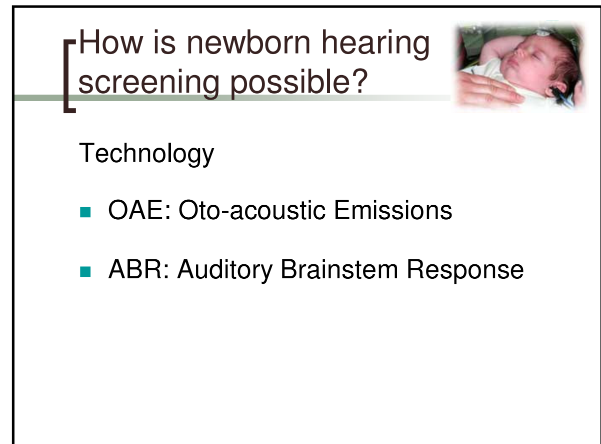
The Languages of Newborn Hearing Screening

Understanding Screener and Parent Talk and Interaction

May 29, 2008

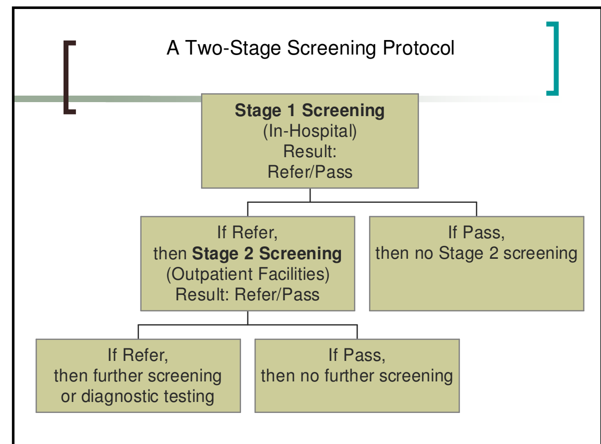
Brenda Poon
Assistant Professor
Human Early Learning Partnership (HELP)
University of British Columbia, Vancouver, Canada

Michael Smith Foundation for Health Research
Social Sciences and Humanities Research Council of Canada
Conseil de recherches en sciences humaines du Canada



The Language of Newborn Hearing Screening: Multiple Meanings

My child can hear.
What does this mean?
Nothing is wrong.
PASS
My child can't hear.
Negative
Something could be wrong.
Everything is okay.
FAIL
Healthy
What did I do wrong?
Normal
Not healthy
I need to come back for another test.
Not normal
REFER



Universal Newborn Hearing Screening (UNHS)

- Screening procedures designed to identify infants with the potential for permanent, significant, congenital hearing loss.
- Enables:
  - Diagnosis prior to three months of age
  - Intervention by six months of age (Joint Committee on Infant Hearing, 2000).
- Programs differ in protocols and technology used.

Rationale for the Study

- Parents' reports of stress and anxiety following an initial stage of screening where a positive (refer) result was found.
- Parent-professional interaction identified as a potential factor influencing parents' emotional reactions to screening.
- Limited research available pertaining to communication of UNHS results, parent-professional interaction, and accounts of the results.

Research Questions

- What is the discourse surrounding the disclosure of re-screen results in one UNHS program?
- How is this discourse constructed?

Parent Participants

- Age: 20 to 26 years old
- Household income: Lower to middle-level incomes
- 2 of 5 mothers first-time parents
- 4 of 5 mothers part of a two-parent household
- 1 mother of an infant who had been diagnosed with a hearing loss
- No prior knowledge of UNHS or involvement with the provincial project

Research Site

- A provincial universal newborn hearing screening project in Canada
- An outpatient facility where infants received a Stage Two screen in a two-stage screening protocol
- A room within an Audiology department of a Children's Hospital located in a metropolitan area

Mother-Infant Participants

Family	**Mother**	**Infant**
Family Case 1	Marie	Scott
Family Case 2	Janice	Jenny
Family Case 3	Kate	Robert
Family Case 4	Carol	Thomas
Family Case 5	Gail	Wendy

Participants

- 5 mothers who had received a "refer" result at Stage One.
- 1 screener who had communicated screen results at Stage Two to each of the parent participants: audiology assistant

Types of Interactions

Observation of Screening
(Screener - Parent)

Parent Interview
(Researcher - Parent)

Screener Interview
(Researcher - Screener)

Sources of Data

14 interactions

- 4 videotaped screening interactions
- 5 follow-up interviews with parents
- 5 follow-up interviews with a screener
- Follow-up interview included a videotape review portion

Transcription Symbols (from Jefferson, 1984, 1985)

Characteristics of Speech Delivery

- Sustained sounds are indicated with a colon (:)
- Falling intonation - down arrow (↓); Rising intonation – up arrow (↑)
- Emphasis on speech with underlined text
- Increased volume speech indicated by CAPITAL letters
- Markedly quieter speech with a degree sign at each end of utterance or passage (°)
- Greater than and less than symbols enclose speech delivered more rapidly (>text<) or more slowly (<text>) than usual for speaker
- Laughter and audible inhalations (.hhh) or audible exhalations (hhh)

A Discourse Analytic Approach

(see Potter & Wetherell, 1987)

- Repeated viewing and listening to the video- and audio-taped data
- Transcription of video- and audio-taped data using Jeffersonian transcription key (see Jefferson, 1985)
- Coding of transcripts
- Reading transcripts prior to analysis: "What feelings came across as I was reading the text?" "What aspects of the text are influencing me to read the text in this way?"

Transcription: An Example…

Lori: [So do you - do you] know about the - the TEst? Do you know what we're doing or?

Kate: U::m:: not really, no.

Lori: Okay. So >you weren't with him in the hospital when they did the screen?<

Kate: I WA:s, but she didn't really te:ll=

Lori: Oh:

Kate: =me a whole lot.

Lori: [Oh okay alright]

Kate: >She kinda stuck something in his ear and told me to come back< s(hhh)o:

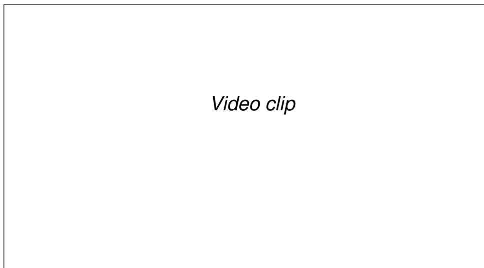
Analysis: Identifying the Action Orientation of Talk

- Searching for patterns of variation and consistency
- Developing hypotheses about functions of talk in interactions
- Examining the linguistic resources of discourse

What did the screening interactions look like?

- 15 to 30 minute appointments
  - Greetings
  - Discussion of Stage One screening
  - Stage Two screening preparation
  - Stage Two screening and disclosure and parental response (screen preparation, wait period, disclosure).
  - Closure

Example 1: Lori, Janice, and Jenny



Eye gaze - An example

Counter	Lori's Eye Gaze	Carol's Eye Gaze	Action
4:19	Screen device	Lori	Wait for result (L,C)
4:20	Screen device	Screen device	Wait for result (L,C)
4:21	Screen device	Thomas	Wait for result (L,C)
4:22	Screen device	Lori	Wait for result (L,C)
4:23	Screen device	Screen device	Wait for result (L,C)
4:25	Screen device	Thomas	Wait for result (L,C)

Screener's Talk:

- Are you concerned?
- Are you?
- Is it…?
- In what way?
- To loud noises you mean or to your voice?
- And you remember your son doing that at a young age?
- Okay (repeated)
- Okay. Alright. Were you with her in the hospital when they checked her?
- And did they explain the test to you there or?

Construction of the Wait Period

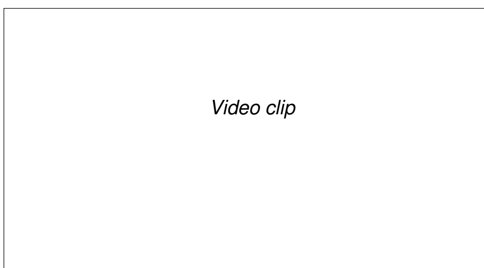
Screener's Version

- need to repeat the screen several times
- trying to get a "seal"
- "squeaky" or noisy baby
- parent may not be anxious about the screen result but may just want to complete the screen

Parent's Version

- time to screen this ear is much longer than for the other ear
- concern that child may not be able to hear in one ear

Example 2: Lori, Carol, and Thomas



The Talk of the Interactions

Screener

- Took the lead (How?), goal-directed talk, requests, declarative statements, Yes-No questions; initiated topic shifts

Parents

- Followed the lead of the screener (How?); shorter conversational turns, acknowledgment tokens, few initiations, few questions

Lori: What we're looking for. >We're gonna put some sounds in her ears< and we're looking for -- >it's called an emission but it's< like an ↑e:cho:=

Janice: Okay.

Lori: =>In response to that sound.< And it comes from her inner ear.

Janice: Okay.

Lori: And what we know about the inner ear is that when we hear that echo coming back out, it's healthy. It means that it's working properly and that she's hearing the sound.

Janice: Okay.

Lori: Okay. And we test at three different pitches or to:nes.

Janice: Okay.

Lori: Okay. And that's why we... you know, it is just a screening. We're not testing at <every (.) conceivable, audible sound.>

Janice: Okay.

Lori: But we're testing the important frequencies for speech perception. So. ↑Okay. And we need to do bo:th ↑ea:rs.

Hierarchy of modalization

- X
- X is a fact
- I know that X
- I claim that X
- I believe that X
- I hypothesize that X
- I think that X
- I guess that X
- X is possible

Lori: What **we're** looking for. >**We're** gonna put some sounds in her ears< and **we're** looking for -- >**it's called an emission** but it's< like an ↑e:cho:=

Janice: **Okay**.

Lori: =>In response to that sound.< And it comes from her **inner ear**.

Janice: **Okay**.

Lori: And **what we know** about the inner ear is that when **we** hear that echo coming back out, it's healthy. **It means that it's working properly** and that she's hearing the sound.

Janice: **Okay**.

Lori: Okay. And **we test** at three different **pitches** or **to:nes**.

Janice: **Okay**.

Lori: Okay. And that's why **we**... you know, it is just a screening. **We're** not testing at <every (.) conceivable, **audible** sound.>

Janice: **Okay**.

Lori: But **we're testing** the important **frequencies** for **speech perception**. So. ↑Okay. And **we** need to do bo:th ↑ea:rs.

How was the discourse constructed?

Screener Talk

- Factual accounting conveyed a sense of confidence and certainty; indicated lack of personal stake or interest in claims made; could remove self from her talk with parents; could build up facticity of accounts

Parents' Talk

- Put forth claims and supported them through various devices; indicated personal stake and interest in claims

Discourse Constructions: A Few Examples

Screener: Factual Accounting

- Detail in terms used
- Systematic vagueness
- Consensus and corroboration
- Distanced footing
- Empiricist accounting
- Minimal narrative
- No doubt markers

Consequences

- **less refutable;**
- **less amenable to questioning**
- presented information as **"facts"; "objective"**

Parents: Personal Accounts

- Narrative accounting and detail
- Close footing
- Active voicing
- Extreme case formulations

Consequences

- more **open to questioning**
- **personal stake** indicated
- may not be viewed as "objective"

Construction of a "Pass" Result

Screener's Versions

- Pass as an indication of physiologic response and biological functioning
- Pass as one of two options on the handheld screen device indicating detection of emission or echo (fit with certain criteria)
- Pass as ability for infant to hear sounds, such as the sounds of speech (speech perception)

Parents' Versions

- Pass means my child can hear.
- Pass means my child has normal hearing.
- Pass means I don't need to come back here for more testing.

Construction of a "Refer" Result

Parents' Versions

- Associated with infant's ability to hear and the possibility of a hearing loss
- Linked with the infant's observable behaviours in response to sounds

Screener's Versions

- A number of factors of the screening environment may have influenced the result
- Fluid or vernix in the ear
- Does not mean that the infant is deaf

Social Implications of the Interactions

- *Screener*: Finding Balance; Required Responsibilities; Accomplishing the screening.
- *Parents*: Unvoiced concerns and unasked questions.
- *Competing versions* (e.g., referral as a "double bind;" Chenail et al., 1990).

Talking about a "refer" result

Interviewer: And so that day the result was- what was the result exactly?

- A) Parent: *All she said [was] that he had **failed**.*
- B) Parent: … *Because it was the one side that **failed**, and not just- not both sides, or anything like that.*
- C) Parent: *U:m:, I think I was just glad to hear that, that the test came back, you know he passed it- in- in the ear that **failed** beFO:RE so…*

Possible Social Influences on the Interactions

- Screening embedded within a biomedical framework; instrumental prioritized over interpersonal (Walker et al., 2001)
- Screening Framework - guidelines and recommendations; less focus on process and desired outcomes for the interaction

Variation in Discourse

- Accounts of screen results varied depending upon factors such as:
  - conversational partner
  - timing during interaction
  - nature of the conversational turn

Implications

- May help to inform the development of family-focused services in newborn hearing screening programs:
  - Parent-centered screener talk (see Street, 1991; Street & Millay, 2001)
  - Inviting discussion of parents' unvoiced concerns
- May help to improve follow-up of parents and their infants to subsequent stages of screening and diagnostic testing

Implications (continued)

- May indicate the importance of attending to the *process* of screening in more depth rather than predominately on outcomes
- May contribute to theories of meaning construction through its emphasis on social contexts and their influence on screener-parent interaction and language use
- May inform theories of curriculum development for training screeners UNHS programs

References

Chenail, R. J., Douthit, P. E., Gale, J. E., Stormberg, J. L., Morris, G. H., Park, J. M., Sridaromont, S., & Schmer, V. (1990). "It's probably nothing serious, but…": Parents' interpretation of referral to pediatric cardiologists. *Health Communication, 2*(3), 165-187.

Jefferson, G. (1985). An exercise in the transcription and analysis of laughter. In T. Van Dijk (Ed.), *Handbook of discourse analysis* (Vol. 3). London: Academic Press.

Joint Committee on Infant Hearing. (2000). Year 2000 position statement: Principles and guidelines for early hearing detection intervention programs. *American Journal of Audiology, 9*, 9-29.

Potter, J., & Wetherell, M. (1987). *Discourse and social psychology*. London: Sage.

Street, R. L., Jr. (1991). Information-giving in medical consultations: The influence of patients' communicative styles and personal characteristics. *Social Science and Medicine, 32*, 541-548.

Street, R.L., Jr., & Millay, B. (2001). Analyzing patient participation in medical encounters. *Health Communication, 13*(1), 61-73.

Walker, K. L., Arnold, C. L., Miller-Day, M., & Webb, L. M. (2001). *Health Communication, 14*(1), 45-68.

Considerations for Training

- Encourage screeners to reflect upon their own use of language with parents and consider their potential effects on parents.
- Consider the various **versions** of screening results that are possible, their dynamic nature, and their contexts.
- Consider incorporating **family-centered** approaches into screening environments.
- Training screeners with the perspective of **interaction** – co-construction – rather than a one-way transmission of information from screener to parent.

HELP's Vision

"To create, promote and apply new knowledge through leading interdisciplinary research to help children thrive."

Thank you!

HELP's website:
www.earlylearning.ubc.ca

Limitations of the Study

- Lack of diversity in talk of participants who differed in age, ethnicity, and degree of hearing loss
- Lack of diversity of types of screening interactions observed (e.g., all Stage Two, similar types of screening procedure)
- Issues of reactivity