Input and interaction in deaf families
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3 RESEARCH QUESTIONS

In Chapters 1 and 2 we discussed the role of linguistic input and interaction in situations of normal and exceptional language acquisition and the language use in deaf families. From the literature it is clear that quantity and quality of input can be relevant for the child's acquisition. In a bilingual situation there are additional aspects of input that are relevant. In deaf families the situation is again a special one and raises many interesting questions. This study will examine the situation for deaf families in the Netherlands.

The research questions can be divided in five main areas which will all be examined in the input of the deaf mothers and in the production of the deaf and hearing children:

1. The amount of language produced in total, and which languages are produced (section 3.1)
2. The accessibility of the language production for the conversational partner (section 3.2)
3. The vocabulary and the separation of languages (section 3.3)
4. The functions expressed (section 3.4)
5. The structures that occur (section 3.5)

The analyses related to these areas were carried out with data collected over a two year period at half year intervals (ages 1;0, 1;6, 2;0, 2;6 and 3;0 of the children). Individual development will be traced (intra-subject comparison) as well as group development. This developmental aspect is not explicitly formulated in each research question to avoid being repetitive. Furthermore comparisons will be made between the deaf mothers in interaction with their deaf children and with their hearing children and also between the deaf and hearing children (inter-subject comparisons). Further general aspects of design are addressed in Chapter 4. Specific aspects of methodology are presented in the relevant sections in Chapters 5 to 9.

3.1 Quantity of language and language choice

Question 1A

Do the mothers offer a total amount of language input to their child that is comparable with the average amount offered to deaf and hearing children as established in other research?

We expect that the deaf mothers will offer their children input comparable to the amount of language offered by deaf mothers to deaf or hearing children.
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Question 1B

How much language is produced by the children?

Question 2

What is the contribution to the conversation of the deaf mother on the one hand and her child on the other? In other words is the conversation carried equally by both conversation partners?

We might expect that the children contribute half of the conversation, but it is not exactly clear at what age this might be expected.

Question 3A

What are the proportions of different language modes in the total input?

Although there is little information on the exact input to deaf and hearing children, we might expect the deaf mothers to mainly offer SLN to their deaf children and SLN and NL to their hearing children. However, some mixed signed and spoken input is also to be expected.

Question 3B

What are the proportions of different languages in the output of the children?

Question 4

Do the deaf and hearing children reflect their mother's language choice in their language production?

We expect the deaf children to use mainly SLN; for the hearing children we predict a focus on spoken language (Mayberry 1976).

The results related to these questions are presented in Chapter 5.

3.2 Language accessibility

Question 5

Is the linguistic input offered to the children actually accessible, i.e. can signs and words be seen by the deaf children or seen or heard by the hearing children?

We assume that the deaf children will have visual access to most of the mothers' utterances; we have no information on which we can base a prediction as to how accessible the input (whether spoken or signed) is to the hearing children.

We also want to find out in what way(s) the deaf mothers ensure that the deaf and hearing children actually have access to the linguistic input that is offered to them, and formulated the following questions.
Question 6  
What strategies are used by the deaf mothers to gain or hold the attention of their deaf or hearing child?
We could expect that as the children grow older the mothers will need to attract their children's attention explicitly less often as the children develop appropriate attention-giving behavior.

Question 7  
Is there a relation between strategy used and consecutive language choice of the deaf mothers?

Question 8  
Is there a relationship between the attentional strategies used by the deaf mothers and the attention-giving behavior of their deaf or hearing child?
As deaf mothers are reported to 'train' the visual attention of their children, we might expect that the children's visual behavior changes over time, which in turn will influence the use of attentional strategies by the mothers.
Do the deaf and hearing children show awareness of the fact that their mother is deaf and therefore has to pay visual attention both for signed and spoken utterances in order to be able to perceive them?

Question 9  
Is the linguistic production of the deaf and hearing children accessible to their deaf mother?

Question 10  
Do the children take care that their mother can see their signs and/or words, and if so, how do they ensure visibility?
We can make no prediction for the visibility of the children's utterances to the mothers. We expect the children to show awareness for the necessity of visibility of their language production from 2;6 on.

Question 11  
Do the hearing and deaf children produce words with or without voice?
This aspect reflects the children's awareness of accessibility of speech for the mothers.

Question 12  
To what extent is it necessary for the mothers and the children to focus on one or more channels (signing/speaking), in other words how are propositions in the input and output distributed over the two channels?
If propositions are distributed over two channels in one utterance, then this is evidence for simultaneously signed and spoken utterances functioning as a third system.
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Question 13

Is there a relationship between the quantity of input of the deaf mothers and the development of the attention-giving behavior of the children?

The results related to these questions are presented in Chapter 6.

3.3 Lexical issues

In order to obtain a general view of the vocabulary produced by the deaf mothers and the children we looked at the following aspects.

Question 14A

How are deictic and representational symbols used and combined in the input?

Question 14B

When do deictic and representational symbols appear and when are they combined in the output of the children?

Question 15

How often are nouns used relative to verbs in the different languages in the input of the deaf mothers and in the output of the children?

Question 16

What is the variability in vocabulary in signs and words measured in proportion of different types in the input of the mothers and in the output of the children?

Question 17

Is there lexical evidence in the input of the deaf mothers and in the output of the children for the use of separate languages?

The results related to these questions are presented in Chapter 7.

3.4 Functional aspects

It has been observed in earlier studies by amongst others Kyle et al. (1987) and Gregory and Barlow (1989) that functionally the language offered by deaf mothers to their children seems to differ from the language offered by hearing mothers to their hearing children. This may have its influence on the language acquisition of the children. In order to see whether this is true for our subjects we formulated the following questions.
Functional aspects 39

Question 18
What is the proportion of utterances with a declarative, interrogative and imperative function in the input of the deaf mothers and in the output of the children?

Question 19
How are affective propositions expressed by the deaf mothers? Are they expressed by the children and if so, how?

Question 20
Is there functional evidence for the separation of languages in the input and the output?

The results related to these questions are presented in Chapter 8.

3.5 Structural aspects

A description of the linguistic structures used in the input and output is an important source of information on the possible relation between the input and the language development of the children.

Question 21
What is the length of the language input of the deaf mothers and the output of the children, measured in Mean Length of Utterance (MLU) and MLUL10 (Mean Length of 10 Longest Utterances) in signs and/or words in the different languages?

Question 22
How many verbs are produced in the input and the output in the different languages?

Question 23
What arguments are realized in the different languages in the input and in the output?

Question 24
What is the position of the verbs in the different languages, both in the input and in the output?

Question 25
Are the verbs that are produced inflected and if so, are they inflected as expected in the different languages, both in the input and in the output?
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Question 26
Are non-manual grammatical sentence markers 'q, 'wh-q' and 'neg' used in the input and the output?

Question 27
Are plural and diminutive markers, and markers on adjectives (correctly) used in the input and the output?

Question 28
What sign and word types are used besides nominals, verbs and adjectives, both in the input and the output?

The results related to these questions will be presented in Chapter 9.