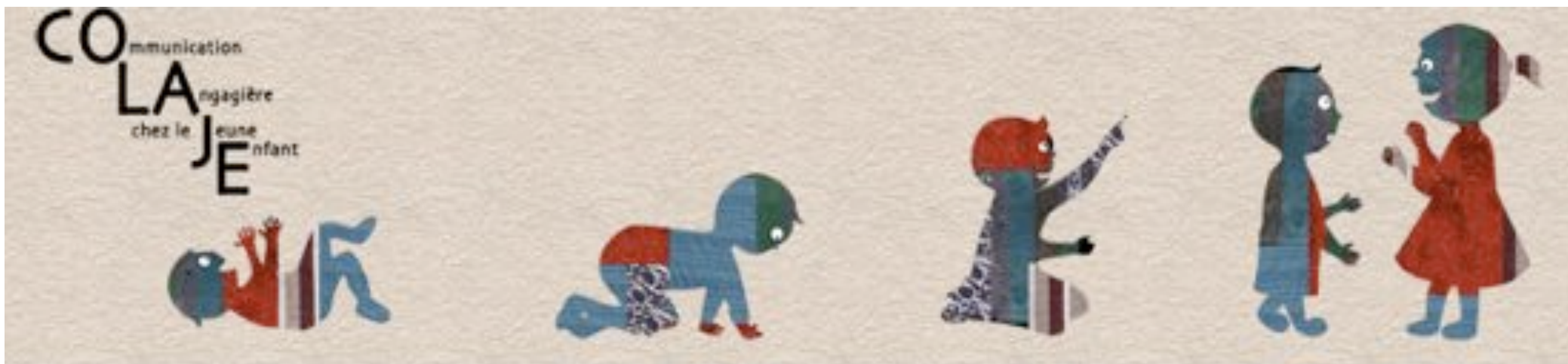




From buds to flowers

The blossoming of Child Language and Multimodal Analyses

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Christophe Parisse, Martine Sekali, Naomi Yamagushi

And special thanks to Brian MacWhinney



Linguistic development

Cognition

Morpho-syntax

Phonology

**Pluridisciplinary
team**

(linguists, psychologists,
speech-therapists,
anthropologists, artists)

Discourse

Prosody

Gesture

Pragmatics



Multi-modal analyses

+

Computer Tools

CORPUS

Longitudinal follow-ups 0 to 7
transcribed, linked, on line

+

Descriptors

Topics

Anaé

Fillers, gender, humor



repairs, possessives

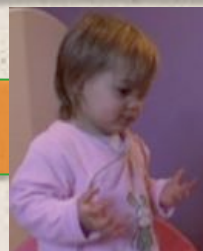
Madeleine

Pointings, fillers, tenses, argumentation,



prepositions, pers ref

Charlotte



Pointing, personal reference

Antoine



Fillers, Nouns/verbs

Théophile

Fillers, tenses, prep,



negation, repairs, verbal constructions

Adrien

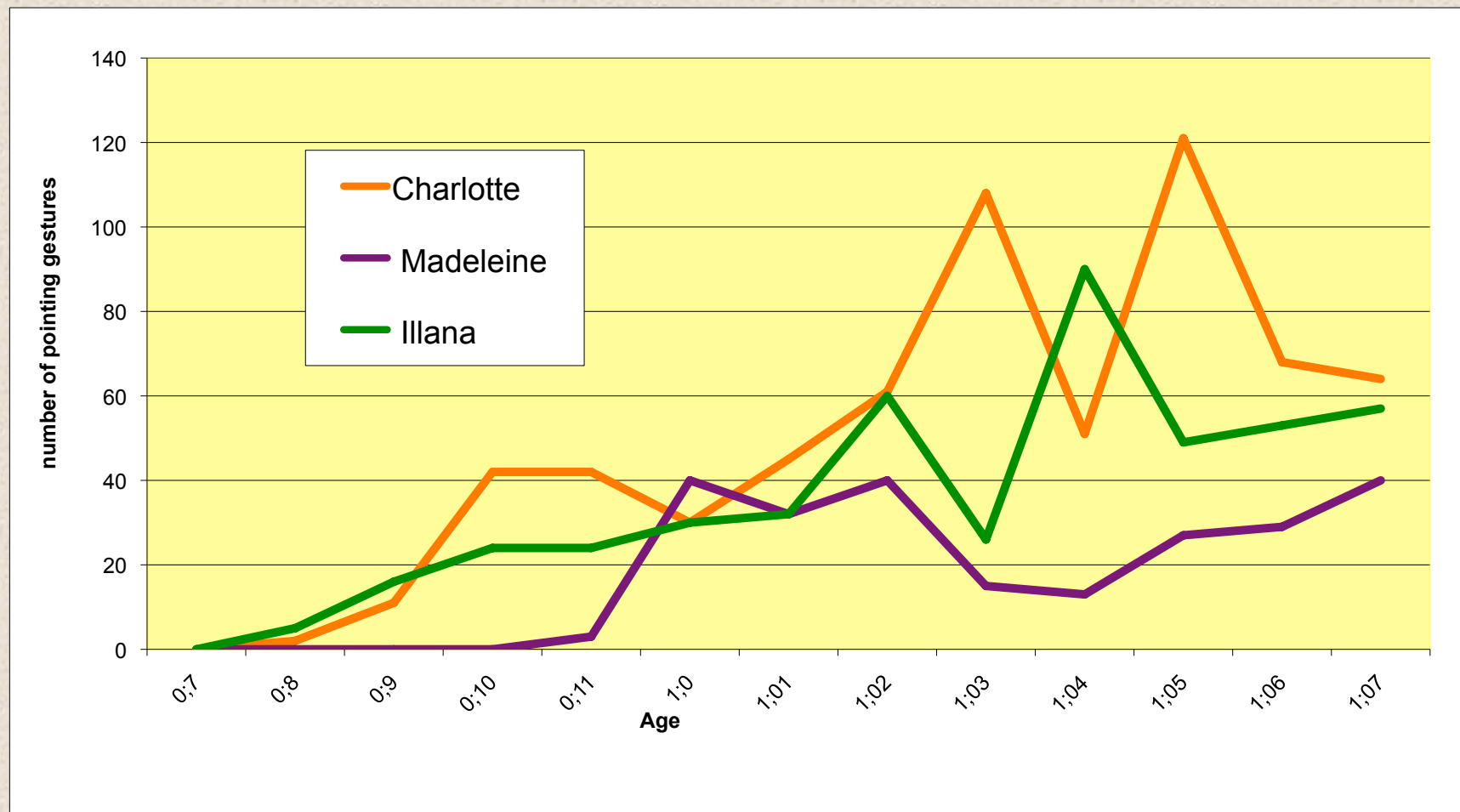
Fillers, development of consonantal inventory



28 0

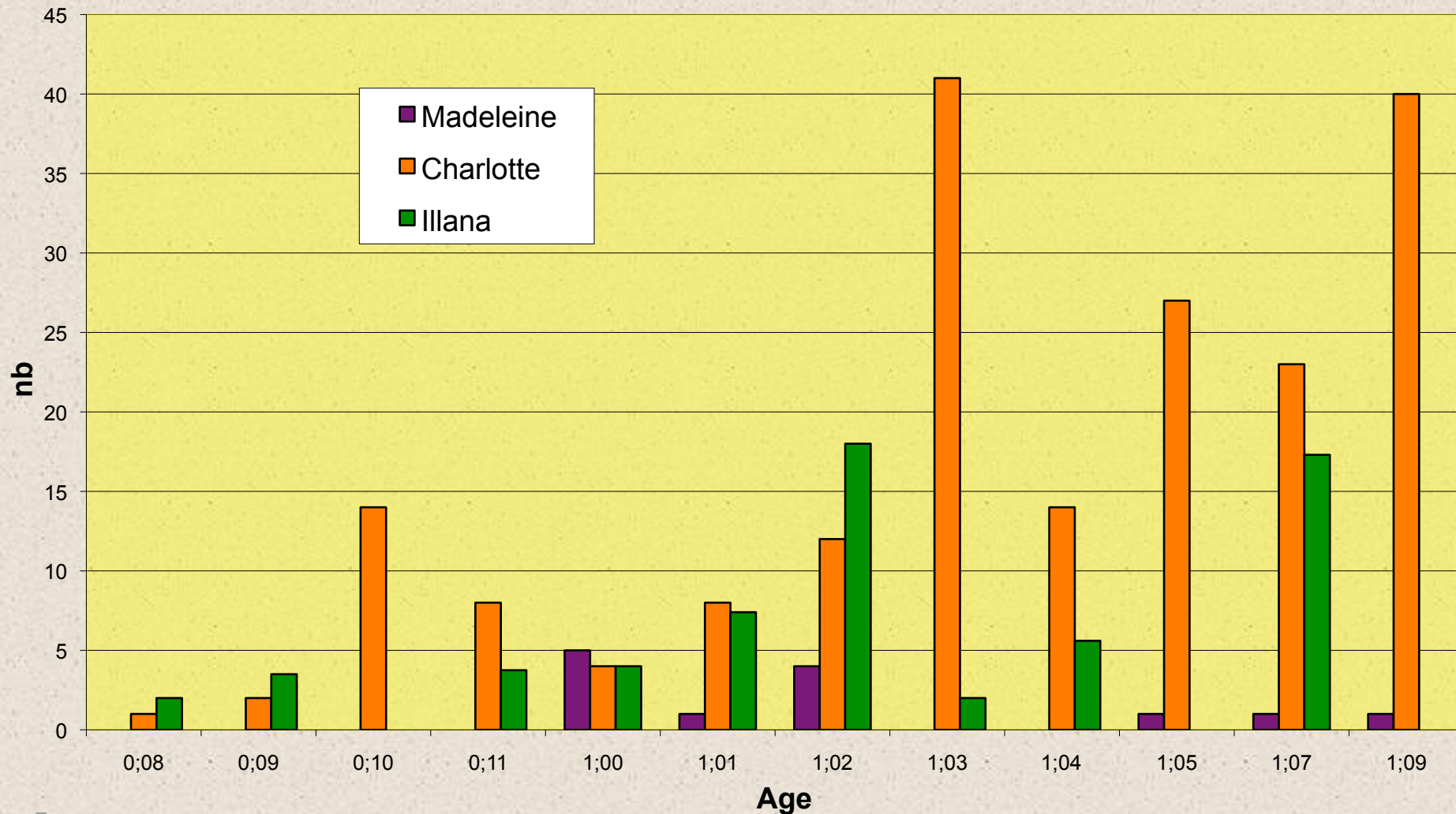
5

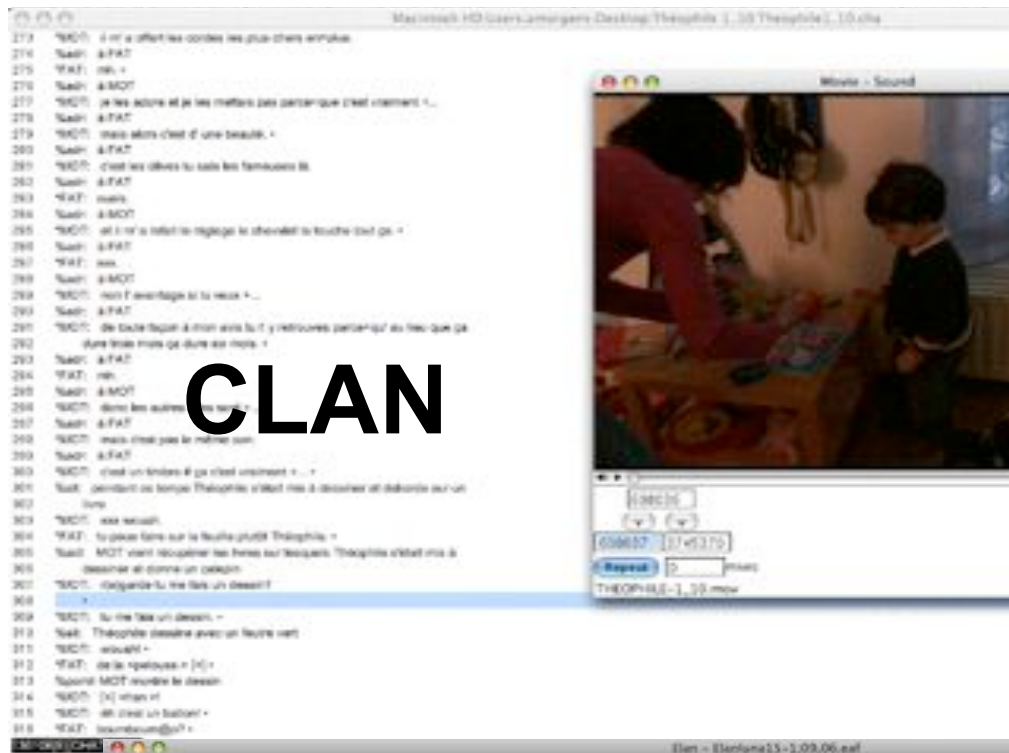
Number of pointing gestures per one hour session



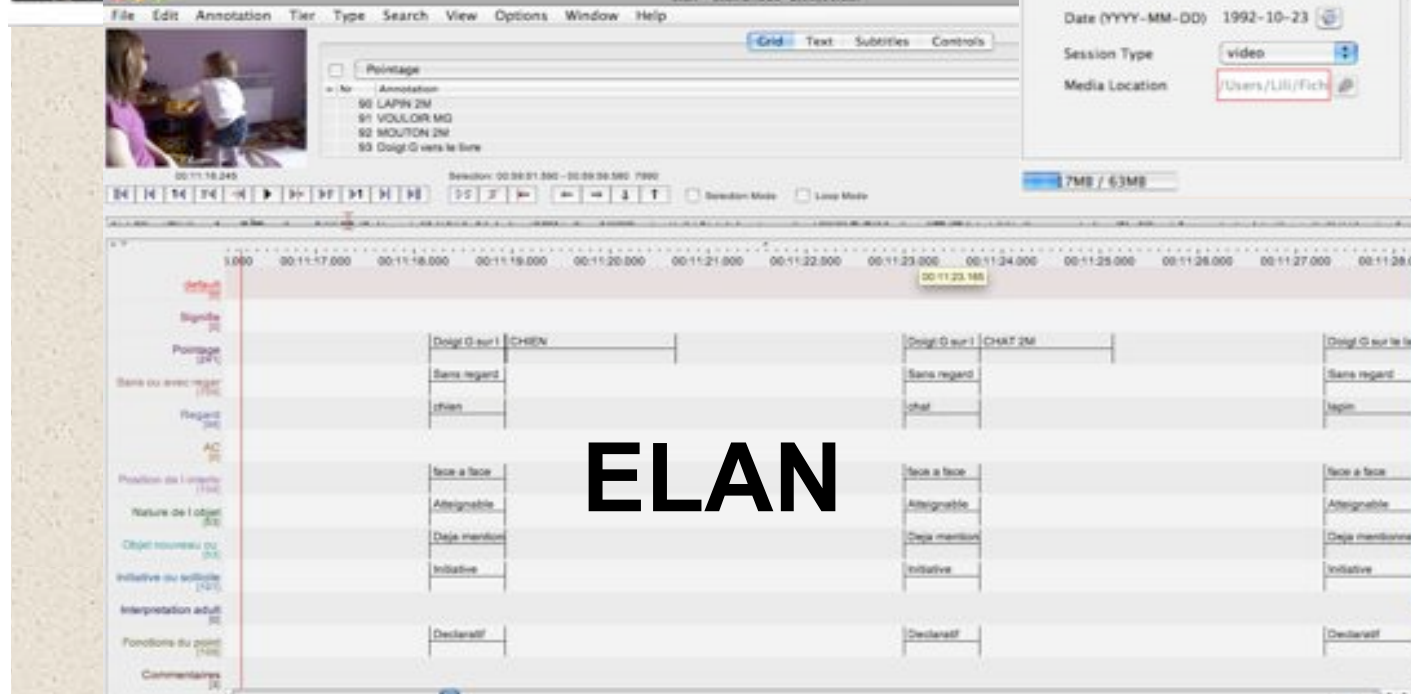


Number of pointing gestures towards an animate referent per one hour session

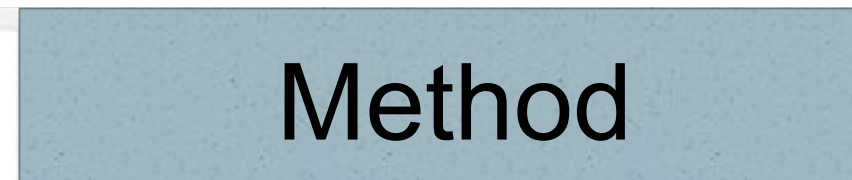




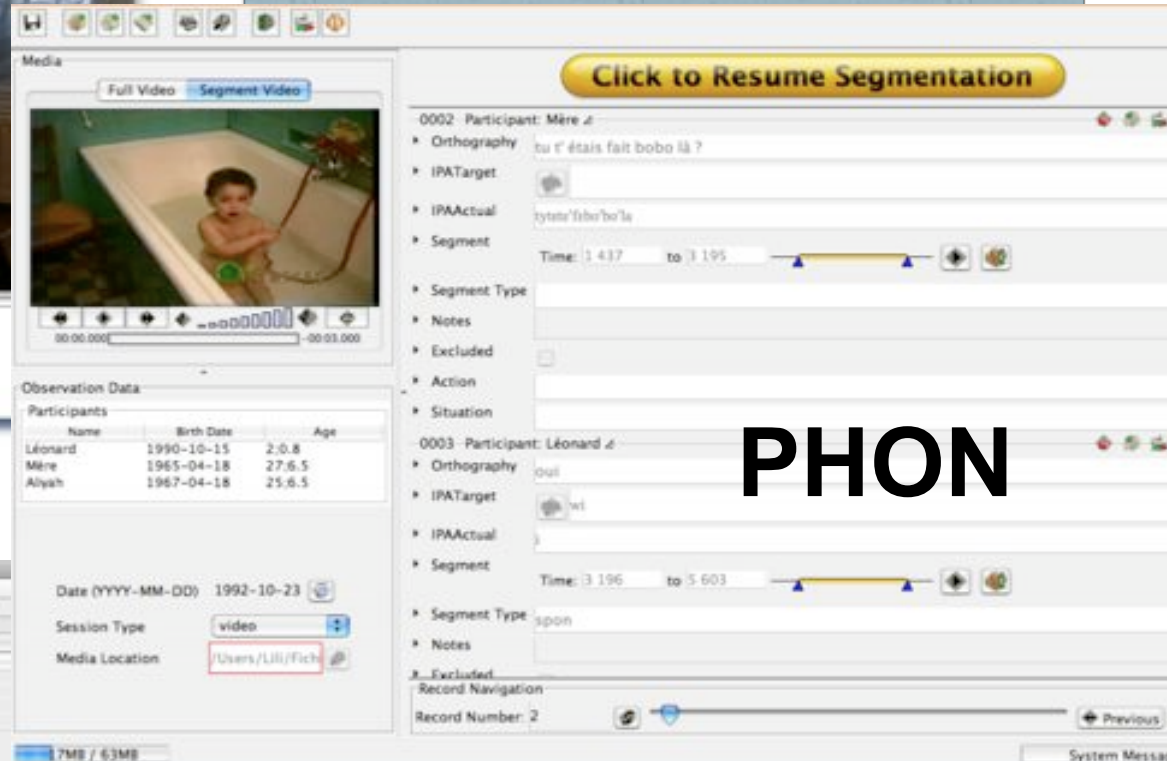
CLAN



ELAN



Method



PHON



PRAAT



EXCEL

Data in PHON



Adrien

Recorded by Naomi Yamagushi
(PhonBank)



Madeleine

Recorded by Martine Sekali
Paris corpus (CHILDES)

OUTLINE

- I. Repairs**
- II. Links to phonological development?**
- III. From phonology to syntax ?**

Children's « errors »

« Barbarisms » (Egger, 1879)

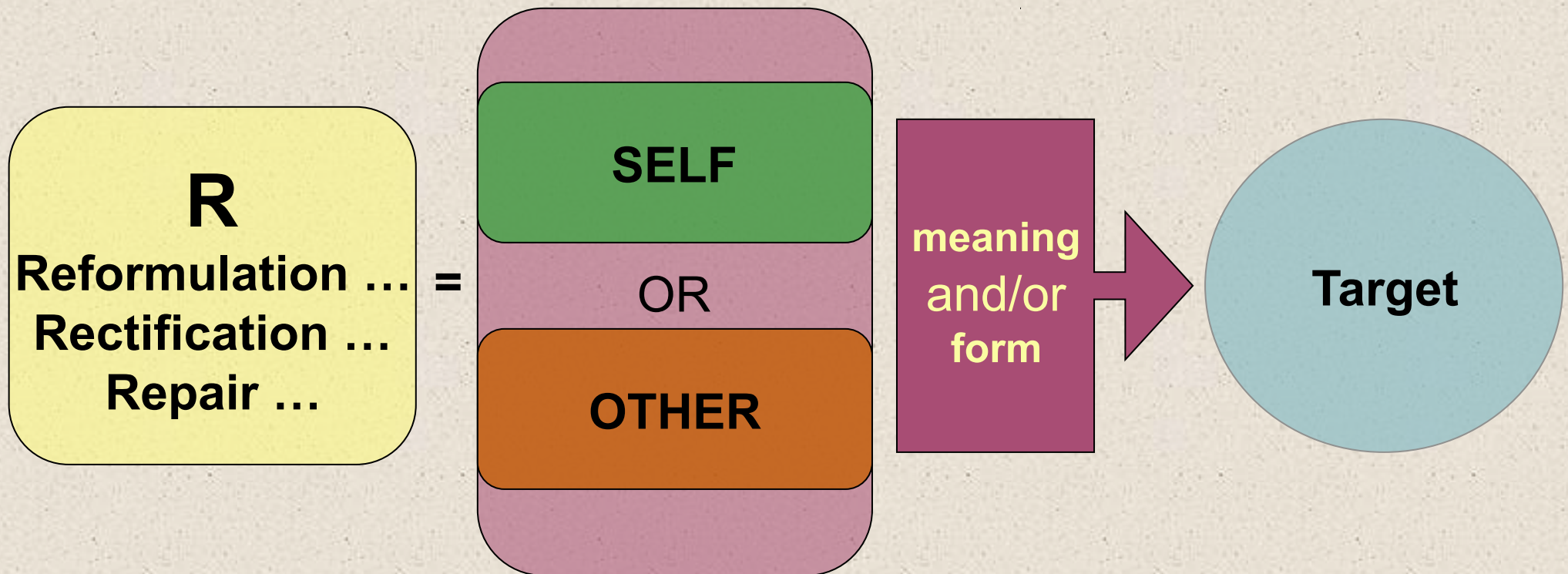
« Incorrect forms » (Buhler 1926)

« Emergent categories » (Clark 2001)

« Systematic transitory patterns » (Cohen 1924)

I. Repairs

Attempt at a definition



Example of a repair sequence (1;9)



Why investigate Repair sequences?

Retracing the acquisition
of linguistic and interactional rules

(Clark 1993; Clark & Chouinard 2000,
Chouinard & Clark 2003; Forrester 2008)

Understanding
what the child takes into account

(Morgenstern, Leroy, Caët, in press)

Understanding
the parents' representations of
their child's linguistic, discursive
and cognitive abilities





Data, coding and quantitative analyses

From Other to Self repairs

The linguistic levels involved
in repair sequences

Three longitudinal corpora

Théophile
0;7 to 5;00



Madeleine
0;10 to 5;00



Anaé
0;3 to 4;00



Different landmarks

Child as landmark



Adult as landmark
18

Miam miam



Théophile

C'est bon



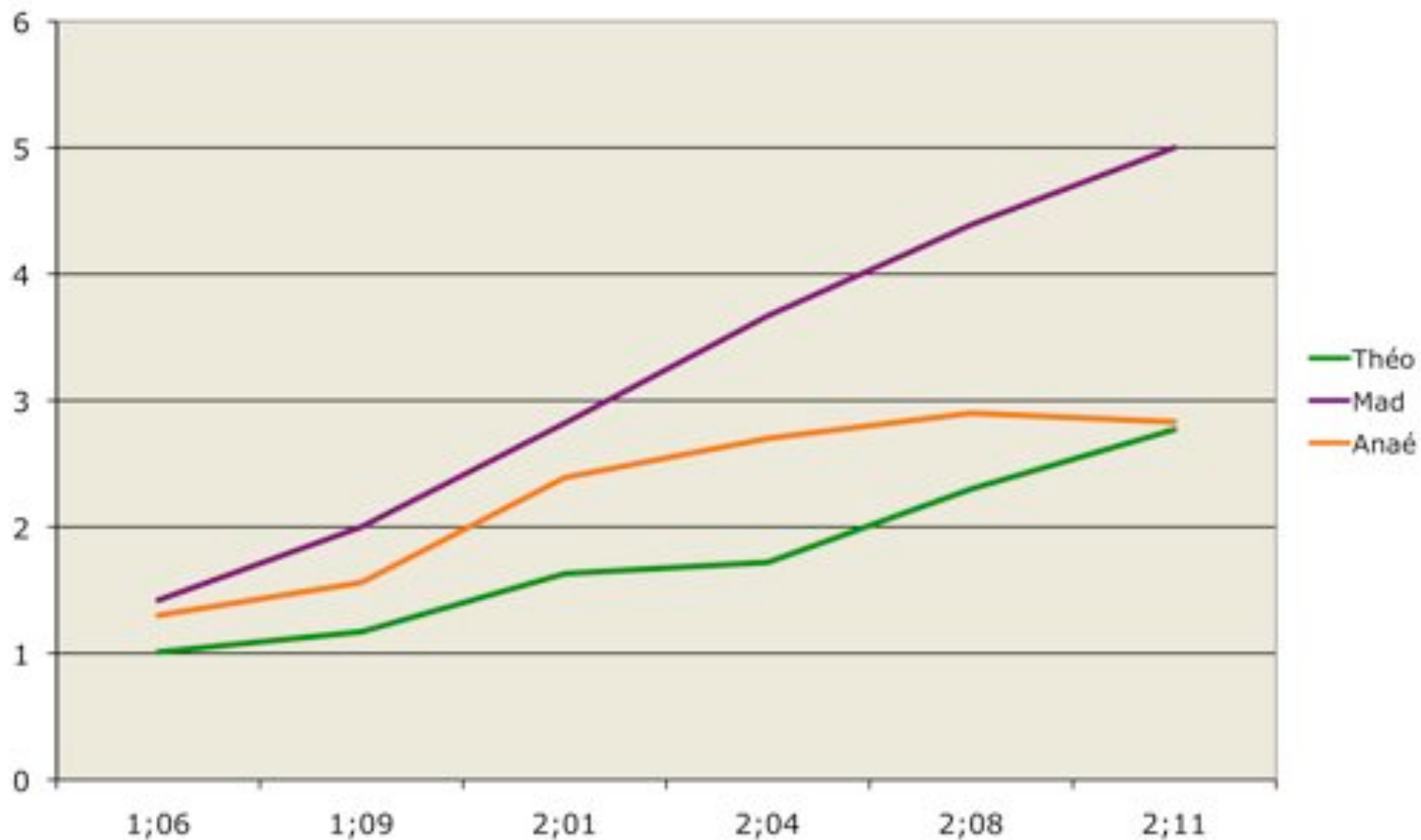
Anaé

C'est délicieux

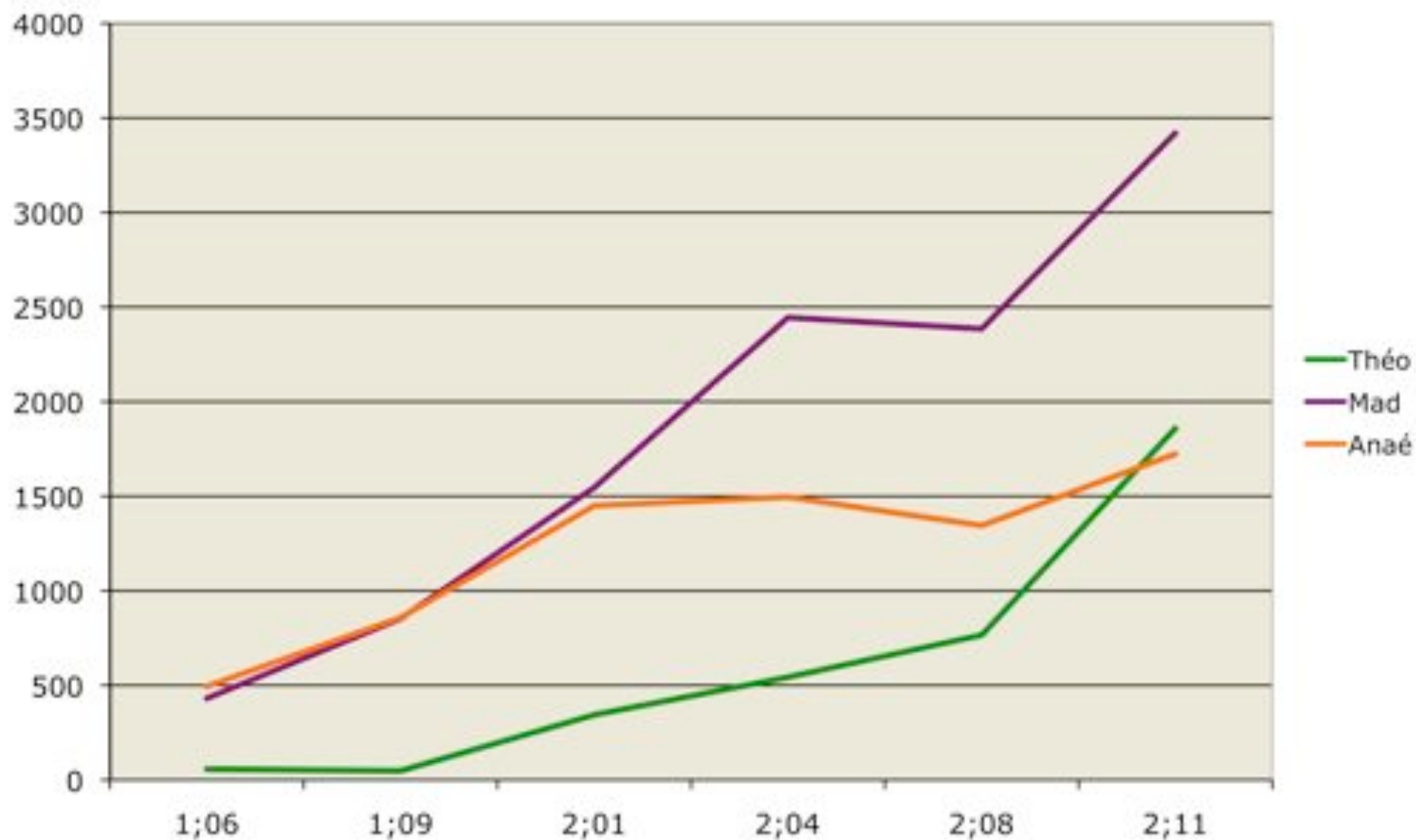


Madeleine

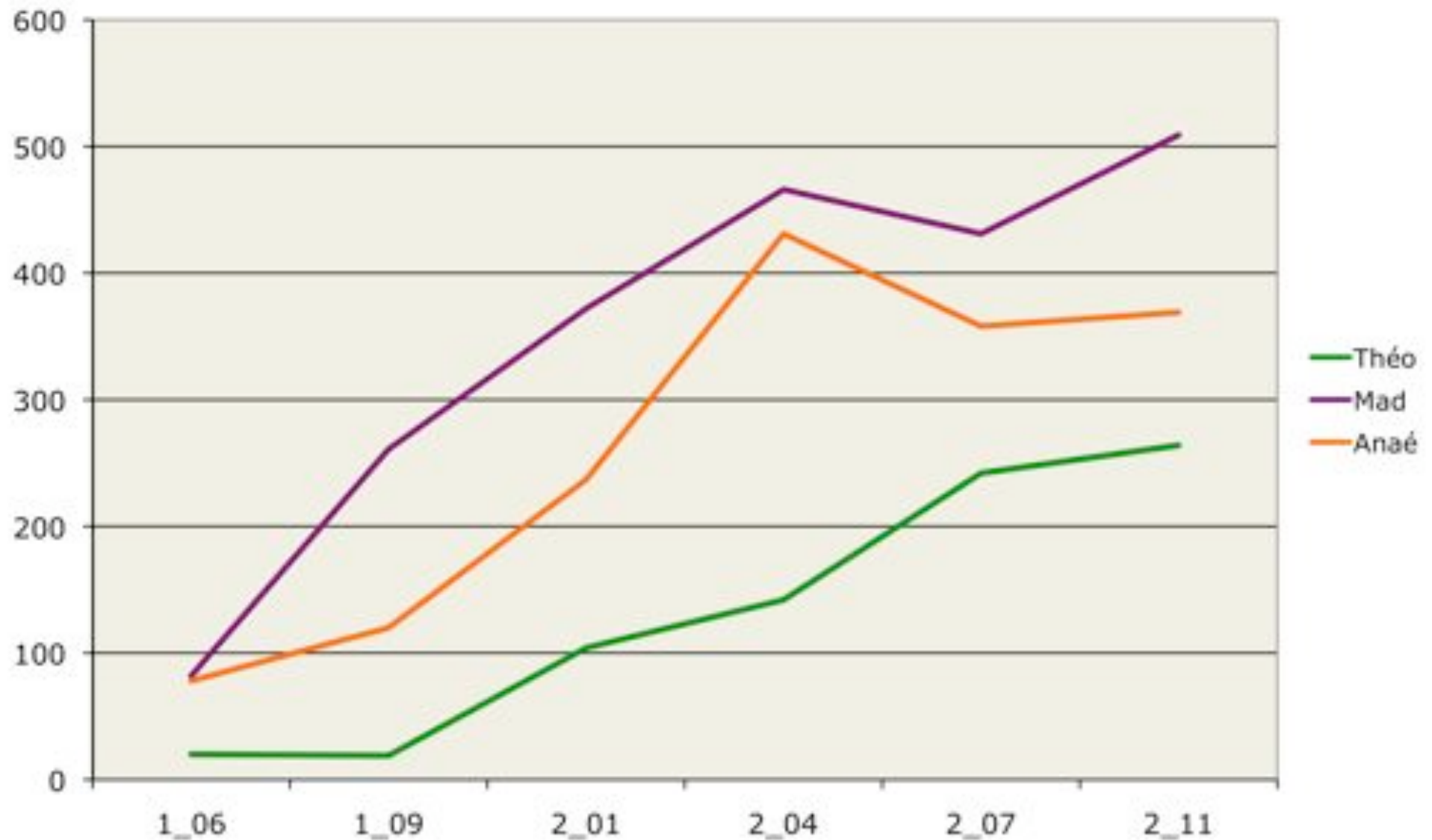
Mean Length of Utterance according to age



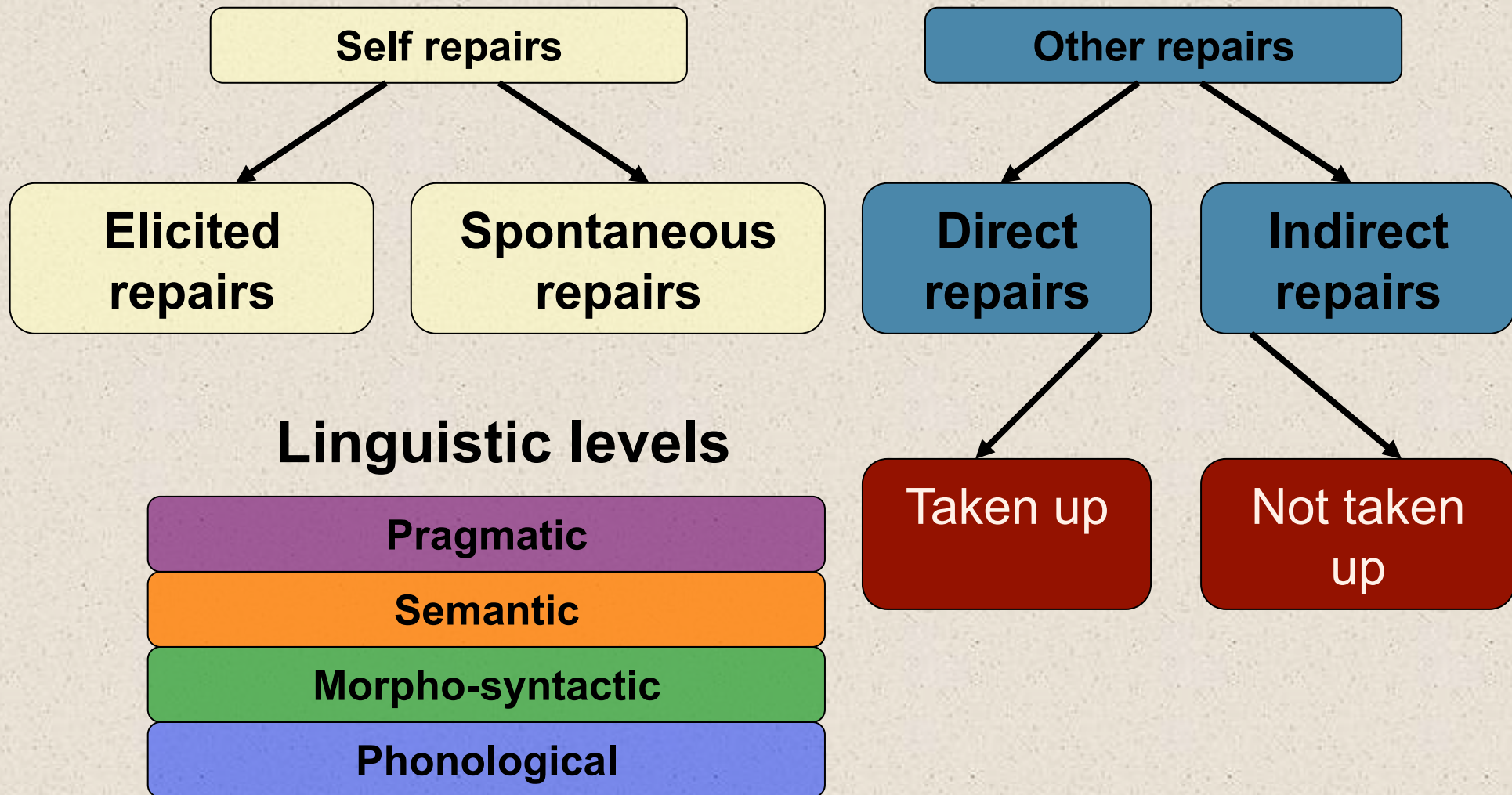
Total number of words (tokens)



Number of different words (types)



Coding





Examples

Madeleine 1;09 :

*CHI: un aut(re), un balai

another broom

*MOT: ça c'est une pelle

that's a spade

**%rep: direct other-repair at the lexical level, taken up by the child
(D OR L T)**

*CHI: pelle

spade

Madeleine 1;09 :

*CHI: (v)eux Chachance !

want Mump

*MOT: comment ?

pardon ?

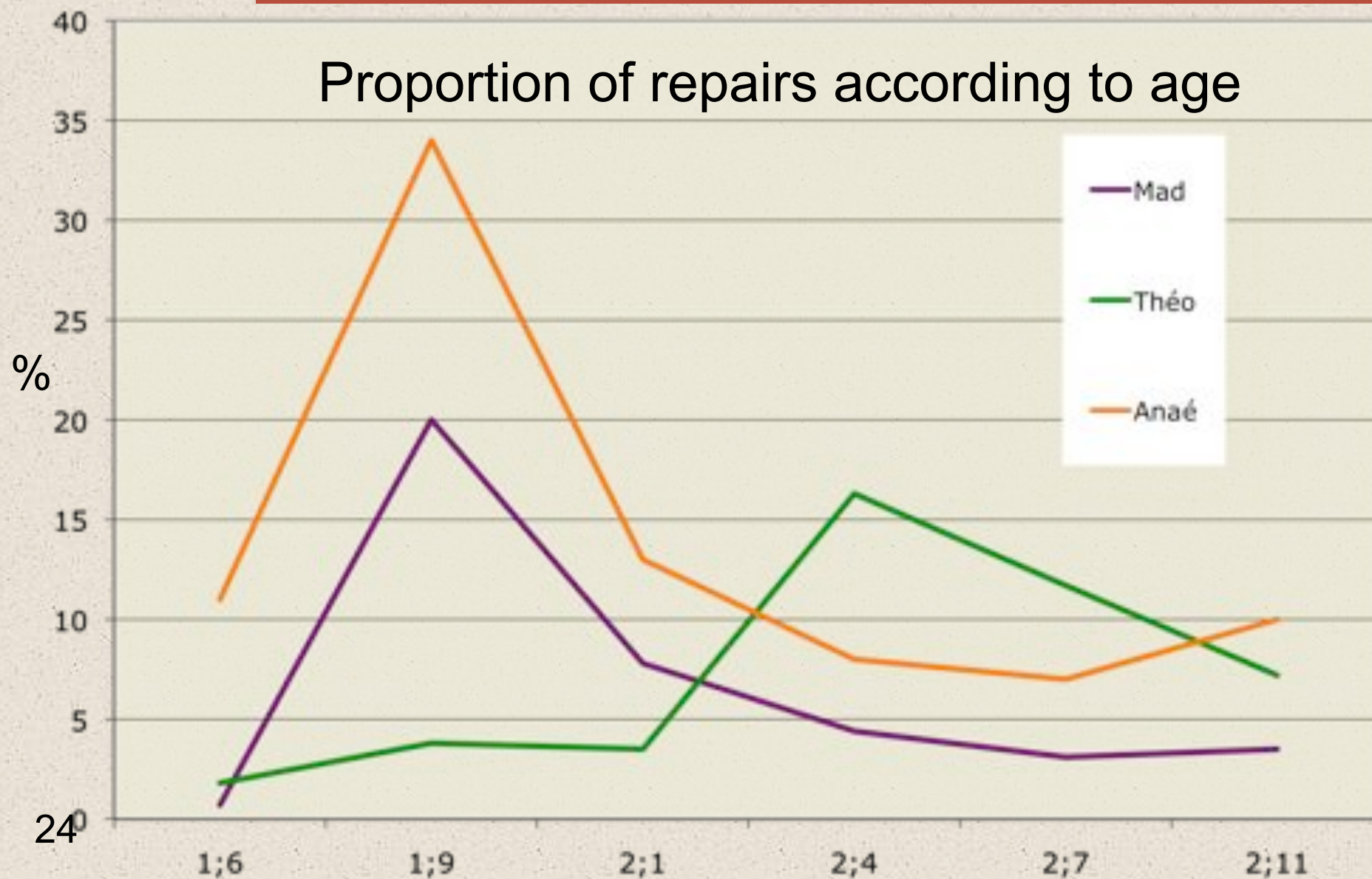
*CHI: elle est là Achance .

Emp is here

**%rep: elicited self-repair involving phonology and morphosyntax
(E SR PM)**

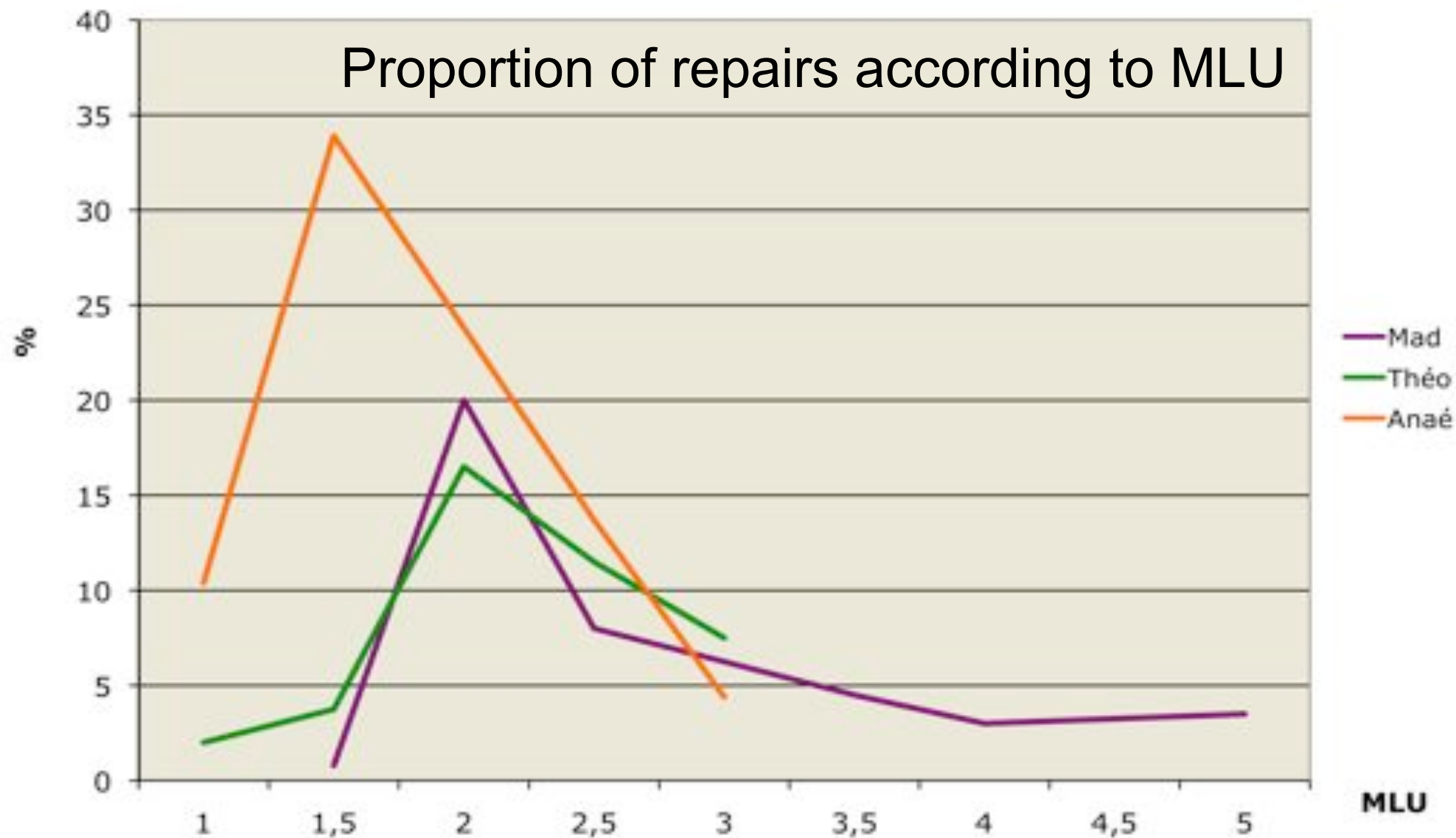
Quantitative analyses (1)

Proportion of repairs according to age



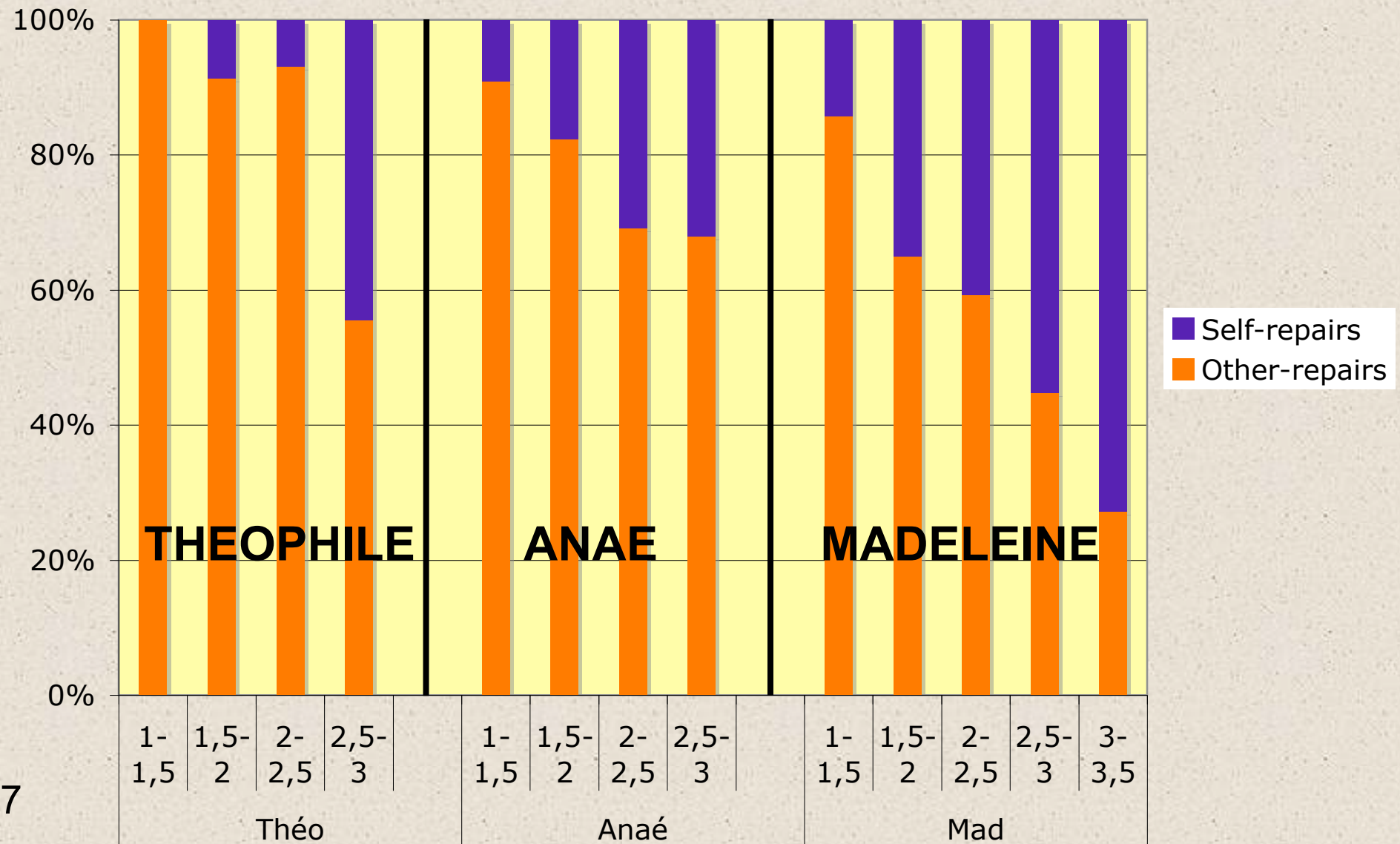
Quantitative analyses (2)

Proportion of repairs according to MLU



From other- to self-repairs

Proportion of other and self repairs in the data





From other to self-repairs

1) Adult targets provided by the child



Madeleine 1;09 :

Indirect other-repair, taken up by the child

*CHI: e nenɛt e sases

*MOT: des lunettes où ça? **where do you see glasses?**

*CHI: e nynɛt e la **the gasses are there.**

Madeleine 2;04:

Direct other-repair, taken up by the child

*MOT: t'es bien dans tes chaussures ? **Do your shoes feel good?**

*CHI: oui. **yes**

*CHI: j'ai (est ? es ?) bien. **They feels good**

*MOT: **bon. je suis bien.** **Well, they feel good.**

*CHI: **je suis bien. They feel good.**





From other to self-repairs

2) Self-repairs elicited

Madeleine 1;09 :

Elicitation of self-repair with negation

*MOT: Et celui-là il est...and this one is...

*CHI: ++jaune. yellow

*MOT: hum, pas tout à fait. Hem, not exactly

*CHI: 0.

*MOT: orange. orange

*CHI: orange. orange

Madeleine 2;04 :

Sollicitation of self-repair with pronoun

*CHI: c'est pour clocher les cloches. It's to bell the bells.

*MOT: pour quoi ? To what?

*CHI: pour sonner les cloches. To ring the bells.

From other to self-repairs

2) Self-repairs elicited





From other to self-repairs

3) Spontaneous self-repairs

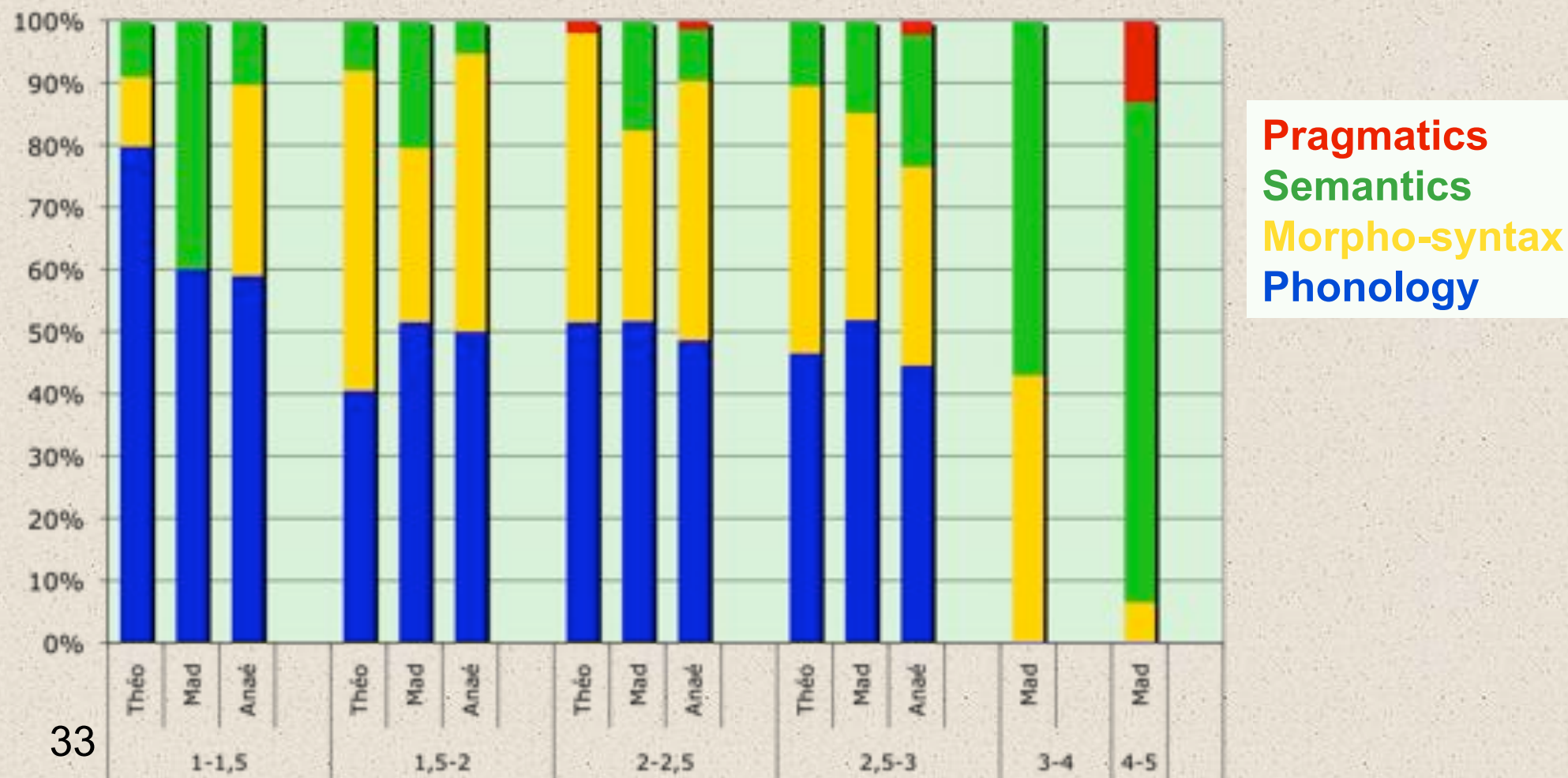
*Madeleine 2;11 :
Spontaneous self-repair*

***CHI:** euh toi <tu vas voir> [//] <tu vas nous
regard(er)> [//] tu vas nous [/] <nous fi(lmer)>
[//] (.) tu vas nous filmer en+train+de jouer .
ehm you < you are gonna see> < you are
gonna watch> you are gonna (.) you are
gonna film us while we play.

Linguistic levels involved in repair sequences

Linguistic levels involved in **other**-repairs FREQUENCY

Insights into the parent's representation of their child's development





Linguistic levels involved in **other**-repairs

EXAMPLES

Phonological level

Madeleine 1;09

- *CHI: e nenɛt
glasses
- *MOT: des lunettes où ça?
glasses? Where?
- *CHI: e nynɛt e la
here glasses

Morpho- syntactic level

Madeleine 2;04

- *CHI: elle s'endorma
she fell asleep
- *MOT: elle s'endormit?
- *CHI: s'enRdormit
fell asleep

Lexical level

Madeleine 1;09

- *CHI: un aut(re), un balai
another broom
- *MOT: ça c'est une pelle
that's a spade
- *CHI: pelle
spade

Pragmatic level

Madeleine 2;04

- *CHI: tu peux apporter de l'eau, là comme ça je bois de l'eau là.
Can you bring water so that I drink water?
- *MOT: ah, comment est-ce qu'on dit? Oh, what do you say?
- *CHI: je voudrais...I would like



Linguistic levels involved in **other**-repairs

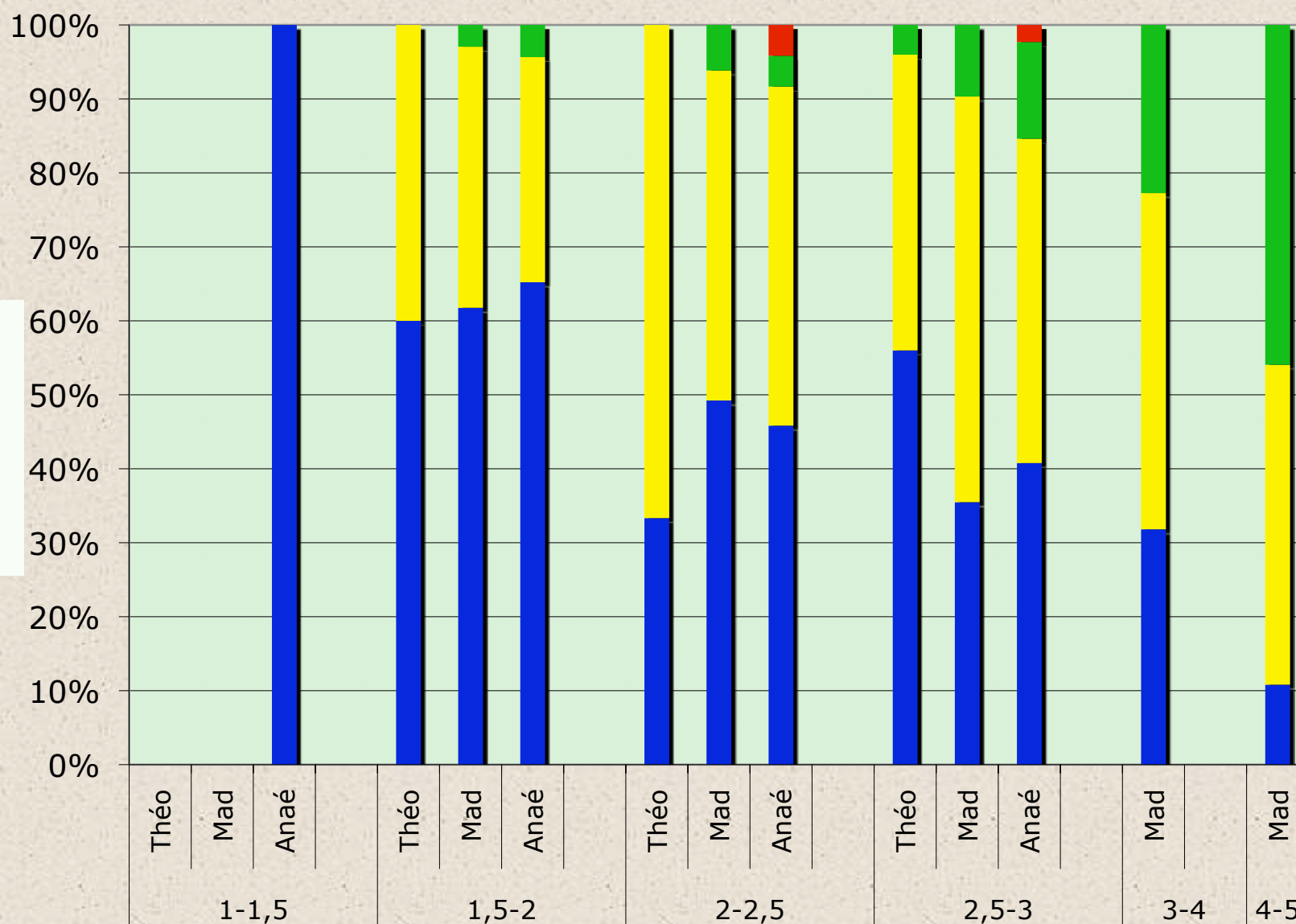
EXAMPLES



Linguistic levels involved in self-repairs

FREQUENCY

Pragmatics
Semantics
Morpho-
syntax
Phonology





Example of a **self**-repair

Je **veux**, euh, je
voudra, hum, je
voudrais une glace
maman.

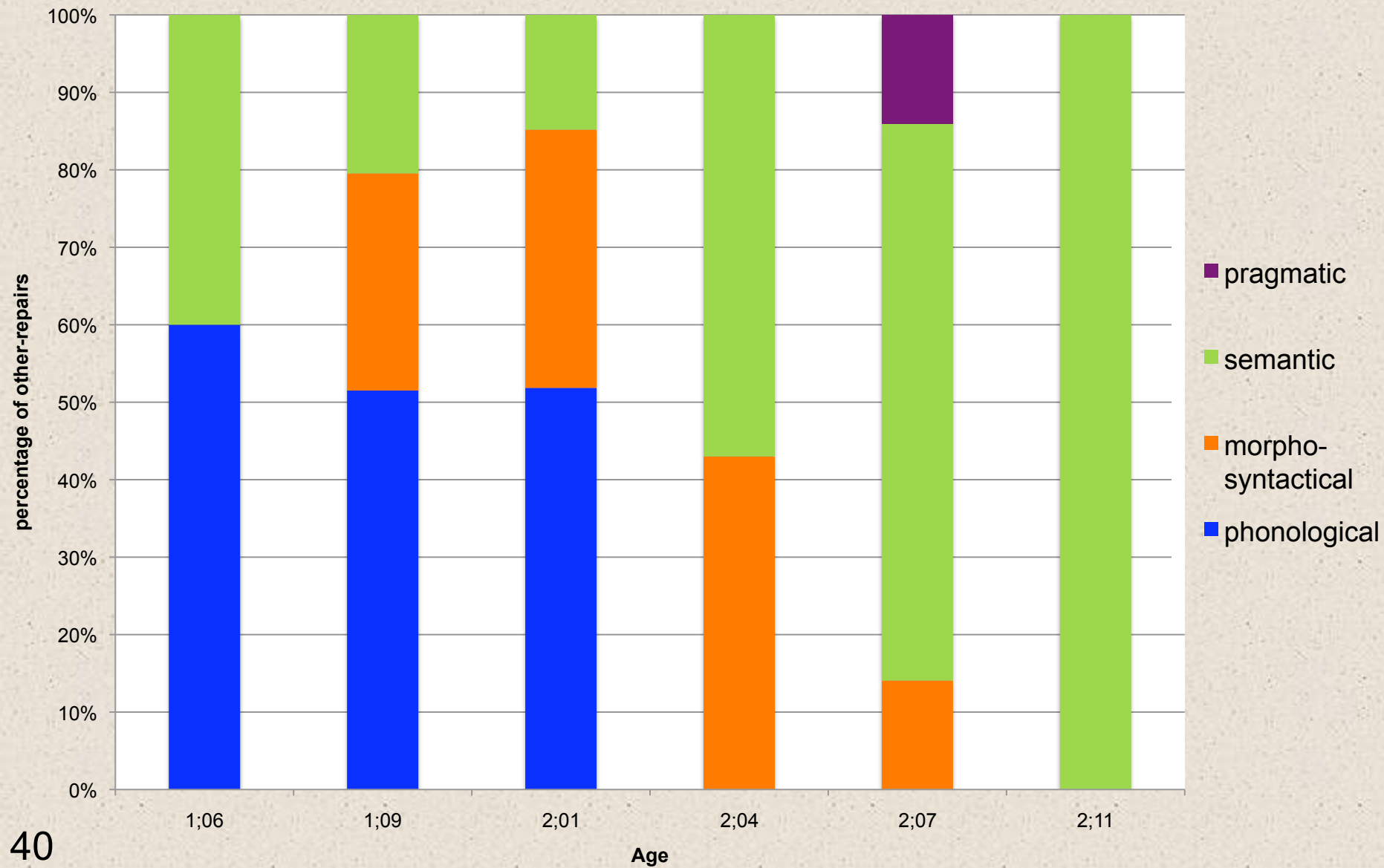
I **want**, hem, I **will**, I
would like an ice-
cream mum.



Conclusions of this study



II. Links to phonological development?





Naomi Yamagushi
PhD student

Intense user of PHON

Paris-
Session Corpus_Madeleine.MADELEINE-13-2_
01_02

Inventory

Result All
format

Result	Coun
b ↔ b	51
l ↔ Ø	9
ʃ ↔ ʃ	36
t ↔ t	135
t ↔ s	1
ʁ ↔ r	2
t ↔ Ø	2
n ↔ l	4
l ↔ l	272
n ↔ n	46
t ↔ k	2
v ↔ Ø	2
j ↔ ʒ	1
d ↔ k	1

Result Listing

Record #	Result format	Result
----------	---------------	--------

924	IPA Target ↔ IPA Actual	m ↔ m
-----	-------------------------	-------

Tier data:

Heather, Joe, Paula, Mits, Laetitia...

g ↔ g	17
m ↔ m	1
z ↔ z	17
s ↔ Ø	3
m ↔ m	269
m ↔ l	1
u ↔ u	06
ʁ ↔ ʁ	47
ʒ ↔ ʒ	31
p ↔ p	157
g ↔ Ø	3
ʃ ↔ s	6
c ↔ s	84
k ↔ k	86
v ↔ v	127
s ↔ s	154
ʒ ↔ z	4
p ↔ Ø	7
w ↔ w	57

Playing around with

IPA Actual	[ma] [maleʁit] [ɛ] [ma] [done]
------------	--------------------------------

924	IPA Target ↔ IPA Actual	g ↔ Ø
-----	-------------------------	-------



Tier data:

Orthography

IPA Target

IPA Actual

[{ Ma<rguerite> (/) }] [Marguerite] [elle] [m'a] [donné .]

[maʁgəʁit] [maʁgəʁit] [ɛl] [ma] [done]

[ma] [maʁgəʁit] [ma] [done]

ʁ ↔ Ø

[{ Ma<rguerite> (/) }] [Marguerite] [elle] [m'a] [donné .]

[maʁgəʁit] [maʁgəʁit] [ɛl] [ma] [done]

[ma] [maleʁit] [ɛ] [ma] [done]



Phonology

Don't present vowel inventories to phonologists!

Some vowels at 1;09

ã : 102/125

ĩ : 40/46

œ : 52/55

y : 53/57

ø : 15/19

Consonantal inventory, singleton + cluster, ONSET

	p	b	t	d	k	g	f	v	s	z	ʃ	ʒ	m	n	ɲ	l	ʁ	j	w
Mad 1;06	ok	ok	(1) ok	ok	ok	? (1)		e/c	ok(?)		ok(?)		ok			ok	e/ c(1)		ok(1)
Mad 1;09	ok (pv)	ok	ok (sg)	ok (sg)	ok	e/c	ok (pv)	ok (pv)	ok (pv)?	e/c?	e/c?	e/c?	ok (pv)	ok (pv)		ok (sg)	e/c (50%)	ok	
Mad 2;01	ok	ok	ok (pv)	ok (scg)	ok	ok (pv)	ok	ok	ok ?	ok ?	ok (pv)	?	ok	ok		ok (scg)	e/c	ok	ok
Mad 2;04	ok	ok	ok	ok (scg)	ok	ok	ok	ok (pv)	ok ?	ok ?	e/c ?	?	ok (pv)	ok	ok		ok (scg)	ok	ok

Consonantal inventory, singleton + cluster, CODA

	p	b	t	d	k	g	f	v	s	z	ʃ	ʒ	m	n	ɲ	l	ʁ	j	w
Mad 1;06			ok (2)				ok (1)			ok (pv)			1/3			non	non	ok	
Mad 1;09	ok	ok	ok (ppv)	ok (1)	ok (ppv)		ok	1/3	ok (pv)	ok (pv)	e/c	non (v)	ok (ppv)	ok	e/c	e/c	non	ok	
Mad 2;01	ok	ok	ok	e/c	ok	ok (pv)	ok	ok	ok (ppv)	ok	ok (ppv)	ok (pv)	ok	ok (sg)		ok (pv)	e/c	ok	
Mad 2;04	ok	ok	ok (ppv)	ok	ok	ok (2)	ok (ppv)	ok (ppv)	ok (ppv)	ok	ok	ok	ok	ok (psg)		ok (pv)	e/c	ok	

Clusters, ONSET

	Mad 1;06	Mad 1;09	Mad 2;01	Mad 2;04
bl		ok	ok	ok
bʁ			non: b	ok
dl (C+A)		non: l, n		e/c
dʁ			non: d	ok
fl		e/c		ok
fʁ			non: fw	ok
gl				ok (1)
gʁ	ok(1)	e/c (1/2)	ok (1)	ok
kl			ok (2)	ok
kʁ		ok	ok	ok
pl			ok (pv)	ok
pʁ			non: p	ok
sʁ (C+A)				ok
tʁ		non: k, kʁ, t	non: kʁ, ʁ, t	ok
vʁ			e/c	ok
ʒʁ (C+A)				ok

Clusters, CODA

	Mad 1;06	Mad 1;09	Mad 2;01	Mad 2;04
bl		non: b	ok	ok
bʁ			ok	ok (ppv)
dʁ			non: Ø	e/c
fl		non: f	ok	e/c
fʁ				ok (1)
gʁ			ok (pv)	
kʁ		e/c (4/5)	ok	
kl				ok (1)
lp		non: p		
ʁp		non: p	ok	
ʁs		non: s		ok (ppv)
ʁt	non: t		ok	ok
sk			non: k	
st			non: s	
tʁ	non: t	non: t, tə	e/c	e/c
vʁ		non: v, Ø	non: v	ok (1)
pʁ				non: p
ʁd				ok
ʁk				ok
ʁm				ok

3 syllable target (or more) at 2;01

15/26 were not like target

1) Consonnant clusters

lɛskalje ↔ lɛkalje

2) Missing a nasal or a different vowel

pãtalõ ↔ patalõ

3) Omission of one syllable (9/26)

kanape ↔ kape

netwaje ↔ toje

kãguʁu ↔ kuʁu

Cynthia's PLUG-IN

III. From phonology to syntax?

Syntax: Verbal constructions

From incomplete to complete patterns

Verb frame 3

Verbs with three arguments: **DONNER**

Tu donnes **le biberon** **à la poupée** ? / Are you giving the
bottle to the doll?

DONNER

TO GIVE

Madeleine

Adult

Period 1: up to 2;03
Incomplete forms, with phonological
deviations and instability

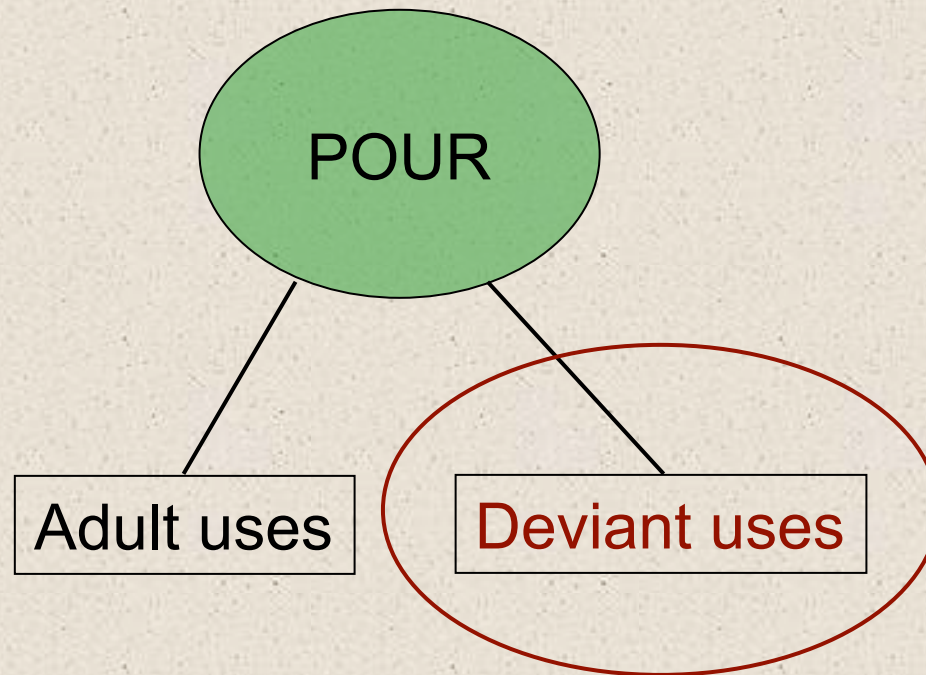
Period 2; after 2;03
Adult pattern S + V + 2 args: **90 %**
Receipient is a pronoun
Object is very often lexical

S + V + 2 arguments: **80%**
Receipient is a pronoun
Object is either lex or pron

Syntax: complex sentences and elliptic packaging

1) elliptic use of POUR

Deviant uses



Creative coherent pattern

Madeleine's uses of POUR

Adult

Madeleine

Pour
+ Noun Phrase

1)

Pour (**prep**) + Noun Phrase

Pour maman
For Mummy

2)

Pour (**comp**) + Noun Phrase

Pour **Madeleine**
For Madeleine

Pour
+ non finite Clause

3)

Pour (**comp**) + non finite Clause

Pour **faire tes courses**
To do the shopping

4)

Pour (**comp**) + finite Clause

Pour **je bois de l'eau**
So I drink water

Pour que
+ finite Clause

5)

Pour que (**comp**) + finite Clause

Pour **que**
je me **salisse** pas
So that I don't get dirty

POUR + Noun Phrase

Ex 1: File "MADELEINE-1_10 line 728.

CHI has just given OBS a card with a picture of a cup of coffee

*OBS: merci / thank you

*CHI: ### pou(r) toi / for you

*OBS: merci Madeleine ha:n # c' est gentil.
 thank you Madeleine, that's nice.

Deviant use

POUR + Noun Phrase

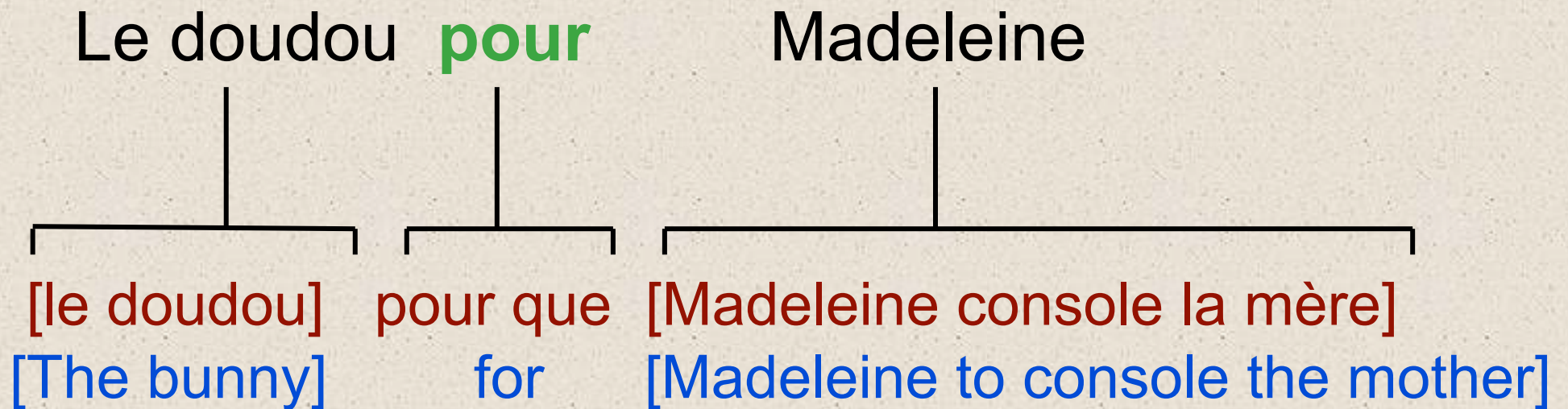
Complementizer ?

Le doudou
The bunny

pour
for

Madeleine
Madeleine

Ex 2: Pour + GN complementizer?





Elliptic packaging

Pour + S / Predicate

Le doudou **pour Madeleine**

- 1) She's looking for a bunny
- 2) The recipient of the bunny
- 3) Her intention to use the bunny to console the mother

Syntax: complex sentences and elliptic packaging

2) elliptic use of PARCE QUE

Deviant uses of PARCE QUE

Example 9 – Mad 2;07

Madeleine enters the house.

Child: **Maman, je veux enlever mon manteau parce que j'ai froid**

(que j'ai mis)

A B
Mummy I want to take off my coat because I'm cold.

I've got a coat on

Non standard uses of PARCE QUE

Ex 10 *** MADELEINE-16-2_04_15.CHA": line 1465.

*MOT: Ca+y+est Madeleine [>] ? Are you done Madeleine?

*CHI: oui [<] . Yes.

*MOT: allez tu r(e)montes ta culotte. Come on pull your panties back up.

*OBS: c'est drôlement bien hein qu(e) tu portes <plus d(e) couches Madeleine> [>] . How great that you're not wearing diapers any more Madeleine.

*CHI: <moi je [/] je remets> [<] ma culotte (1)parc(e)+que j' ai [//]
j' a fait pipi [<] .

I'm pulling up my panties (*which I had pulled down*) because I had a wee

Non standard uses of PARCE QUE

Ex 10 *** MADELEINE-16-2_04_15.CHA": line 1465.

*MOT: Ca+y+est Madeleine [>] ? Are you done Madeleine?

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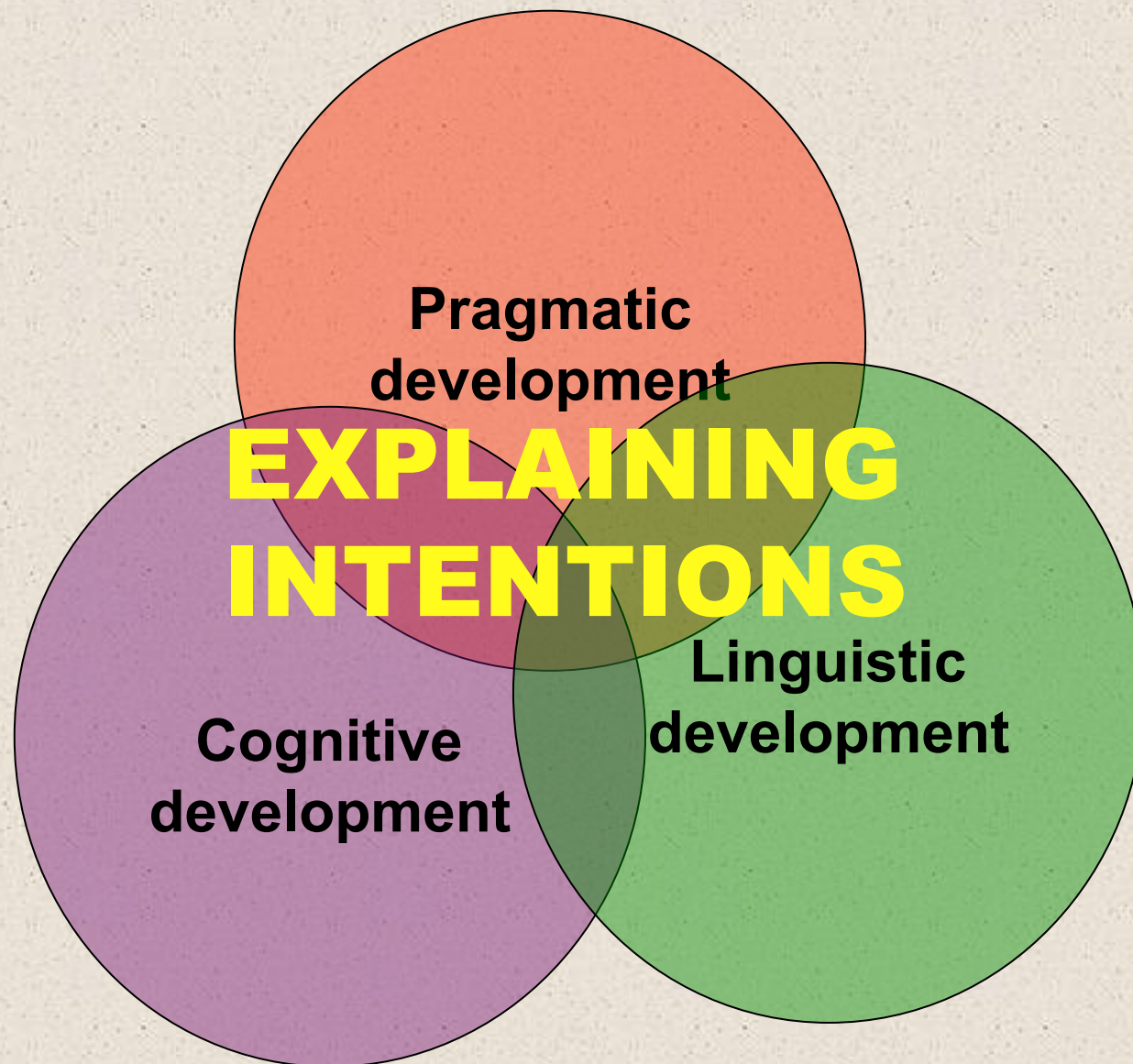
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*OBS: c'est drôlement bien hein qu(e) tu portes <plus d(e) couches Madeleine> [>] . How great that you're not wearing diapers any more Madeleine.

*CHI: <moi je [/] je remets> [<] ma culotte (1)parc(e)+que j' ai [//]
j' a fait pipi [<] .

I'm pulling up my panties (*which I had pulled down*) because I had a wee

From binary to ternary structures



Complex reasoning completed

Ex 18 - *** File Madeleine 3-03.cha": line 1253.

*CHI: yy yy maintenant <je vais> [/] je vais chercher un jeu.
now, I'm gonna, I'm gonna look for a game.

*CHI: (.) j' enlève mes chaussures **parce+que** je vais montrer un
jeu **parce+que** moi je vais monter sur mon lit . I'm taking off my
shoes because I'm gonna show a game because. I'm gonna
climb on my bed.

*CHI: **et quand** on monte sur un lit <i(l) f(aut)> [/] **il faut** euh
enlever les chaussures. and when you climb on a bed, you must,
you must, hem, take off your shoes.

*OBS: oui . yes



CONCLUSION





Thank you

Contact : Aliyah.Morgenstern@gmail.com