

# Time to talk: Investigating the quantity and quality of educator-infant interactions in long-day-care centres

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# Talking time ...

It is lunch time at one centre, and three staff are busily serving food to a group of 10 toddlers.

There is a great deal of educator talk about the food, mainly about what particular infants want and are eating – ‘Do you want more rice?’ and so on. Much of this talk is also directed to one another.

The infants appear content and general occupied with eating, occasionally looking at an educator or a peer.

At another centre, the lunch table is much quieter. 3 toddlers are sitting with an educator.

The toddler holds out something in his hand to the educator – ‘*Baa!*’, to which the educator responds ‘*Grape, that’s right*’, then as the toddler puts it in his mouth – ‘*put it in your mouth. Nice eating*’. A moment later, the toddler vocalises and points across the table. Another educator responds with ‘*Do you want this one? Cheese?*’, the toddler points again and vocalises

# Some background

- High quality early childhood education has been positively associated with language development (NICHD, 2000)
- But ...
  - Current measures of quality in infant-toddler tend to 'gloss over' detailed features of the language environment
  - within ECEC infant-toddler settings, concerns have been raised about the the quality of the language environment (Durden & Dangel, 2008; Girolametto et al., 2000)



# Study background and aims

The data presented here is from a pilot study for a now ARC funded Discovery project which aims to investigate the language environment of infant-toddler ECEC settings

The Pilot study aimed to:

- Investigate the quantity and quality of educator-infant talk and interactions
- Investigate activity settings which appear to provide rich contexts for talk and interactions
- Begin to investigate how quality can be conceptualised in terms of the features of the language environment
- Pilot a new method of language environment analysis



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# The significance of talk

## Talk frequency matters:

- Frequency and complexity of adult talk to infants predicts language development (Hart & Risley, 1992; Hoff, 2003; Huttenlocher et al., 2002).
- Infant vocalisations and communicative behaviours are also important

## Different activity settings matter:

- Different activities encourage different quantities and qualities of talk in homes (Hoff, 2010) and ECEC centres (Girolametto et al., 2000)
- E.g., book reading and structured activities may be potentially rich contexts, while meal time may be less rich (Bouchard et al., 2010; Dickinson et al., 2014; Soderstrom & Wittebolle, 2013)
- Children as young as 2 use language differently, depending on the activity setting (Hoff, 2010; Soderstrom & Wittebolle, 2013)



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# Our method

## Participants

- 15 infants aged 9 – 20 months attending 5 different infant rooms for under 24-month-old infants

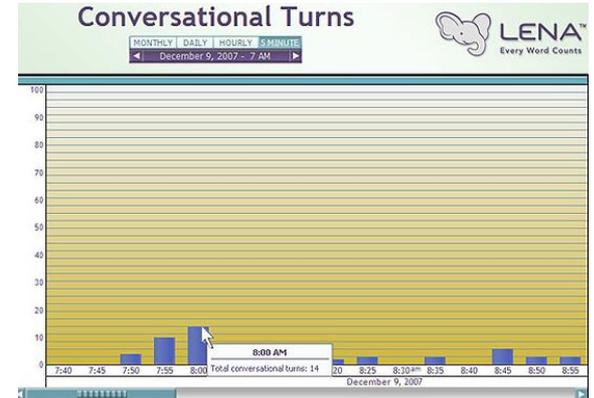
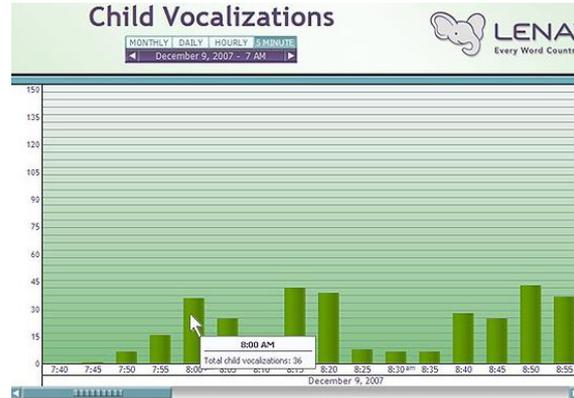
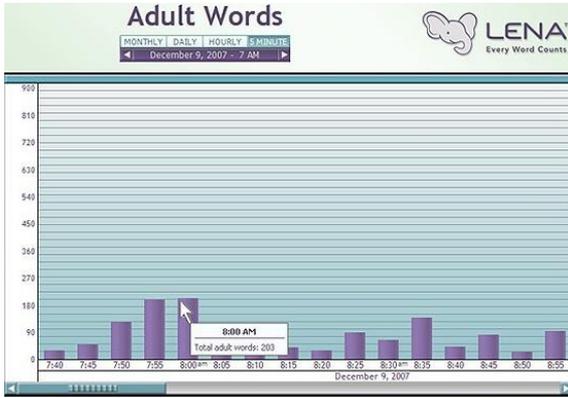
## Procedure

- Each infant was audio and video-recorded for an entire day at the centre
- LENA (language environment analysis) audio-recordings



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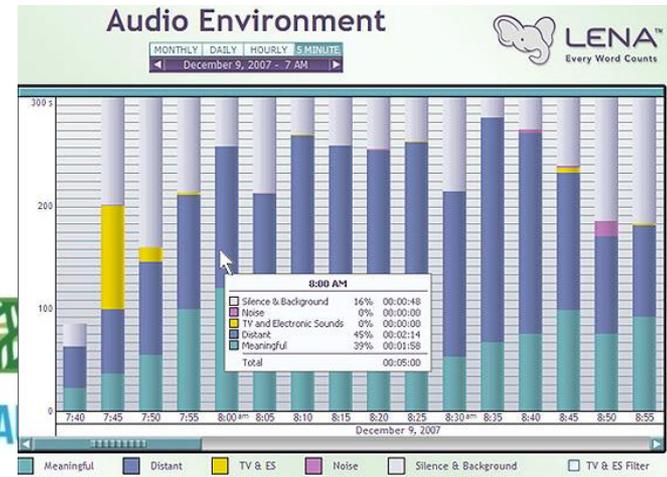
# What LENA can show us



## Current analysis:

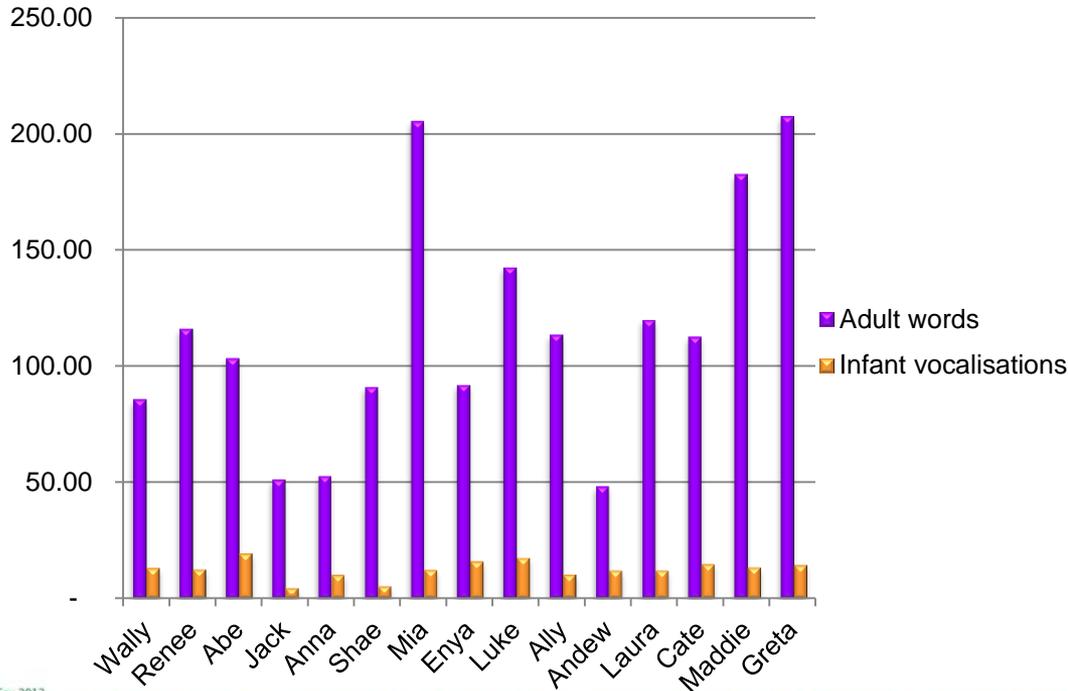
Adult words and Child vocalisations

- Individual differences?
- Activity context differences?



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# How much talk?



## Why the difference?

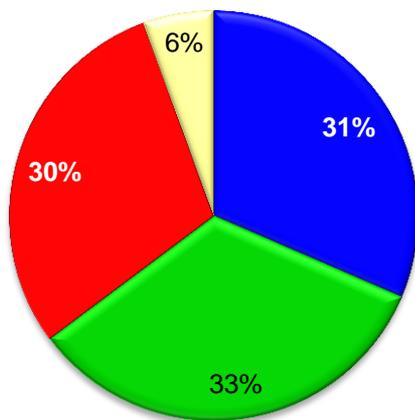
- Gender? – no
- Infant age? – no
- Relationships between AWs and CVs? – yes, but only weak



# When does talk happen?

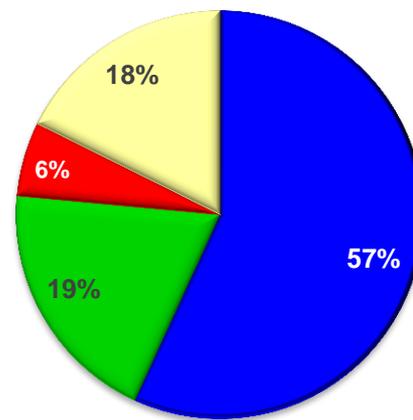
## Adult words

- Play
- Caregiving
- Language-based activity
- Wandering/watching



## Child vocalisations

- Play
- Caregiving
- Language-based activities
- Wandering and watching

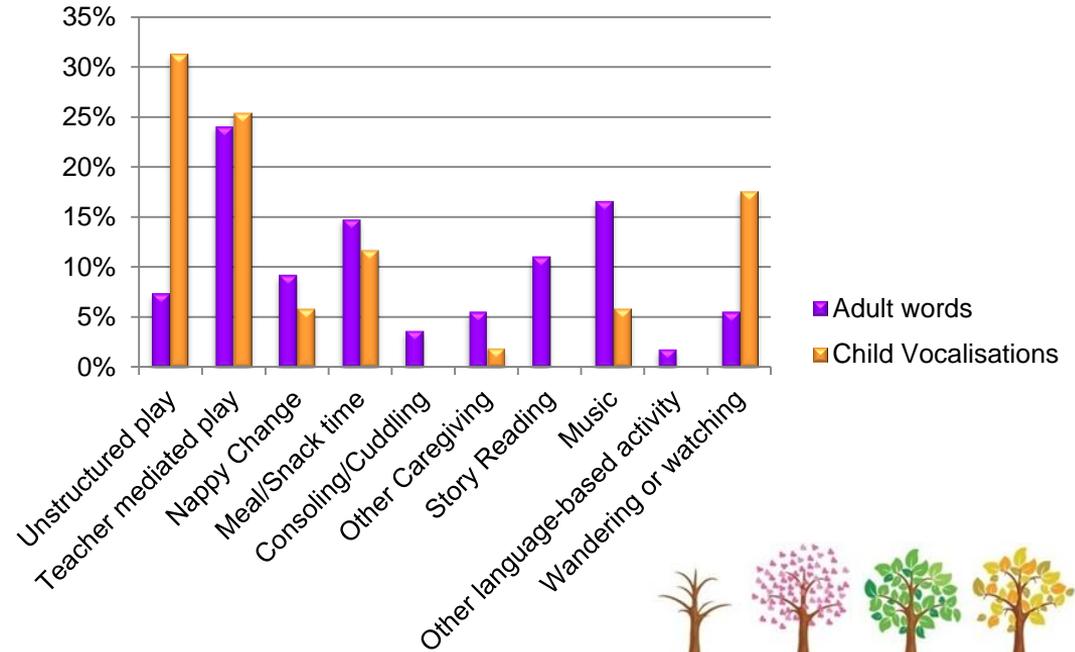


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# When do differences occur?

## Things that stood out:

- Predominance of infant vocalisations in unstructured play and wandering/watching
- Predominance of adult talk in music, story reading and caregiving (overall)
- Teacher mediated play produced similar counts



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# Some questions arising from these findings

- What kind of talk is occurring in these contexts?
- Why the large differences in adult talk and infant vocalisations in particular contexts?
- What does and doesn't LENA tell us?



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# What does this talk 'look and sound' like?

## Unstructured play – lots of child vocalisation

**Enya** is sitting on a trestle when a plane flies over. She repeats '*pane, a pane, a pane*' without addressing this to anyone in particular. She continues to babble to herself for around 20 seconds before grinning and toddling across to a climbing ramp, chanting '*di di di di*' as she goes.

**Enya** touches the bumps on the ramp she babbles to herself '*di di da. Aaa gi gi gaaa*'. She increases her volume and say '*I shie. I shie*'. An educator nearby asks '*what are you doing Enya?. Are you doing some rock climbing?*'

**Enya** responds by looking up pointing to the ramp '*Cli ee's "Cuck. Cii Cuck Cii ee*'

**Educator:** '*Rock climbing*'

**Enya:** '*Cii min. Cuck cii min*' Enya then continues to babble melodiously to herself while touching the bumps on the ramp and crawling up and down.

30 seconds later, another child crawls along the ramp and then off on to the veranda. Ella follows '*Cmo cmo Ar go*'. She reaches the other child and pats him on the back '*C'mo c'mo Ar go. Cuck ooo oh ... Ar go*' She gives the child a cuddle and an educator guides the two of the back to the playground '*Come on. Come back to the playground Hugo*'

**Enya** walks holding on to the other child, while saying '*C'mon Ar go. Cmon Ar go*'.

# Is more adult talk always better?

## Meal time – lots of adult talk

It is lunch time, and Abe is sitting at a table with 4 other children. His table is next to another table of 5. Three educators are standing close to the tables, serving food. Educator: (to another infant) 'Are you telling me you're a bit tired too? Jo, Jo – would you like some more lunch, or what would you like to do? Do you want some more rice?'

This talk continues as the educator rotates around the table. Abe is putting his spoon in his mouth and looks to the other children from time to time as the educator walks around behind the chairs and chats to the other children. 'Yeah? You want more rice? You want some more?' And so on.

At one point two educators discuss where food has been placed – 'It's back in the fridge. I put mine on the bottom shelf. I was hoping I would know the difference'

All the while Abe is sitting, occasionally placing his spoon in his mouth while glancing around. He appears to have minimal interest or involvement in the chatter that is taking place around him.

# Music - lots of talk ... with & without infant involvement

Anna is sitting, legs out, facing an educator who is also sitting on the floor. Playing with some large felt leaves, Anna picks one up and places it on her head.

The educator laughs and then places the one she is holding on her head too. Both Anna and the educator repeat this action, and there quiet talk between them. A couple of other children join and sit facing the educator who incorporates them instantly into the chatter: 'Where else can we put one? Can you put one on your knee? On your head – that's where we're putting it. On our heads' (the children now are joining in) '... and then shake it. Shake it' The educator shakes her head and the children all imitate.

The educator then starts singing 'Hheads and shoulders knees and toes' putting her leaf on the relevant parts of the infants' body as she sings. She sings slowly, pausing momentarily which appears to encourage one or more infants to vocalise.

When finished she asks 'What's next?' and the infants watch her intently as she starts 'Eyes and ears and mouth and nose' At least one infant is saying key words and all are watching, listening and participating. For another 30 seconds, the educator rotates her attention between the three, clearly inviting and gaining participation.

# Music - lots of talk ... with & without infant involvement

At the end of the song, the educator says 'How about this one?' and starts to sing 'If you're happy and you know it', again rotating her attention between all three infants. However, all three no longer participate, and from time to time put the leaf back on their heads.

The educator persists with her song, but the infants sit passively, watching, but no longer participating or vocalising and gradually wander away.



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# When rich adult and infant talk coincide

## A Sustained, reciprocal interaction

Luke and Educator are outside – the educator is sitting and chatting to Luke and other children as they come and go. The attention switches to Luke's shoes:

**Educator:** 'They're a little bit big those shoes.'

**Luke** looks down at his shoes , 'ba baa'.

**Educator:** 'What is is Luke? What's on your shoes? Is there a star? Oh another shoe'

**Luke:** *Nessa – sdah. Sdah*

**Educator:** 'Star. Can you count the stars? 1 – 2 – 3 -- 4' (she points as Luke follows)

**Luke:** *Fi Fi.*

**Educator:** 'Four stars.'

*Other children join them ...*

**Educator:** 'Come and sit next to Luke and see what you've got. Give Nessa your shoes. Luke's shoes' (she points), 'and Ellie's Shoes. Luke has a star' Luke: *Sdar. Sdar*

**Luke:** *Sdar. Sdar*

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# When adult and infant talk coincide

**Educator:** 'And more stars'

**Luke:** *More sdars?*

**Educator:** 'And what does Ellie have?' (Luke looks at Ellie's shoes)

**Luke:** *Da ... Sooo*

**Educator:** 'Shoes.'

**Luke:** *Faaaa*

**Educator:** 'Flowers.' (another child joins) 'Missy has flowers on her shoes. Wow – Flowers. Missy – did you see Luke has a star?' (Missy follows Educator's point and looks at Luke's shoe)

**Luke:** (also looking at his shoe) *Sdar*

**Educator :** 'A star on Luke's shoes.' *The conversation continues until a breeze blows through*

**Educator:** 'Oh, it's a bit cold'

**Luke:** *Cold*

**Educator:** 'Yeah. Cold like this, brrrrrr'

**Luke:** *Raining .... Raining* (he points to one side and Educator follows his point)

**Educator :** 'Is it raining?' ... *The conversation continues ....*

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# What we have learnt so far

## LENA does provide useful information which

- Provides an gross overview of what the infant experiences in long observation periods in terms of language input, audible talk and their own vocalisations

## But wait – there's more ...

- LENA can 'mine the data' further than what was presented here – e.g., who initiates conversational turns? Is the child vocalising to an adult or another child? How much talk is close vs distant and overlapping, and so on – **We have much more to learn**

## LENA is limited because:

- It can only provide broad language environment measures
- It cannot give details of the context
- It may 'struggle' in group contexts in terms of its measure of conversational turns

## A combination of LENA and video works well

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# Where to next?

## Coding by activity context can only tell us so much

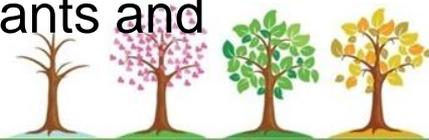
- We need to look more closely (at both visual and audio data) at the kinds of interactions that occur during particular activities – are these ones which can promote language development?

## How can individual differences be explained:

- We need to look more closely at educator, infant and room characteristics

## What does this mean for 'quality' in infant-toddler programs?

- We need to think more closely about quality in terms of the language environment and interaction opportunities for both infants and educators



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# Thanks to

- All of the educators and infants in the 5 centres that participated in this pilot study
- Alice Hall, who coded the videos and helped us to make sense of what was happening

**Are you interested in joining the research team or participating in the project? We're keen to hear from you!**

**Please email [sheila.degotardi@mq.edu.au](mailto:sheila.degotardi@mq.edu.au)**



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