



Multimodal interactional competence in the early years

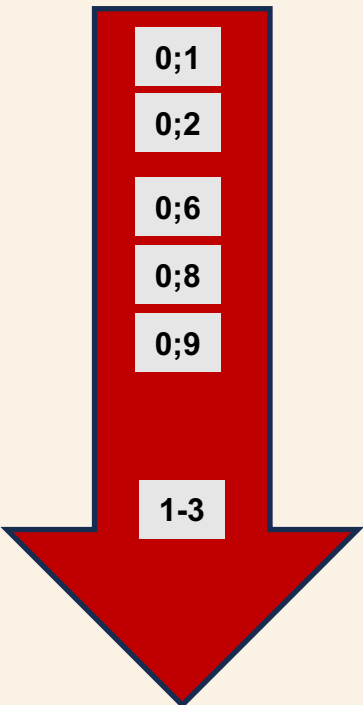
Christophe Parisse, Sophie de Pontonx, Aliyah Morgenstern

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Literature review and theoretical framework

Children's competence in their early years

- Young children start communicating with their parents and their environment at a very early age.
- A variety of communicative competences have been studied in the literature.



0;1

Imitation (Metzloff, 1977)

0;2

Prosodic competence, recognizing voice and language (Mehler et al. 1978)

0;6

Phonological knowledge (Jusczyk 1978)

0;8

First word comprehension (Tincoff & Jusczyk 2012)

0;9

Phonotactic and syntactic regularities (Saffran et al. 1996)

Pointing and gesture (Leung et al. 1981, Butterworth 2003, Dimitrova 2015, Morgenstern, 2022)

Others' intentions (Tomasello 1999)

1-3

Communicative competence (Hymes, 1967)

Conversational competence (Ochs & Schieffelin, 2016)

Etc....



At what age is a competence present and how does it develop?

All the ages indicated in the previous slide correspond to the initial manifestation of a competence (and often for children who learn very quickly).

But for all children the competence will go on developing (sometimes for quite a long time) before reaching a peak level of performance.

This development occurs through everyday experience. None of those competences are « general » from the very start, they will become more general and more abstract with age.

The role of the adult input and of scaffolding

A gradual
co-construction

The environment participates in
the construction

Social interaction
Conversational exchanges

Input – Child addressed languaging



The multimodal nature of language development

We view language development as a **multimodal, situated, interactive socializing process** grounded in everyday experience and reverberating the actions, touch, gestures, facial expressions, voices of the care-givers.

Through constant exposure to adult input in interaction, children's language thus gradually develops into **rich linguistic constructions containing multiple cross-modal elements** subtly used together for communicative functions.

Children have a shared repertoire of gestures and vocal productions. They constantly use the plurisemiotic resources at their disposal and progressively **enrich the complexity of their productions** thanks to the scaffolding and cooperation of adults.

The **wider** the modalities, the **easier** it is to convey meaning and adapt to new or difficult situations.

Our hypotheses

Children's early competences can be found **at all levels and in all** (visual-gestural and audio-vocal) **modalities**.

The interaction between competences and multimodal knowledge **develops gradually with experience**, as does each specific competence.

Young children will have **limited organization and mastery** of the various cognitive and communicative competences and of their coordination.

Older children will be better, but not as efficient as adults.

Data and Method

Longitudinal data from 9 months to 7 years old (ANR CoLaJE)



Family dinners from 3 to 10 years old (ANR DinLang)



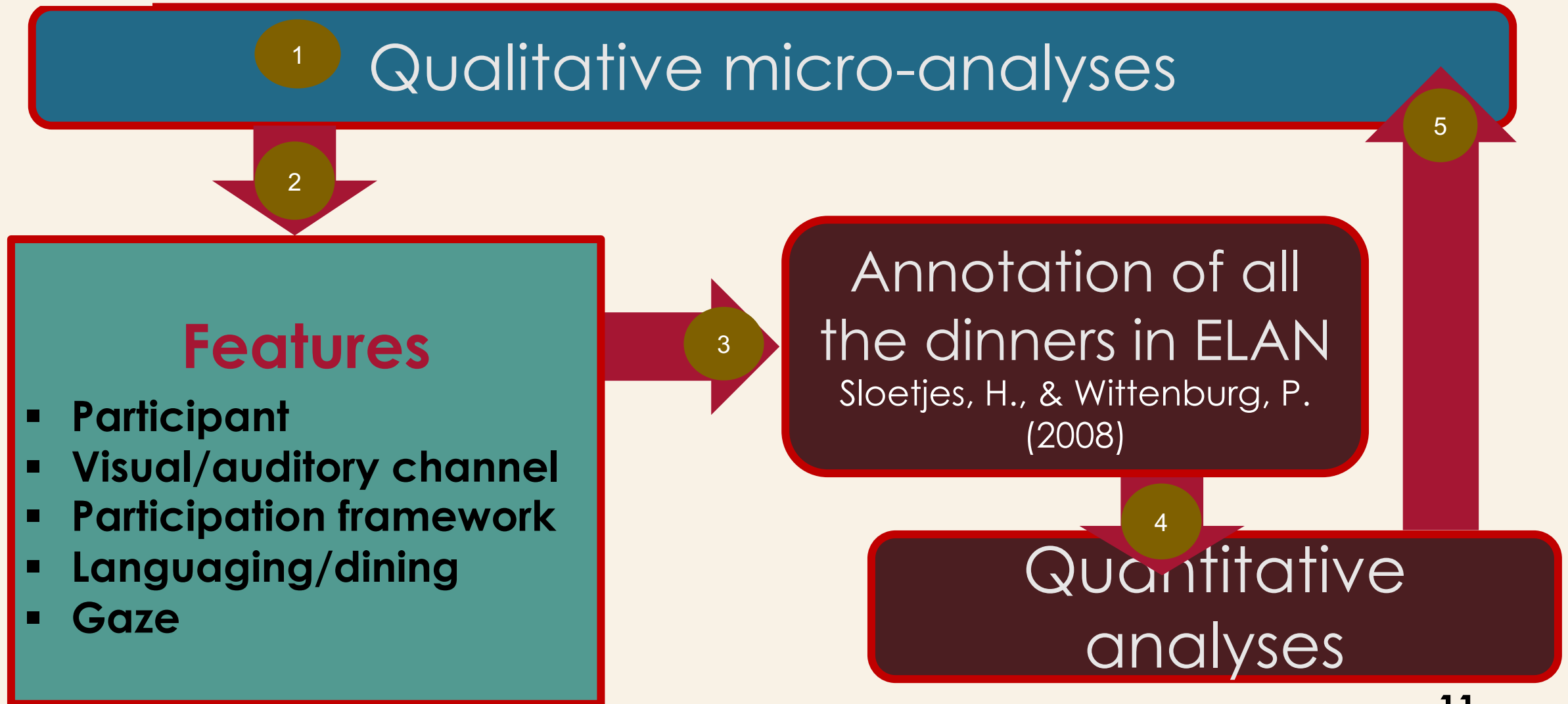
Qualitative analyses

Quantitative analyses



Mixed Method

(Stivers, 2015; Beaupoil-Hourdel & Morgenstern, 2022)



Qualitative Analyses

Dialogic use of gaze Madeleine 11 months



Madeleine is sitting in her chair.

Madeleine gazes at OBS (holding the camera)

1 MOT laughs.

2 MOT : **ça c'est curieux hein Madeleine, c'est curieux.**

that's curious Madeleine, it's curious

3 *Madeleine gazes at her mother, smiles*

4 MOT : **oui !** yes!

5 *Madeleine turns her gaze back at OBS and the camera.*

6 MOT : **C'est Martine.** It's Martine

7 *Madeleine looks at the toy she is holding.*

8 MOT : **Et ta tortue ?** Tu lui manges pas les pattes comme tout à l'heure ?
t'oses pas ? **And your turtle,** you are not eating her legs like you were a
moment ago? You don't dare?

9 *Madeleine gazes at her mother*

10 : MAD : eh

11 : **MOT : oui !** Yes!



Pointing and its dialogic impact

Madeleine 1 year and 6 months



Expert use of multimodality

Antoine 2;03



Plurisemiotic skills Eb 3 years old



Multimodal narrative competence

Eb 5 years old





A



B

Preliminary quantitative Analyses



Preliminary results: Acting

Children and adults activities:

Dining, non-dining, or both simultaneously.

Results for four families, two hearing (French) and two deaf (LSF).

	din	din/non-din	non-din
elder	70%	8%	22%
second	65%	17%	19%
mother	84%	4%	12%
father	89%	2%	9%

Fra: French (vocal) -- Gest-LSF: gesture or LSF (visual)

Vocal	--	fra	gest-lsf
FRA1-DIN1	77%	14%	9%
elder	85%	10%	5%
second	76%	15%	9%
mother	76%	17%	7%
father	72%	13%	15%
FRA2-DIN2	76%	17%	7%
elder	79%	15%	7%
second	82%	12%	7%
mother	69%	25%	6%
father	75%	16%	9%

Visual	--	fra	gest-lsf
SF-F2-DIN1	67%	0%	33%
elder	55%	0%	45%
second	77%	0%	23%
mother	66%	0%	34%
father	72%	0%	28%
SF-F4-DIN1	79%	0%	21%
elder	71%	0%	29%
second	96%	0%	4%
mother	69%	0%	31%
father	81%	0%	19%

The conversation is organized

In all families, there are always pairings between a child and an adult. Most of the time, the mother pairs with the youngest child and the father with the eldest.

Speaker
/Signer

Addressee

	elder	younger	mother	father
elder child	0%	7%	31%	62%
younger child	18%	0%	66%	16%
mother	37%	39%	0%	24%
father	55%	18%	27%	0%

Languaging and gazing at someone

The use of gaze is present from the very first years of the children.
This shows how much children and adult gaze at the person they are speaking to.

French (vocal)

	FRA2-DIN2	1-Ca	1-Cb	1-M	1-F
older	1-Cb	0%	67%	10%	4%
	1-M	0%	0%	49%	11%
	1-F	0%	0%	4%	40%
younger	1-Ca	68%	0%	6%	3%
	1-M	3%	0%	39%	3%
	1-F	2%	0%	1%	55%
mother	1-Ca	38%	3%	0%	3%
	1-Cb	2%	44%	0%	1%
	1-F	3%	5%	0%	33%
father	1-Ca	23%	3%	0%	0%
	1-Cb	3%	48%	0%	0%
	1-M	2%	4%	34%	0%

LSF (visual)

	SF-F2	1-Ca	1-Cb	1-M	1-F
older	1-Cb	0%	22%	2%	0%
	1-M	0%	3%	60%	1%
	1-F	0%	2%	1%	47%
younger	1-Ca	32%	0%	6%	10%
	1-M	1%	0%	45%	1%
	1-F	0%	0%	3%	41%
mother	1-Ca	77%	3%	0%	3%
	1-Cb	2%	70%	0%	2%
	1-F	5%	4%	0%	67%
father	1-Ca	70%	2%	4%	0%
	1-Cb	4%	73%	2%	0%
	1-M	1%	6%	73%	0%

Languaging and being gazed at

This shows how much when children and adult speak to someone, that person gazes back to the speaker/signer.

French (vocal)

	FRA2-DIN	older	younger	mother	father
older	1-Cb		65%	17%	10%
	1-M		21%	51%	28%
	1-F		8%	26%	25%
younger	1-Ca	41%		26%	24%
	1-M	9%		37%	21%
	1-P	11%		28%	33%
mother	1-Ca	37%	10%		3%
	1-Cb	18%	35%		2%
	1-F	15%	2%		28%
father	1-Ca	28%	8%	7%	
	1-Cb	19%	41%	6%	
	1-M	16%	15%	53%	

LSF (visual)

	SF-F2	older	younger	mother	father
older	1-Cb		28%	12%	6%
	1-M		6%	53%	6%
	1-F		1%	6%	73%
younger	1-Ca	23%		20%	24%
	1-M	2%		50%	5%
	1-P	13%		39%	59%
mother	1-Ca	69%	25%		48%
	1-Cb	9%	45%		10%
	1-F	66%	4%		78%
father	1-Ca	62%	4%	14%	
	1-Cb	42%	56%	34%	
	1-M	8%	7%	63%	



Conclusion

Children use all their semiotic resources **very early on**.

They progressively develop the ability to **orchestrate** semiotic resources according to the affordances of the situation....

They develop the ability to manage **co-activity** according to the **affordances of their languaging** (speech/sign/gesture).

They develop the ability to coordinate **gaze, acting** and **interlanguaging** (speech/gesture/sign) including backchanneling.