

Maternal Strategies During Parent-Child Free Play: Effect of Child's Hearing Status



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Introduction

Hearing loss affects 2-3 children per 1000 (White, 2004).

Children with hearing loss are at risk for a variety of language and psychosocial outcomes (Laugen et al., 2016).

To explain the variability in language outcomes for children with hearing loss, several factors have been identified:

- Age at amplification (Niparko et al., 2010)
- Age when early intervention begins (Yoshinaga-Itano, 2003)
- Amount of residual hearing (Niparko et al., 2010)

With emphasis on early intervention following adoption of universal newborn hearing screening, malleable factors have also been studied, including **quality of parent-child interaction** (Cruz et al., 2013; Quittner et al., 2013).

Research has compared the quality of interactions between mothers with normal-hearing (NH) children and mothers with children who received cochlear implants (CI).

- Mothers may be more directive and less synchronous when interacting with children with CIs (Fagan et al., 2014).

The functional nature / content of these interactions has not yet been explored. That was the focus of this study.

Research Question and Hypothesis

Research Question:

How do parents adapt their play behaviors during free play sessions to reflect children's newly-acquired access to sound following cochlear implantation?

Two Possibilities:

A. Mothers will engage in more dyadic play, focusing on songs and games that emphasize interpersonal timing and back-and-forth exchanges that is typical of *early* interactions among mothers with NH peers.

B. Mothers will engage in similar levels of different kinds of play, adapting to their child's social, cognitive, and motor skills on par with their NH peers.

Methods

Participants

Children with Cochlear Implants (CI)

- N = 10, 6 female
- Mean chronological age = 20.4 months
- All children participated 6 months after device activation

Children with Normal Hearing (NH)

- N = 8, 4 female
- Matched on chronological age to CI sample

Method

Free Play paradigm

- Mother-child dyads played freely in lab for ~5 minutes.
- Common set of toys provided: soccer ball, stuffed dog, button

Object Play Coding Scheme (see Figure 1)

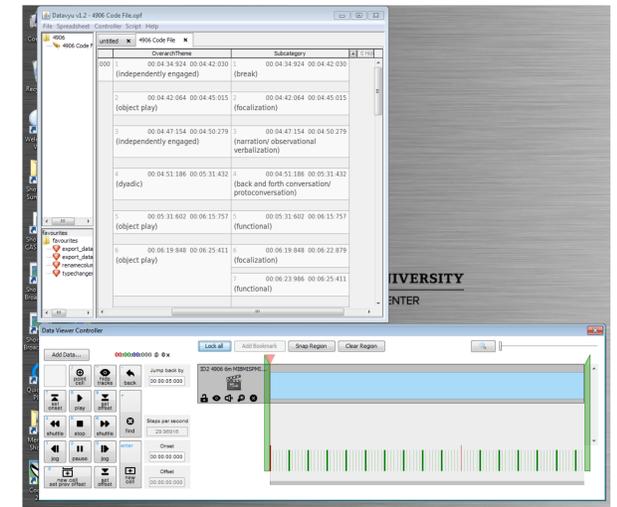
- Adapted from Bakeman and Adamson (1984) and Labrell (1996)
- Codes analyzed from the perspective of the *mother*
- Mutually exclusive categories with subcategories within each

Code	Description
Object Play	interaction includes mother, baby, and third object
Focalization	mom focuses baby's attention on object
Functional	mom manipulates correctly object
Relational	mom uses together different types of objects
Creation	mom uses object in nontraditional way
Recreation	mom uses objects to interact physically with child
Dyadic Play	interaction includes mother and baby only
Gross Motor Movement	mom initiates or encourages movement of baby
Song	mom sings to baby
Peek-a-Boo	traditional game
Tickling	traditional game
Affection	hugs or kisses between mom and baby
Protoconversations/ Back and Forth	
Conversations	conversations between mom and baby
Imitation	mom reenacts action/ speech of baby
Not Otherwise Specified	allows for variation between family play styles
Independently Engaged	lack of interaction from mother
Break	break in play episode
Set Up	setting up play area
Episodes of Narration	mom narrating child's play
Adult Intervention	mom soothes child during distress
Addressing Distress	while child is in distress
Adult Interruption	adult intervene's with child's actions
Infant Care	examples include blowing nose or managing a spit up
Repositioning Baby	directs or physically changes baby's body
Prohibition	addressing baby's behavior due to concern of action

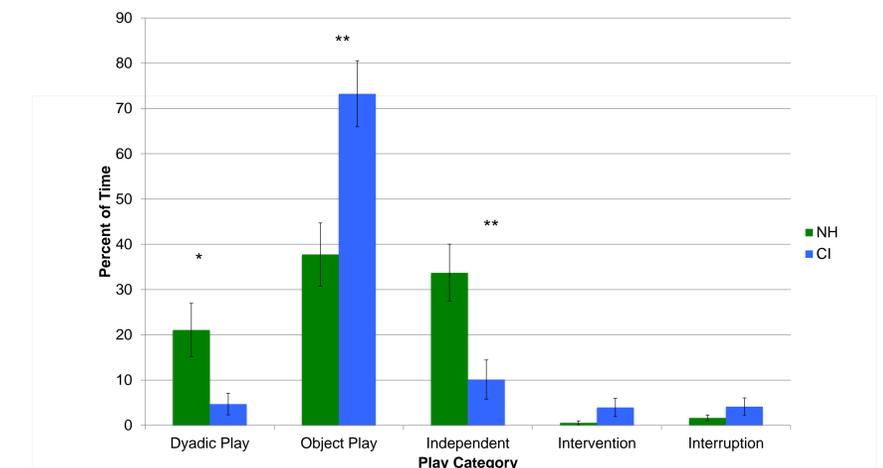
Figure 1. Object Play Coding Scheme

Offline Coding in Datavyu

- Intra-rater reliability > .97
- Datavyu allows for nested coded in different columns



Results



Discussion

Contrary to hypotheses, mothers with children with CIs spent a significantly **greater** proportion of time in object play than mothers of NH children.

Next Steps

- Examine relations between maternal play strategies and children's later language outcomes
- Explore differences in how mothers differ in use of various subcategory play behaviors
- Code play of mothers with NH children who are matched on hearing-experience (e.g., 6-month-old NH children)
- Investigate how child factors influence maternal play strategies (e.g., language, attention)