Nauwelijks sprekend veel te zeggen. Een studie naar de effecten van het COCP-programma
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SUMMARY

BARELY SPEAKING -
A LOT TO SAY

A study on the impact of the COCP-programme

This dissertation reports on a longitudinal study of the impact of the COCP-programme on the communicative development and language acquisition of three hardly or nonspeaking children. COCP stands for Communicative Development of barely or nonspeaking children and their Communication Partners.

The first chapter introduces the target group of the research project: children who, as a result of congenital neurological impairment (cerebral palsy), do not have sufficient speech skills to meet their communication needs. This is a relatively small and extremely heterogeneous group of children who differ strongly with respect to the nature and severity of their neurological disorders. During the past decennia the interest in Augmentative and Alternative Communication (AAC) as a technique for the encouragement of communication has grown rapidly. AAC is characterised by the use of all available communication modes (e.g. speech, gestures/signs, selection of graphic symbols, eye movements) so that they reinforce each other in the process of communication. In the Netherlands, nonspeaking children receive training in the use of augmented communication modes in rehabilitation centres or schools for special education. However, research and clinical observation have shown repeatedly that this training practice rarely leads to improved communication in daily social interactions. The COCP-programme was developed to optimise this type of communication between nonspeaking children and their daily interaction partners (parents, caregivers, teachers, therapists).

Chapter 2 starts with a short review of the most important theories on language acquisition. It is postulated that early parent-child interaction and communicative development during the first years of life form the basis for actual language acquisition: the acquisition of lexical and grammatical knowledge of the spoken language and the acquisition of symbolic skills in other, nonvocal communication modes. The importance of a multimodal perspective for the study of nonspeaking children's communication is emphasised. This implies that all potential communication modes are included in the research analyses. The remainder of this chapter presents an overview of the early communicative development and the acquisition of symbolic and linguistic skills in speaking as well as nonspeaking children. The interaction between parents and
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young nonspeaking children must overcome more difficulties than the interaction with nonhandicapped children and there is a serious risk that the communicative development will come to a standstill. The two most important factors that may cause this stagnation are the interaction style of the adult communication partners and a lack of adequate means for the children to express themselves. In general, adults show a lack of responsiveness to the communicative attempts of the child and do not create enough opportunities for the child to communicate, e.g., they do not allow the child enough time to react or to initiate. In many situations the children do not have adequate communication aids with a vocabulary suitable for the situation at hand.

In Chapter 3 the COCP-programme is introduced. In this intervention programme the communication partners of nonspeaking children receive individual and group instruction and coaching in order to optimise the adult-child interaction and to create a sound basis for the communicative and linguistic development. The ultimate goal is that the child learns to communicate clearly and effectively in different situations and with various conversation partners. The communication partners learn how to create opportunities for the child to (learn to) communicate and how they can make communication accessible for the child. The child is provided with an individual communication system and the communication partners learn to adapt their own interaction behaviour and to model the use of augmented modes and systems.

Chapter 4 begins with the formulation of the research questions and hypotheses of the intervention study. The first main question addresses the symmetry of the conversational patterns in the interaction, that is, the distribution of communicative turns and topic introductions between adult and child. The second main question focuses on the development of linguistic skills in the subjects of the study and involves an analysis of the communication modes in the adult language input and in the child’s language production.

Since the target population is relatively small and extremely heterogeneous, a longitudinal within-subject design was chosen for this study. Three nonspeaking girls with cerebral palsy participated: Karen, Laura, and Yvette. At the start of the data collection these children were, respectively, 2;11, 2;4 and 2;6 years of age. In a period of two years and nine months in total, video recordings were made every two months in the home environment with the mother and in the rehabilitation centre with a group leader (the same for all three children). Despite the lack of a control group, the large number of measurement points made it possible to draw conclusions regarding the impact of intervention. The actual analysis of the conversational patterns and communication modes took place on the basis of transcripts of video samples of five minutes in length. The interjudgement reliability of the transcription as well as the analyses proved to be entirely satisfactory.
Chapter 5 presents the results of the first research question: the *conversational patterns*. The conversational patterns were analysed for the adult communication partners with respect to **effective pausing** (a pause is considered to be effective if it is followed by communication from the child) and **responsiveness** (responding adequately to the communicative behaviour of the child). For the children the analysis of conversational patterns concentrated on **turn taking** and **topic introduction**. It was hypothesised that the children would take more communicative turns, when the adults more often wait long enough for the children to communicate (effective pausing). It was also expected that, as a result of the instruction, the adults would become more responsive and that this would lead to an increase of topic introductions by the children (initiatives).

The results of the analysis indicate that the communication partners of Laura and Yvette indeed showed an increase in effective pausing behaviour and responsiveness after intervention. These changes proved to be statistically significant. Both children showed a significant increase in communicative turns, while Yvette also produced more topic introductions after intervention. The distribution of turns and topic introductions between child and adult became much more equal and these changes were significant as well. Although the communication partners of Karen gave her ample time to communicate and were fairly responsive, the fine-tuning between child and adult remained very difficult. Even though Karen communicated slightly more and responded more often to the communication of her partner at the end of the study, these small changes were not significant.

In Chapter 6 the results of the second research question are presented: the *communication modes*. It was expected that as a result of the intervention the adults would use more nonvocal modes in order to demonstrate the children how they could use AAC. This hypothesis was confirmed for all adult conversation partners. With regard to the children, it was hypothesised that they would show an increase in their production of **representational symbols** (symbols representing stable referents that do not change with the context), as well as **complex propositions** (a proposition is considered to be the basic semantic unit). A significant increase in representational symbols was found for Yvette and a significant increase in complex propositions for Laura. From the beginning of the data collection Karen infrequently produced representational symbols and occasionally a complex utterance. She showed hardly any development in these aspects.

Chapter 6 continues with a description of the *multimodal constructions* and the relative contribution of each communication mode to the proposition as a whole in these constructions. One mode may express the proposition **fully**, **support** the content already expressed by another mode, or **complement** the content expressed by another mode. Constructions in which one mode expresses the content fully and another mode overlaps (part of) the content (i.e. supportive use) occurred most frequently with all three children.
Chapter 7 describes the relationship between the results of the two preceding chapters and establishes relationships with other data collected within the framework of this research project. First, it examines to what extent the results of the interaction analyses justify the conclusion that the individual intervention goals set in the COCP-programme were achieved.

Second, it provides a detailed discussion on the relationship between changes in the adult communication partners and changes in the children with respect to conversational patterns. The results of the sequential analyses carried out show that the observed increase in responsiveness of the adults applies especially after initiating behaviour of the children. Laura and Yvette in particular are more successful in introducing new conversational topics after intervention. This result is also connected to the finding that the adults tend to initiate fewer topics themselves and provide more opportunities for the children to introduce topics, for example by allowing them more time.

Finally, an attempt is made to relate the results of the impact study to data on the cognitive and language comprehension levels of the three children. These were collected every four months in the course of the project. With all three children cognition and language comprehension seem to develop simultaneously with the development of productive communicative and linguistic skills. Karen showed hardly any progress, while the pace of development in Laura and Yvette - despite an absolute delay in level compared to their peers - seems to be adequate for their age in all areas.

In the closing chapter of the dissertation attention is paid once more to a number of methodological aspects. A great effort had been made to deal with the inevitable pitfalls of this kind of study: the limited size of the research sample, the choice of investigating the impact of the COCP-programme as a whole rather than the effects of distinctive components, the data collection in real life interaction situations, and the focus on indirect effects of the intervention (influencing the behaviour of the children through changes in the interaction style of their communication partners). The threats to internal validity were in this way reduced as far as possible.

The results regarding the conversational patterns and communication modes are then linked to the hypotheses formulated in Chapter 4. As stated before, no impact of the COCP-programme could be demonstrated for Karen. This is possibly due to the level and very slow rate of her overall cognitive development. More plausibly, however this result can be explained by the fact that she has development disorders within the autistic spectrum. To date, it has become clear from clinical practice that the COCP-programme is likely to lead to an improvement of communication skills in children as well as adults with moderate to severe mental retardation. With regard to the other two subjects, Laura and Yvette, the conclusion is drawn that they clearly benefited from the programme. As a result of the intervention programme both children com-
municate more and introduce more topics. They contribute more to the con-
versation, their influence on the content of the communication has noticeably
increased, and they show more linguistic skills.
New in this study was the multimodal perspective that resulted in a detailed
description of the multimodal communication of nonspeaking children and
the multimodal language input of their adult communication partners. This
description offers many leads for further research.