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# CONVERSATION: A model for supporting pragmatic skills in students with hearing loss

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# BACKGROUND

- Early diagnosis, early intervention, and improved access to spoken language has enabled many young children who are deaf and hard-of-hearing (DHH) to develop spoken language that is similar to their typically developing peers (Yoshinaga-Itano et al., 2010).
- Recent research, however, also shows that some young DHH children are still delayed in various aspects of spoken language when compared with their peers (Geers et al., 2016).
- Much of this research characterises children's language abilities in terms of expressive and receptive skills as reported from performances on formal speech and language assessments.
- These language assessments do not adequately assess **children's pragmatic abilities** (Paatsch, Toe & Church, 2017; Yoshinaga-Itano, 2015).

# BACKGROUND

- Much of the research that has investigated the pragmatic skills of school-aged children with hearing loss has observed and measured these skills during interactions with adult partners using spoken language (Lloyd, Lieven & Arnold 2001; Lloyd, Lieven & Arnold, 2005; Most, 2002).
- Typically these interactions occur within the contexts of structured tasks, such as barrier games, or during conversations with parents, teachers or clinicians (Most, Shinga-August, & Meilijson, 2010; Toe, Beattie & Barr, 2007; Wood, et al., 1982).
- Many DHH children develop complex pragmatic skills more slowly than their hearing peers (Goberis et al., 2012; Ibertsson et al., 2009).

# OUR RESEARCH

Church et al., 2017; Paatsch & Toe, 2013, 2014, 2016, 2017; Toe & Paatsch, 2010; Toe et al., 2016)

- Investigated the pragmatic abilities of DHH school-aged children and young people during interactions with their age-matched hearing peers
  - Spontaneous conversations
  - Question-and answer tasks (e.g., Trivial Pursuit)
  - Expository tasks (e.g., Teaching peers how to play a complex & simple game)
- *Findings showed* that these children displayed a wide range of pragmatic abilities:
  - Good speech intelligibility and were generally understood by their hearing peers
  - Ability to ask and respond to questions
  - Make personal contributions
  - Take turns
  - Request for specific and general clarification
  - Convey the rules of a simple game



# HOWEVER...

- There are many challenges for these children that arise from some of the more subtle pragmatic skills that are important for collaborative, co-constructed and satisfying conversations including:
  - Subtle rules of eye-gaze
  - Use of feedback throughout the talk
  - Ability to sustain topics
  - Ability to repair the subtle breakdowns in communication
  - Ability to develop contingency



- C** Collaboration is critical in conversation
- O** Opportunities that speakers have to interact (from birth to adulthood)
- N** Non-verbal features of interaction signal to the conversation partner both the content of speech and the attentiveness of the listener (eg. head nods)
- V** Verbal content carries meaning in how it is responded to in the interaction
- E** Eye gaze provides a resource for speakers to attend to cues from the listener, and for the listener to attend to the ongoing turns at talk
- R** Repair is the necessary mechanism for speakers to check they are making sense of one another
- S** Sequences of interaction depend on both or all parties to the interaction sustaining the topic
- A** Acknowledgments function as feedback cues throughout the interaction
- T** Turn-taking is the collaborative endeavour of one speaker after another
- I** Initiating topics is not solely the responsibility of the speakers as the topic must be taken up by other(s) to continue
- O** Otherness underscores the perspective of other that is required for the quantity and quality of what people talk about
- N** Naturally-occurring interaction is the locus of collaboration

- Developed a **CONVERSATION model** of intervention (Paatsch, Toe & Church, 2017)
- Extends on our earlier CONVERSE model (Paatsch & Toe, 2016)
- Refining the model allows for a more focussed application
- Draws on authors' recent research and conversation analysis (CA) methodology to understand talk-in-interaction

# COLLABORATION

- Collaboration in terms of
  - the **turn-by-turn co-construction** of sequences of interaction
  - participation, where **all parties share an orientation to the progression of the conversation**
- Responsibility of **all parties**
- Back-and-forth nature of language in use
- Understanding **how and where language is used effectively** with different partners



# OPPORTUNITIES

- Many children have reduced opportunities for interaction and, as such, can impact on their spoken language development
- *Our findings* show that hearing peers can also be reluctant conversational partners, leaving much of the work to their peers with hearing loss

## RECOMMENDATIONS

- Need to provide opportunities to participate in diverse conversational interactions
- Conversational partners (adults and peers) also need to be guided to use rich exchanges to express desires, thoughts and knowledge
- Use of videotaped conversation for reflection



# NONVERBAL CUES



- Use nonverbal cues to convey or interpret message...
  - Indicate that they are engaged (e.g., move forward, head nod)
  - Support verbal contributions (e.g., facial expressions, pausing)
  - Indicate signal interest or lack of enthusiasm (e.g., shift in eye gaze)
- **Our findings** showed that many children with hearing loss
  - provided very little feedback through listener tokens (e.g., head nod)
  - missed nonverbal cues from the speaker such as pauses and intentional glances
  - Resulted in poor contingency and following up on third turn

## RECOMMENDATIONS

- Modelling
- Observations of videotaped conversations

# VERBAL

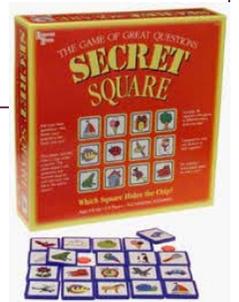
- Spoken language skills of children with hearing loss have improved significantly over past 40 years (Spencer, 2016)
- However still below age-matched hearing peers in areas of syntax & grammatical knowledge, vocabulary and morphology (Duchesne, 2016; Goberis et al., 2012; Tobey et al., 2013)
- *Our findings* showed that many children experienced difficulties in using language within the contexts of everyday communication

## RECOMMENDATIONS

- Need to work on the more subtle verbal language skills
- Importance of collecting a more complete language profile beyond global standardised tests

DHH child instructing hearing peer how to play a game

- 21 We have **twenty-five** out (gets squares out)
- 22 Okay, so we got **twenty-five** out and then we get a counter and then you got to turn around
- 23 Okay, now you turn back around and you say **any kind** of questions. So you say is it **something** or what is it and I say yes or no.
- 24 you say is **it like**, just say I had this (picks up a square from the box) is it in the sea or out of the sea, or if you're eating **something** or if it's an animal or **whatever**

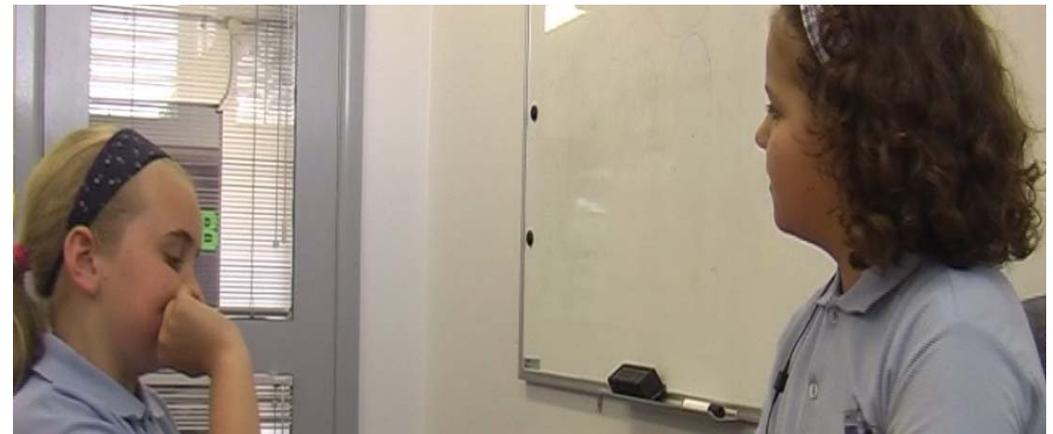


# EYE GAZE

- Prominent in managing turn allocation
- Important in monitoring emotional cues
- Challenging for many children with hearing loss (Dammeyer, 2012; Most & Aviner, 2009; Sandgren et al., 2014)
- *Our findings* showed some atypical eye gaze
  - Less fluent and contained extended pauses
  - Resulted in awkward conversations

## RECOMMENDATIONS

- Need to draw explicit attention to the importance and use of subtle cues of eye gaze



# REPAIR

- Describes the way that speakers manage to point out, clear up or resolve any misunderstanding in conversation
- Speakers need to fix problems of understanding in order to continue the interaction...detour on the way back to the topic
- *Our findings* showed that there were differences in how school-aged children with cochlear implants went about resolving trouble sources in their interactions with their age-matched peers.

## RECOMMENDATIONS

- Need to work with children to develop the necessary skills to repair the talk when there are troubles
- Need to point out that when people talk together they frequently encounter problems of hearing, speaking and understanding and these are continually repaired

## EXAMPLE: ABSENCE OF REPAIR

PINA (CI): it was [so busy; that time.  
BECCA (Hearing): [y:eah.  
BECCA: °ye:ah°=  
PINA: =what's your favourite band.  
**(1.2)**  
BECCA: **((nods))**  
BECCA: **mm.**  
**(0.6)**  
BECCA: **>OH.** (.) my favourite band.<  
PINA: =>YEH<  
BECCA: >yeh um< (.) black eyed  
peas;=hh °↑ha.° .h yours?  
(0.6)  
PINA: ah w'll.  
(0.7)  
PINA: i don't really have one  
but highschool °musical.°  
BECCA: yeah. [=hahaha. .hh

Both girls were talking about the film they had both seen

Acknowledges contribution

Pina introduces a new unrelated topic

Trouble in the talk

Becca (listener) fixes the problem



# SEQUENCES TO ENABLE SUSTAINED INTERACTION

- Importance of developing extended sequences beyond two-turn sequence to lead to sustained dialogue (e.g., greeting & response; question & answer).
- Some children with hearing loss experience difficulties with elaborating on a particular theme (Dammeyer, 2012)
- *Our findings* showed that many of the interactions
  - were not balanced (e.g., DHH children initiated more topics, asked more questions)
  - contained a series of question-answer sequences
  - resulted in communication breakdown

## RECOMMENDATIONS

- Provide opportunities to understand the types of sequencing formats
  - Question type
  - Response type
  - Use of third turn
  - Contingency

# ACKNOWLEDGEMENT



- Acknowledgement tokens (e.g., mmhm, uh, huh, yeah, right, ok) are often used
  - instead of something more substantial
  - to pass the turn back to the prior or another speaker
  - to utter appreciation, encouragement or indifference
- How and when, rather than how often, they are used is critical in ongoing talk

## RECOMMENDATIONS

- Support children's understanding why, how and when acknowledgements tokens should be used in conversation

# TURN-TAKING



- Efficient turn-taking depends on precise timing so that
  - One speaker talks at a time
  - There are no lengthy pauses
- Listeners need to monitor the turn closely so they can predict when the speaker may stop and when the next turn starts
- *Our findings* showed that children with hearing loss appeared to take longer turns, ask more questions, & make more personal contributions

## RECOMMENDATIONS

- Need to develop turn-taking skills with a range of partners
- Understand how to monitor turns
- Understand talk domination
- Develop more subtle skills of turn-taking such as repair, extension and eye-gaze to denote turns

# INITIATING TOPICS

- All conversations need a focus or topic which is ideally of mutual interest
- Acquired in the early years and refined in adolescence
- Many adults with hearing loss often initiate more topics to control the conversation and avoid conversational breakdown
- *Our findings* also showed
  - similar patterns with school-aged children with hearing loss
  - hearing peers were often more passive
  - type of topic initiation had an impact on topic maintenance & contingency (E.g., What's your favourite colour?)

## RECOMMENDATIONS

- Greater attention to types of topics initiated with a range of partners
- Encourage balance
- Model different topic initiators
- Encourage use of third turn



# OTHERNESS

- Collaborative nature of conversation requires speakers to consider what it is that their conversational partner already knows or might know
- Theory of Mind (ToM) is important in understanding the world from another person's perspective
- Many children with hearing loss with hearing parents appear to exhibit significant delays in ToM (Peters et al., 2009) while other studies report no differences (Ziv et al., 2013)
- 'Otherness' involves ToM and the ability to enact assumptions about the conversational partner
  - Speakers need to be mindful of the listener's point of view
  - Need to ensure that the speaker provides enough information, be truthful, ensure the contribution is relevant and that the contribution is orderly and unambiguous (Grice, 1975)

# NATURALLY-OCCURRING INTERACTION

- We learn more about opportunities for development, or challenges in pragmatic development by studying naturally-occurring interaction
- Need to observe in everyday settings including in group work and playground activities where children have to navigate the ongoing dynamics of their social worlds
- Patterns of interaction also change for all children when talking with parents, siblings, friends, siblings, teachers or other adults



# SUMMARY

- Children with hearing loss are able to use a wide range of pragmatic skills
- Many experiences difficulties with the more complex and subtle skills required for social interaction
- Early intervention is critical given the relationship between pragmatic skills and the development of friendships, children's sense of self and engagement in school
- The **CONVERSATION model** recognises...
  - that pragmatic skills are not limited to linguistic competence
  - the way language is used in social contexts
  - That all elements are interrelated and should not be treated in isolation
  - Supports teachers, clinicians and parents to develop children's pragmatic skills



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