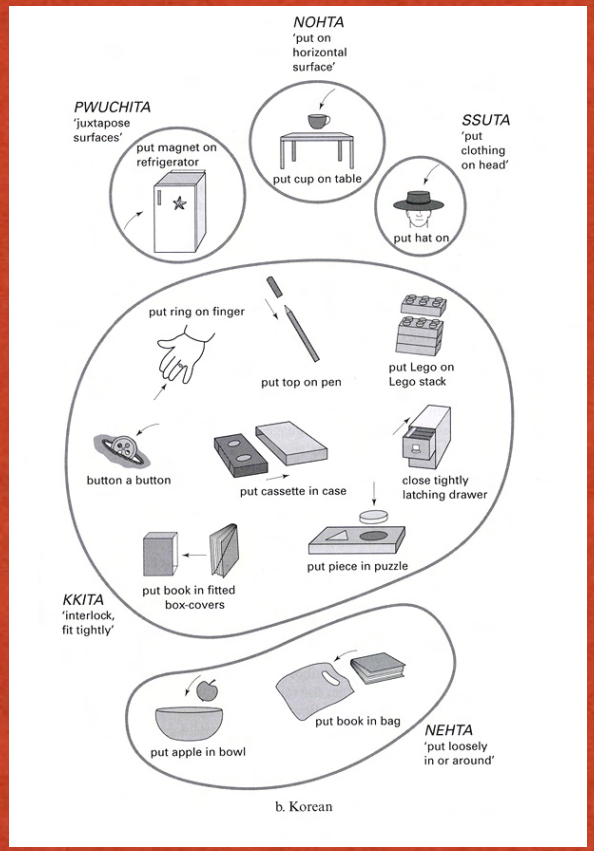
(Bickel et al. in progress)

RESEARCH QUESTION

- Do children's early spatial words reflect non-linguistic concepts directly?
- How do children work out the boundaries of spatial concepts in languages which express these boundaries differently?

ENGLISH VS. KOREAN





(Choi & Bowerman, 1991)

LANGUAGE-SPECIFIC SPATIAL SEMANTIC CATEGORIES?

1. Analysis of longitudinal data (age 1-3 years)

   - Children began to talk about space around 14 months of age, productively around 16-20 months.
   - They used spatial words in a language specific way from the beginning.

2. Elicited production (age 2;0, 2;5, 2;6-2;11, 3;0-3;6)
   10 speakers per age group.

(Choi & Bowerman, 1991)

RESULTS

- Language specific differences: Children were more similar to adults of the same language than to children of other languages.

(Choi & Bowerman, 1991)

VERBS OF MOTION IN TYPOLOGICAL PERSPECTIVE

Satellite-framed vs. Verb framed (Talmy)

1. Satellite framed

   The bottle floated out.

2. Verb framed

   La botella salió flotando.

3. Equipollently-framed languages.

MOTION DESCRIPTIONS

- Method: Narrative task (Frog where are you?)
- Subjects: English and Spanish
  - 5 age groups 3, 4, 5, 9, adults (12 subjects per group)

(Slobin, 1997)

ENGLISH VS. SPANISH VERBS

buck+, bump+, buzz+, carry+, chase+, climb+, come+, crawl+, creep+, depart+, drop+, dump+, escape+, fall+, float+, fly+, follow +, get+, go+, head+, hide+, hop +, jump+, knock+, land+, leave+, limp+, make fall, move+, plummet, pop+, push+, race+, rush+, run+, slip+, splash+, splat +, sneak+, swim+, swoop+, take +, throw+, tip+, tumble+, walk+, wander+

47

acercarse 'approach', **alcanzar** 'reach', **arrojar** 'throw' , **bajar (se)** 'descend', **caer(se)**'fall',**correr** 'run', **dar-un-empujon** 'push', **dar-un-salto** 'jump', **entrar** 'enter', **escapar (se)** 'escape', **hacer-caer** 'make fall', **huir** 'flee',**ir(se)** 'flee', **llegar** 'arrive', **llevar(se**) 'carry', **marchar(se)** 'go', **meter(se)** 'insert-oneself', **nadar** 'swim', **perseguir** 'chase', **ponerse** 'put-oneself', **regresar** 'return', **sacarse** 'remove-oneself',exit', **salir** 'exit', **salta**r 'jump', **subir(se)** 'ascend', **tirar** 'throw', **traspasar** 'go-over', **venir** 'come', **volar(se)** 'fly', **volver(se)** 'return'

27

(Slobin, 1997)

LOCATIVE ELABORATION

	5 yrs	9 yrs	Adult
English	8	8	0
Spanish	8	42	25

(Slobin, 1997)

RESULTS

1. Huge diversity of satellite framed expressions 47 in English and 27 in Spanish (60 narratives). When counting all the combinations with verb particles English has 123 types

(Slobin, 1997)

RESULTS

2. Distinct rhetorical style between English and Spanish. English speakers devote more narrative attention to the dynamics of movement along a path because of the availability of verbs of motion that trace out detailed paths in relation to GROUND elements. Spanish speakers: more attention to static scene setting

(Slobin, 1997)

RESULTS

3. Increased attention to stage setting has an influence on the syntactic development. Stage setting is background information which is usually presented in subordinate clauses.

(1) *Salió un buho que le tiró al niño.*

'(There) came.out an owl that threw the boy

(Slobin, 1997)

IMPLICATIONAL UNIVERSAL

Narratives in verb-framed languages will tend to devote relatively more attention to scene-setting and relatively less attention to details of paths of motion. In comparison to satellite -framed languages

(Slobin, 1997)

CONCLUSION

"One cannot make claims about the acquisition or use of a grammatical form without situating it typologically, in a network of interactive psycholinguistic factors." (Slobin 1997, p.35)

HOW IS ERGATIVITY ACQUIRED?

Why is this interesting?

- Many explanations of LA assume that children depend on the semantic relation agent to establish the initial grammatical relation of subject.
- Ergative languages distinguish between subjects of transitive and intransitive sentences at some level of morphosyntactic structure.

EXAMPLE: ACQUISITION OF ERGATIVITY

- Morphological ergativity
  - Case marking
  - Agreement
  - Both
  - ==> mostly inconsistent pattern, split-ergativity

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ACQUISITION OF ERGATIVITY

Accusative Pattern

Ergative Pattern

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MORPHOLOGICAL ERGATIVITY

K'iche Maya

(4) a. *X-at-war-ik*
TNS-2sgABS-sleep-SUFF
'You slept'

b. *X-Ø-war-ik* *ri* *achi*
TNS-3ABS-sleep-SUFF CLASS man
'The man slept'

c. *K-at-u-ch'ay-o* *ri* *achi*
TNS-2sgABS-3ERG-hit-SUFF CLASS man
'The man hit you'

d. *K-Ø-a-ch'ay-o* *ri* *achi*
TNS-3ABS-2sgERG-hit-SUFF CLASS man
'You hit the man'

(Larsen, 1988)

HOW IS ERGATIVITY ACQUIRED?

- Difficult to answer:
  - Ergative languages are not a mirror case of accusative languages.
  - Extreme complexity and variation involved in the phenomenon ergativity.

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QUESTION: HOW TO PROCEED?

Step 1: Theoretical assessment of the variable:

How is ergativity expressed? Types of ergativity to be investigated.

Step 2: What is the sample of ergative languages?

Which language shows which feature? (What languages do we have data from?)

Step 3: Choose an appropriate sample of languages.

ACQUISITION OF ERGATIVITY IN 2 LANGUAGES

- K'iche: Mayan language spoken in Guatemala
  - Ergative throughout on the morphological level
  - three sets of subject markers:
    - 2 markers for A (prevocalic and preconsonantal)
    - 1 for S

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K'ICHE MAYA

- Longitudinal corpus of K'iche Mayan acquisition.
- Age of children: Al Tiyan (2;1-2;10, MLU 1.2), Al Chay (2;9-3;4, MLU 1.6), A Carlos (3;1-3;8, MLU 1.8)

(Pye, 1990)

CASE MARKING IN K'ICHE

- 3 sets of subject markers

(2)	Ergative		Absolutive
	Prevocalic	Preconsonantal	
Singular			
1	inw-	in-	in-
2	aw-	a-	at-
3	r-	u:-	0-
Plural			
1	q-	qa-	uj-
2	iw-	i-	ix-
3	k-	ki-	e:-

(Pye, 1990)

RESULTS K'ICHE MAYA

Table 3. Frequency and percentage presence in obligatory contexts of subject markers on K'iche' verbs[4]

	Al Tiya:n				Al Cha:y				A Carlos			
	Ivs		Tvs		Ivs		Tvs		Ivs		Tvs	
Session	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1-3	6	86	9	39	–	–	3	2	19	50	17	71
4-6	3	50	5	11	9	39	10	4	20	67	63	50
7-9	4	31	6	10	5	22	12	6	32	58	128	46
10-12	6	38	19	17	3	7	48	16	17	65	152	54
13-15	4	10	25	19	2	9	51	18	31	70	130	51
16-18	–	–	–	–	14	50	76	33	24	70	149	69
19-21	–	–	–	–	19	59	64	43	23	80	87	71

(PYE 1990)

CHILDREN'S ERRORS

Table 2. Frequency of subject marking errors in K'iche'

	Al Tiya:n		Al Cha:y		A Carlos	
Session	Abs	Erg	Abs	Erg	Abs	Erg
1-3	-	-	-	-	-	-
4-6	-	-	2	1	-	-
7-9	-	-	1	-	-	5
10-12	-	-	2	-	-	1
13-15	1	-	-	-	-	1
16-18			1	1	2	1
19-21			-	-	-	-

- Errors: Abs = S (absolutive marker) --> A; Erg = A (ergative marker)--> S

(Pye, 1990)

CHILDREN'S ERRORS

- Few errors. Pye concludes that the acquisition of ergative in K'iche is relatively error free.
- However: How can we interpret these errors?

SAMPLING ISSUES

- 2 parameters
  - frequency of occurrence in real world
  - temporal density of sampling (size of sample)
- frequency and sampling density influence:
  - probability of capturing at least one occurrence.
  - confidence we can have in the estimate of frequency from a sample
  - estimated age of occurrence

(Tomasello & Stahl, 2004)

SAMPLING ISSUES

- A typical sample includes1 hour every week (alternatives: high density corpora).
- Sampling includes approx. 1-1.5% of the speech a child hears and produces during the sampling period. (probably more, since they talk often much less)
- Role of errors: often very low frequency errors are disregarded. The relation between possibility of using the form and error is important not the overall error (otherwise a bias of the results can be expected).
- To capture the age of emergence very much depends on the frequency of the structure.

(Tomasello & Stahl, 2004)

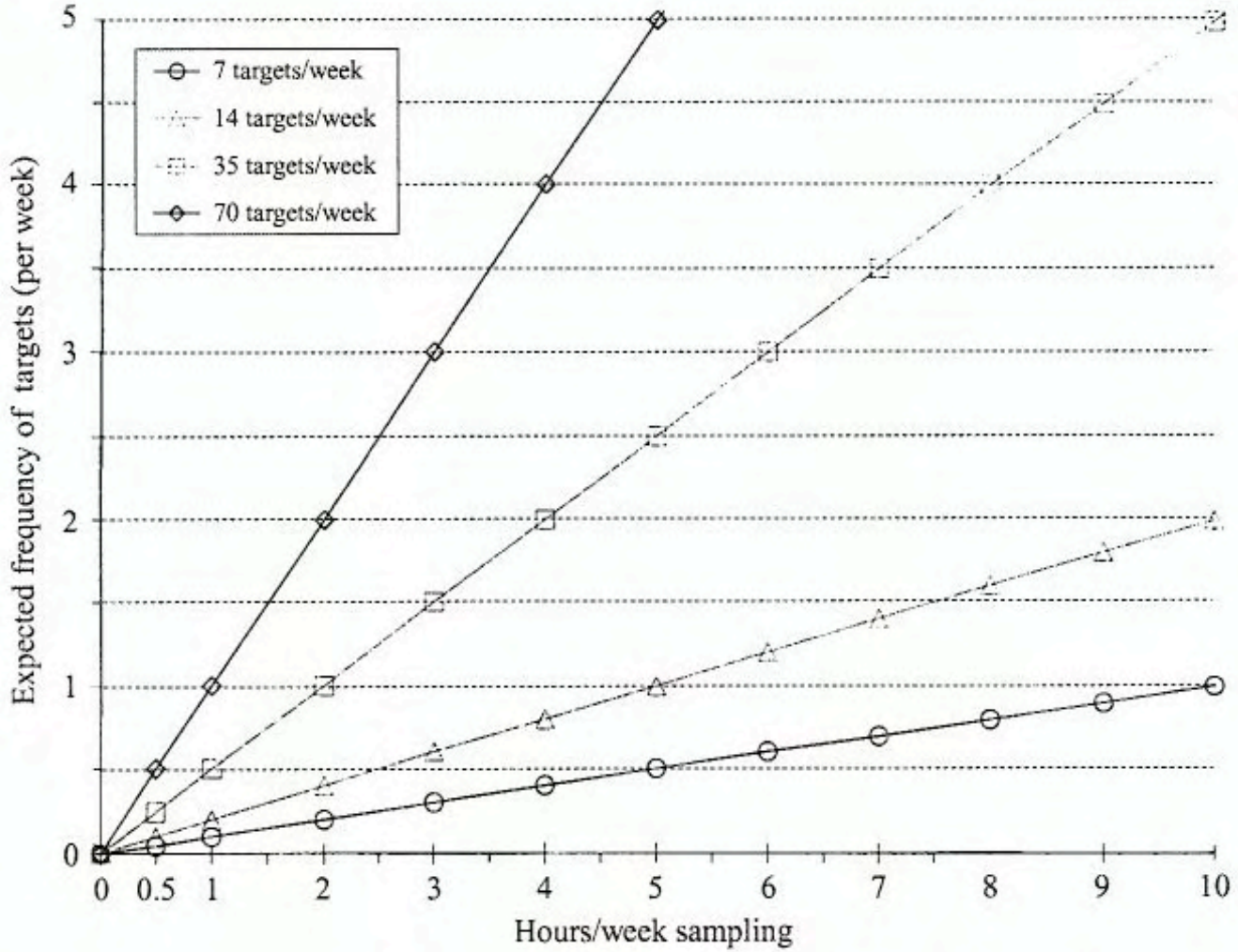

Fig. 1. Expected number of targets captured per week as a function of rate of occurrence and sample density.

(Tomasello & Stahl, 2004)

SAMPLING CHILDREN'S SPONTANEOUS SPEECH

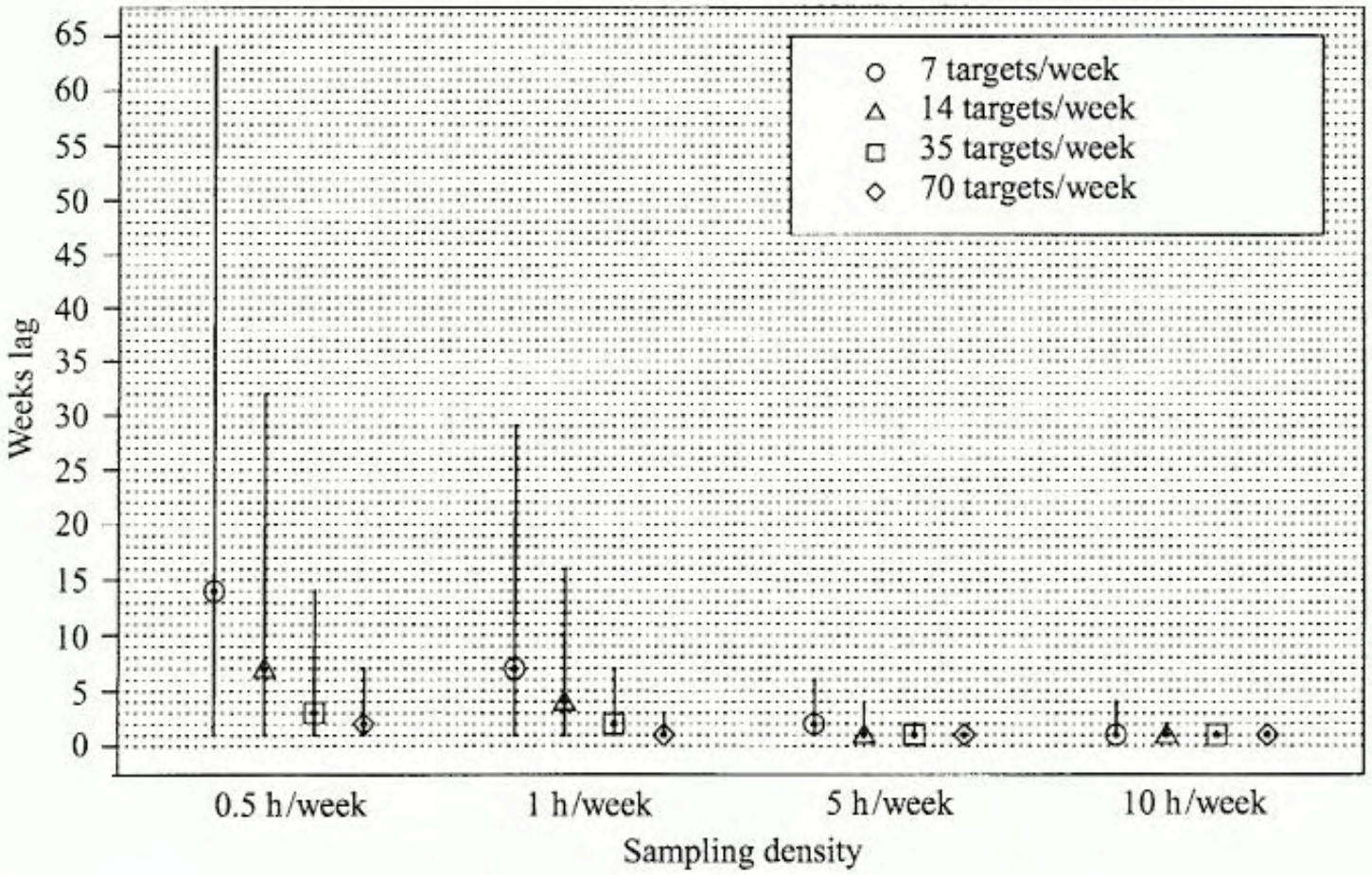

Fig. 7. Lag (delay) in estimated age of emergence (median and 95% confidence intervals) as a function of rate of occurrence and sample density.

(Tomasello & Stahl, 2004)

SAMPLING ISSUES: SUMMARY

- The density of sampling can influence our results a lot.
- We need to estimate the frequency of the targets.
- A frequency estimate is necessary before we compare time of acquisition of two different target structures.

(Tomasello & Stahl, 2004)

SPLIT-ERGATIVITY

(1) Nepali (Indo-European; Himalayas)

a. *ma* *ga-ẽ.*
1sNOM go-1sPST

'I went.'

b. *mai-le* *timro* *ghar* *dekh-ẽ.*
1s-ERG your house.NOM see-1sPST

'I saw your house.'

c. *ma* *timro* *ghar* *dek-chu*
1sNOM your house.NOM see-1sNPST

'I see your house.'

SAMOAN: DATA

- 1 year field work in a traditional village in Samoa.
- Longitudinal study of 6 children (Video-Audio) from different households.
- Age (2;1, 2;1, 2;3, 2;10, 2;11, 3;4 at the beginning of the study).
- Monthly recordings à 3h.
- Transcription by family members.

(Ochs, 1982)

SAMOAN

- morphologically ergative
- syntactically accusative

(Ochs, 1982)

SAMOAN: ERGATIVE CASE MARKING

(1) TRANSITIVE SENTENCE

VSO: *Na fasi e le tama Sina.*
PAST hit ERG ART boy Sina

VOS: *Na fasi Sina e le tama.*
PAST hit Sina ERG ART boy
'The boy hit Sina.'

(2) INTRANSITIVE SENTENCE

VS: *'Olo'o moe le tama.*
PRES.PROG sleep ART boy
'The boy is sleeping.'

Ochs, 1982: 649

SAMOAN: ERGATIVE CASE MARKING

- 2 classes of transitive verbs
  - canonical verbs (e.g. *fasi*, 'hit', *ave* 'take') -> ergative particle
  - middle verbs (verbs of perception, cognition, desire and emotion) (e.g. *ita* 'hate') -> no ergative particle

(Ochs, 1982)

SITUATION	AGENTS EXPRESSED IN TOTAL CORPUS	POSTVERBAL AGENTS EXPRESSED IN TOTAL CORPUS	ERGATIVE CASE-MARKERS IN TOTAL CORPUS	ERGATIVE CASE-MARKERS IN UTTERANCES WITH POSTVERBAL AGENTS
I: Informal, women to female adults and children, family members (150 total clauses)	40.0% (60)	20.0% (30)	4.0% (6)	20.0% (6)
II: Informal, men to female/ male adults and children, family members (60 total clauses)	40.0% (24)	30.0% (18)	5.0% (3)	16.6% (3)
III: Informal, women to female adults, non-family members (120 total clauses)	52.5% (63)	29.2% (35)	13.3% (16)	45.7% (16)
IV: Informal, men to male adults, non-family members (50 total clauses)	40.0% (20)	32.0% (16)	24.0% (12)	75.0% (12)
V: Formal, titled men in discussion portion of village council meetings (56 total clauses)	55.3% (31)	39.3% (22)	28.6% (16)	72.3% (16)

TABLE 1.

Ochs, 1982

SAMOAN: ERGATIVE CASE MARKING

- Social factors relevant for the use of ergative marker
  - men vs. woman
  - social distance: family vs. non-family

(Ochs, 1982)

SAMOAN CHILDREN

- children between 2 and 4 use the ergative extremely rarely

CHILD/AGE AT ONSET OF STUDY	AGENTS EXPRESSED IN TOTAL CORPUS	POSTVERBAL AGENTS EXPRESSED IN TOTAL CORPUS	ERGATIVE CASE-MARKERS IN TOTAL CORPUS	ERGATIVE CASE-MARKERS IN UTTERANCES WITH POSTVERBAL AGENTS
Matu'u/2;1 (76 total clauses)	22.4% (17)	14.5% (11)	0.0% (0)	0.0% (0)
Iakopo/2;1 (50 total clauses)	30.0% (15)	12.0% (6)	0.0% (0)	0.0% (0)
Pesio/2;3 (113 total clauses)	13.3% (15)	4.4% (5)	0.0% (0)	0.0% (0)
Naomi/2;10 (109 total clauses)	15.6% (17)	10.1% (11)	0.9% (1)*	9.1% (1)*
Niulala/2;11 (148 total clauses)	21.6% (32)	13.5% (20)	0.7% (1)	5.0% (1)
Maselino/3;4 (86 total clauses)	36.0% (31)	33.7% (29)	4.6% (4)	13.8% (4)

TABLE 2. (The item marked with an asterisk is a partial repetition of adult speech.)

Ochs, 1982:656

SAMOAN: RESULTS

- Agents occur rarely, if they occur very low ergative rate.
- Location immediately after V is reserved for abolutive constituents (transitive patients and intransitive major arguments). Ergative marker is dispreferred in this position.

(Ochs, 1982)

SAMOAN: WO STRATEGIES IN INTRANSITIVE SENTENCES

Frequency of S directly after V

	SESSION I	SESSION III	SESSION V	SESSION VII	AVERAGE
Matu'u	100.0% (9)	70.0% (7)	84.6% (21)	71.4% (20)	81.5%
Iakopo	100.0% (1)	85.7% (6)	85.7% (18)	85.2% (23)	89.2%
Pesio	96.1% (25)	80.0% (4)	78.9% (30)	86.5% (45)	85.4%
Naomi	100.0% (16)	70.6% (12)	91.3% (22)	75.8% (25)	84.4%
Niulala	90.9% (30)	77.3% (34)	88.9% (64)	65.8% (25)	80.7%

TABLE 4.

Ochs, 1982

SAMOAN: WO STRATEGIES IN TRANSITIVE SENTENCES

	TOTAL	VOA	AVO	OAV	AOV	VAO	OVA	O[VA]
Matu'u	43	53.5% (23)	32.6% (14)	–	–	7.0% (3)	2.3% (1)	4.6% (2)
Iakopo	19	52.6% (10)	42.1% (8)	5.3% (1)	–	–	–	–
Pesio	23	69.5% (16)	17.4% (4)	–	4.4% (1)	8.7% (2)	–	–
Naomi	26	65.4% (17)	23.1% (6)	–	–	11.5% (3)	–	–
Niulala	40	32.5% (13)	32.5% (13)	–	–	22.5% (9)	10.0% (4)	2.5% (1)
TOTALS	151	52.3% (79)	29.8% (45)	.7% (1)	.7% (1)	11.3% (17)	3.3% (5)	1.9% (3)

TABLE 5.

(Ochs, 1982)

SAMOAN: PATIENT AFTER VERB

Matu'u	86.0% (37)
Iakopo	94.7% (18)
Pesio	91.3% (20)
Naomi	88.5% (23)
Niulala	65.0% (26)

TABLE 11.

(Ochs, 1982)

SAMOAN: VO PREFERENCE

Situation	Total	VAO	VOA	AVO	OVA
I	23	21.7% (5)	34.8% (8)	34.7% (8)	8.7% (2)
II	15	26.7% (4)	66.7% (10)	–	6.6% (1)
III	14	28.6% (4)	35.7% (5)	28.6% (4)	7.1% (1)
IV	6	66.7% (4)	16.7% (1)	16.6% (1)	–
V	17	52.9% (9)	17.6% (3)	11.8% (2)	17.6% (3)
totals	75	34.7% (26)	36.0% (27)	20.0% (15)	9.3% (7)

Table 12. Word-order preferences: canonical transitives with three full constituents. (Situations are defined as in Table 1, above.)

	Total utterances	VAO	VOA	AVO	OVA
Men	38	44.7% (17)	36.8% (14)	7.9% (3)	10.5% (4)
Women	37	24.3% (9)	35.1% (13)	32.4% (12)	8.1% (3)

Table 13. Word-order preferences and sex of speaker.

	Total utterances	VAO	VOA	AVO	OVA
speaking in	38	23.7% (9)	47.4% (18)	21.0% (8)	7.9% (3)
speaking out	37	45.9% (17)	24.3% (9)	18.9% (7)	10.8% (4)*

Table 14. Word-order preferences: speech to family vs. non-family. (The asterisk marks a rough figure.)

(Ochs, 1982)

RESULTS SAMOAN

- Ergative is acquired late in Samoan (in contrast to K'iche and Kaluli).
- ECM acquired late, 3-4-year-olds use it in only 5% of obligatory contexts, younger children not at all.
- Use of ergative/absolutive distinctions is not only grammatically constrained, but also sociologically.
- Registral status of some inflections is an important variable in an account of acquisition strategies.

Thank you!