

Social Emotions in Deaf Children with a CI Between One and Five Years of Age

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Introduction

Learning when and how to express social emotions (e.g., shame, pride, empathy) is essential to adequate social-emotional functioning. Deficits in these areas are associated with an increased risk for externalizing behavioural problems (Ferguson et al., 1999). Although all three emotions aim at strengthening group cohesion and cooperation, shame, pride, and empathy serve different functions. The expression of shame signals the acknowledgement of a norm violation and the need to appease the person whose feelings might have been hurt (Barrett, 2005). Pride occurs when you have met or exceeded expectations, which involves the need to evaluate one's own performance against the group's standard. The expression of pride draws attention to the performance and could reinforce or improve one's position in a group through positive evaluation by others (Tracy & Robins, 2004). Empathy refers to the ability to respond adaptively to another person's needs, e.g., by providing consolation, help, or support (Decety & Jackson, 2004). Different levels of empathy can be distinguished. The levels that can be identified in one- to five-year-old children are: emotional contagion (i.e., taking over the emotion of the other person), attention to other people's feelings, and prosocial behaviour.

Social emotions can be learned through direct feedback from adults and through observing others. The question is, however, if children with a CI (Cochlear Implant)

have access to the social world to the same extent as hearing children. The literature shows that parents of deaf children (without a CI) explain less than parents of hearing children (Vaccari & Marschark, 1997), and that deaf children (without a CI) exhibit more social-emotional difficulties than hearing children (e.g., Rieffe & Meerum Terwogt, 2006). To date, little is known about the effect of wearing a CI on social-emotional functioning. This study examined the extent to which children with a CI expressed social emotions compared to hearing children.

Method

Participants and procedure

A sample of 14 Dutch children with CI (mean age = 39 months, SD = 10 months), all aged between 1 and 5, were matched on age and gender to 28 Dutch hearing children (mean age = 39 months, SD = 11 months). Mean age at implant of the (first) CI was 14 months (SD = 7 months). The tasks were administered in a one-to-one situation. Parental consent was obtained for all participants.

Instruments

In the *Broken Car Task*, children were presented with a toy car which had been modified so that the wheels would fall off while the children were playing with it. Behavioural reactions to this shame-evoking event were observed and scored on a 4-item checklist. The internal consistency of the scale was good (Cronbach's Alpha = .69).

In the *Copy Task*, participants were asked to copy a drawing of a moon (difficult task). Regardless of their performance, they were given negative feedback by the experimenter. Next, the children were asked to copy a straight line (easy task) and were praised afterwards. Responses after the negative feedback were observed and scored on the scale 'Shame' (4-item checklist), responses after positive feedback were scored on the scale 'Pride' (4-item checklist). Both scale showed good psychometric properties (Cronbach's Alpha .66 and .73 respectively).

In the *Bottle Task*, the experimenter opened and closed a bottle in the presence of the child and then asked the child to open it. Children were unaware the bottle had been equipped with a safety lock which prevented them from opening it. The experimenter scored the children's behavioural reactions while they were trying to open the bottle on a 5-item checklist designed to measure shame. After 60 seconds, the experimenter opened the bottle a little and asked the child to try opening it again. Children were praised upon opening the bottle. Behavioural reactions were observed and scored on a 4-item checklist designed to measure pride. The internal consistencies of the scales were good (Cronbach's Alpha's .75 and .73 respectively).

The *Empathy Task* measured children's responses to three emotions that were acted out by the experimenter (happiness, pain/sadness, and anger). After each acting-out performance, the experimenter scored the children's behavioural reactions on a checklist, consisting of the scales: 'Emotional Contagion' (9 items), 'Attention to Others' Emotions' (6 items), 'Prosocial Behaviour' (7 items). The internal consistencies of the scales Emotional Contagion and Attention to Others' Emotions were

good (Cronbach's Alpha .76 and .63 respectively). The scale Prosocial Behaviour showed somewhat lower psychometric properties (Cronbach's Alpha .56).

Results

A MANOVA showed a main effect of shame, $F(1,27) = 4.51$, $p = .04$. The hearing group showed more shame behaviours than the CI group (Table 1). A MANOVA showed no significant main effect for pride, $F(1,32) = 2.44$, $p = .13$. Both groups demonstrated equal amounts of pride behaviour on both tasks (Table 1). A MANOVA showed no significant main effect for empathy, $F(1,39) = 0.11$, $p = .74$. The CI group showed empathy to the same extent as the hearing group (Table 1).

Discussion

First of all, it is important to note that the number of participants was small in both the CI group and the hearing group. Therefore, all outcomes presented here are preliminary and should be interpreted with caution. Data collection is still proceeding.

These preliminary findings provide an optimistic view on CI children's ability to show social emotions. Pride, an emotion that signals that you understand what is (socially) desirable behaviour, was shown to the same extent by children from both groups. Children with a CI also showed empathy, concern for another's emotion, equally often as the normally developing hearing children.

Shame, however, an emotion that is used to signal to the social environment that you understand you have violated a social norm, was shown less frequently by CI children than by same-aged hearing children. Possibly, parents of CI children are less demanding in this respect, due to their stronger consideration for the special needs of their child.

Nevertheless, the study showed some very encouraging outcomes, which seem to confirm that CI children can take part in social interactions on a level that is comparable to their hearing peers.

TABLE 1
MEAN SCORES ON SHAME, PRIDE, AND EMPATHY TASKS PER GROUP

		CI	Hearing
Shame*	Broken Car Task	.21 (.28)	.43 (.37)
	Copy Task	.21 (.21)	.55 (.40)
	Bottle Task	.27 (.34)	.41 (.40)
Pride	Copy Task	.44 (.36)	.62 (.47)
	Bottle Task	.48 (.59)	.79 (.42)
Empathy	Contagion	1.05 (.47)	.82 (.38)
	Attention	1.75 (.32)	1.74 (.34)
	Prosocial	.27 (.31)	.42 (.35)

* $p < .05$

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