Longitudinal study of a deaf child exposed to CS

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1. WHY this research?
2. HOW do we work?
3. WHAT have we found?
4. WHICH are the implications?
WHY this research?

Before we can answer this question…

…we will show you some FACTS about CS

… and some (false) IDEAS about CS
WHY this research?

FACTS: CS is an excellent system

1. For speech perception
   Through CS, deaf subjects can perceive a very high proportion of oral production. Nicholls & Ling (1982):
   - Lip-reading → 25%
   - CS → 95%
WHY this research?

FACTS: CS is an excellent system
1. For speech perception
2. For phonology & grammar
   Children exposed to CS develop full phonological representations & grammatical information.
WHY this research?

FACTS: CS is an excellent system
1. For speech perception

2. For phonology & grammar

3. Reading & writing
   “The bulk of evidence reveals that deaf students who use predominantly a phonological code in working memory tend to be better readers than those who use a non phonological code.” (Paul, 2003)
WHY this research?

FACTS: CS is an excellent system
1. For speech perception
2. For phonology & grammar
3. Reading

Furthermore, researchers have shown that:

4. Age of exposition is crucial
Children exposed to CS before they are 2 years old achieve better linguistic development; i.e. it is important that children are exposed to CS before 2.

Blanca: 18 months
WHY this research?

FALSE IDEAS ABOUT CS:

- Many therapists and researchers believe that CS is not an adequate system. *(Never CS group)*
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- Some therapists believe that CS should not be used before the age of 3. *(Later CS group)*
WHY this research?

FALSE IDEAS ABOUT CS:

- Many therapists and researchers believe that CS is not adequate system. (*Never CS group*)

- Some therapists believe that CS should not be used before the age of 3. (*Later CS group*)

- Many parents feel that learning CS is too difficult (*Not me group*)
Now we may answer the question…

- … we want to provide scientific evidence that such common ideas are false.

- … we want to confirm the hypothesis that children exposed to CS acquire oral language following the same steps as hearing children.
WHY this research?

More specifically, we want to answer questions such as:

1. How many words are the parents/therapist cueing?
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2. How many words is the child attending?
3. Is the input received by the child linguistically rich?
WHY this research?

More specifically, we want to answer questions such as:

1. How many words are the parents/therapist cueing?
2. How many words is the child attending?
3. Is the input received by the child linguistically rich?
4. Is CS compatible with other communication means such as natural gestures?
HOW do we work?

The subjects:
- Deaf girl
- Family
- The therapist

Research methodology
- Longitudinal corpus: 18-54 months
The deaf girl:

- Profoundly deaf
- Cochlear implant (17 months old)
- Started our rehabilitation program 15 months old
- Before 24 months old she produced her 1st words
- When she was 30 months she produced her first 2-word utterances
How do we work?

The parents:

- Learnt CS with a **computer assisted system** (and help of a professional therapist)
HOW do we work?

The parents:

- Learnt CS with a computer assisted system (and help of a professional therapist)

- Always use CS at home

Playing in mum’s bed

Story telling with mum and dad

Lunch time

Going to bed
HOW do we work?

The parents:

- Learnt CS with a computer assisted system (and help of a professional therapist)
- Always use CS at home
- **Mother** is main interlocutor (father is often away due to job)
The therapist:

- Has 10 years experience with CS
HOW do we work?

Period:

- Start: 18 months
- End: 54 months

Now Blanca is 36 months old
HOW do we work?

Research methodology: longitudinal corpus

- We video-record a 30 min. session every week
- Alternatively at home/lab
HOW do we work?

Research methodology: longitudinal corpus

➢ We transcribe every session (that’s the corpus).
HOW do we work?

Research methodology: longitudinal corpus

- The transcriptions identify:
  - The words produced orally by adults & child
Research methodology: longitudinal corpus

- The transcriptions identify:
  - The words produced orally
  - The words that were cued
HOW do we work?

Research methodology: longitudinal corpus

- The transcriptions identify:
  - The words produced orally
  - The words that were cued
  - The words that were attended
HOW do we work?

Research methodology: longitudinal corpus

- The transcriptions identify:
  - The words produced orally
  - The words that were cued
  - The words that were attended
  - And many other details: spontaneous gestures, etc.
WHAT have we found?

- Quantity of input
- Quality of input
- How is the interaction adult-child
- Blanca’s first words & gestures
Adults cue 60% of oral words (no diff. between mother & therapist)

Child attends 95% of cued words (therapist) & 85% (mother)
Adults cue grammatical words more often
No difference between mother & therapist
WHAT? Quality of input

- Adults cue all words (⇒ grammatical words are cued)
- No difference between mother & therapist
CS is not incompatible with natural gestures present in mother-child interaction.
Blanca follows the progression of hearing children

- Produces gestures before her first words
- Number of gestures remain stable, number of words increases
WHICH are the implications?

Now we may say something to:

- Skeptic therapists and researchers
  *(Never)*

- Critics of early cueing
  *(Not now)*

- Unconfident or skeptic parents
  *(Not me)*
WHICH are the implications?

Our answer to...

...skeptic therapists and researchers:

- Through CS the child is receiving a rich input
  - Over 60% of the phonological input
  - 83% of lexical types
  - Over 65% of grammatical items

CS works!
WHICH are the implications?

Our answer to...

...skeptic therapists and researchers:

- Through CS the child is receiving a rich input

- And CS does not block other communication means
  - Parents & therapists do use spontaneous gestures

CS works!
WHICH are the implications?

Our answer to...

...critics of early cueing:

➢ Thanks to the input provided through CS:

1. When Blanca is 2, we find the first lexical burst
2. When Blanca is 2.6, we find her first 2-word utterances
3. Her first words & gestures follows the same pattern as in hearing children

She needs CS now!
WHICH are the implications?

Our answer to…
…unconfident parents:

- The mother commands CS as well as the professional therapist.
- Explanation: command of CS is not such a difficult task

You can do it!
Thank you very much for your kind attention

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