Summary

Children who experience severe and pervasive social and communicative problems can be classified as having a Pervasive Developmental Disorder (PDD, DSM-III-R, 1987). In its most serious form, these problems fit the diagnostic category Autistic Disorder (DSM-III-R, 1987). However, a group of children does not meet the criteria for Autistic Disorder, but experiences a common and core problem, namely the inability to interact with people in a reciprocal way. These problems may be classified as 'Pervasive Developmental Disorders Not Otherwise Specified' (PDDNOS, DSM-III-R). However, for this remainder category, no explicit and positively formulated diagnostic criteria are available.

The social and communicative problems of children with Autistic Disorder have been explained in terms of underlying social-cognitive problems, namely an inability to attribute and understand mental states (e.g. beliefs or intentions) of other people. Several authors have extended this hypothesis to children with non-autistic PDD's (Minderaa, 1990; Gillberg, 1991). The aim of the research project described in this thesis is to explore if children diagnosed as having a PDDNOS have less optimal social-cognitive abilities. Such studies may contribute to the formulation of more explicit criteria for adequately diagnosing these children (Chapter 1).

Chapter 2 describes developments in the classification of Pervasive Developmental Disorders and discusses several disadvantages of the 'categorical' approach to diagnosing PDD. It is suggested that research data concerning non-autistic PDD groups could be integrated using an approach which is 'dimensional' rather than 'categorical'. Several developmental domains were described in which children with PDD generally experience problems. The different clinical groups which may meet the very global DSM-III-R criteria for PDDNOS were characterized in terms of problems on these different domains.

Chapter 3 discusses theories on children's social and social-cognitive development. Two broad theoretical approaches to cognitive development in general can be distinguished. The representational approach explains children's cognitive development in terms of the development of mental representations.
The interactional/transactional approach stresses the importance of social interaction for the development of cognition. A number of more specific, social or social-cognitive theories or models are discussed which are characteristic of each approach. These theories or models are evaluated in terms of their ability to describe and explain the social and social-cognitive problems of children with PDD. The Theory-of-Mind theory (i.e. representational approach) characterizes the social and communicative problems of PDD children in terms of underlying problems in mental representations of the mind. Hobson’s ‘affective’ theory provides a complementary view because he describes the interactional processes which are thought to be essential for the development of adequate knowledge of the mind (i.e. interactional approach). These theories predict that children with PDD have problems in the perception of the emotional states of others (affective theory) and lack adequate Theory-of-Mind skills (Theory-of-Mind theory).

These global hypotheses are further specified in chapter 4 on the basis of a review of studies on emotion perception abilities and Theory-of-Mind skills of children with PDD. Expectations are formulated with respect to the above abilities of normally intelligent children with PDDNOS.

Two studies, each consisting of different experiments, are described in this thesis. The first study used two different tasks to investigate Theory-of-Mind abilities in a group of normally intelligent, 7 to 12 year-old children with PDDNOS. For comparison purposes, a group of normal, healthy children of the same age and sex was included. Chapter 5 describes an experiment in which the PDDNOS children were compared with the control children on three different emotional role-taking tasks. In these tasks, children had to use person-specific information to make an inference about another child’s emotional reaction and behaviour. Significant differences were found between the PDDNOS group and the control group: the PDDNOS children performed worse on all three role-taking task. However, the differences on one of these tasks could be completely explained by intelligence differences between the two groups. On the other tasks, differences could not or could only partially be explained by intelligence differences.

The experiment described in chapter 6 investigates differences in person-perception abilities in the above groups. Person-perception, a social-cognitive skill, concerns the way in which children conceptualize other people, their intentions, attitudes, behaviour and their perception was investigated in the child was asked to use more peripheral cues to describe another person. Differences in intelligence a specific social-cognitive skills were used as in the standardization of the sub-samples selected, and the clinical intelligence. The experimental children with PDDNOS were used as in the selection of the control group. The social and communicative differences in intelligence were used as in the in sub-sample of the matched sub-sample of the control group.

Chapter 8 describes the above groups of normally intelligent children with PDDNOS characteristics (e.g. matching). Chapter 7 describes the skill spontaneously emerging. However, when children seemed to be as able to provide information they had not provided it spontaneously. Psychological characteristics of these features when the hypothesis that normal...
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The importance of social perception of more specific, discussed which are models are evaluated in social-cognitive and communicative problems in mental theory provides a mental states of others (Theory-of-Mind chapter 4 on the basis Theory-of-Mind skills respect to the above subjects, are described in investigate Theory-of-Mind skills year-old children with healthy children of the experiment in which control children on three children had to use about another child’s differences were found between children performed differences on one of these differences between the nor could only partially differences in person-directed, a social-cognitive explanation other people, their intentions, attitudes, traits and emotions (central), as well as their overt behaviour and their physical characteristics (peripheral). In this study, person-perception was investigated by means of a free-person description, in which the child was asked to describe another person. The children with PDDNOS used more peripheral and less central statements than the control group to describe another person. However, these differences seemed to reflect differences in intelligence between the two groups, rather than differences in a specific social-cognitive skill.

A second study investigates both Theory of Mind (chapters 7 and 8) and emotion perception abilities (chapter 9) in a group of 6 to 12 year-old, normally intelligent children with PDDNOS. Although roughly the same tasks were used as in the first study, improvements were made with respect to standardization of the materials and the procedure. New subject samples were selected, and the clinical and the control groups were carefully matched for intelligence. The experiment presented in chapter 7 re-examines the ability of children with PDDNOS to infer emotions of other people on the basis of person-specific information, in comparison with the ability of normal children to carry out these social-cognitive inferences. No significant differences emerged. However, when only those PDDNOS children with the most severe social and communicative problems were selected and compared with a matched sub-sample of the control group, some differences in the ability to explain emotions were found.

Chapter 8 describes a further study of the person perception abilities of the above groups of children. It aimed to investigate whether normally intelligent children with PDDNOS lack the skills to infer ‘inner, psychological’ characteristics (e.g. mental states) of other people, or whether they fail to use this skill spontaneously. The children with PDDNOS were compared with the control children with respect to their performance on the ‘free person description’. The subjects were asked spontaneously to describe two other children. Interview questions were added to test whether children were able to provide information about psychological characteristics even though they had not provided it spontaneously. The children with PDDNOS used fewer psychological characteristics than the control children to describe others, but they seemed to be as able as the control children to provide information about these features when they were explicitly prompted. This study supports the hypothesis that normally intelligent children with PDDNOS might have
adequate Theory-of-Mind skills, but fail to use these skills spontaneously. These results are in line with other studies on Theory-of-Mind abilities of higher functioning children with autism or autistic-like problems.

In the study presented in *chapter 9*, the children with PDDNOS were compared with the control children with respect to their performance on three sub-tests of a standardized test for non-verbal communication. These sub-tests measured children’s ability to recognize four basic emotions in different expressive modalities (i.e. facial expressions, bodily postures and gestures). No significant differences were found between the PDDNOS group and control group on either of the sub-tests. It was suggested that children with PDDNOS might have problems in recognizing more ‘complex’ emotions or that children with PDDNOS might use different, more cognitively based strategies in processing emotional stimuli.

*Chapter 10* summarizes the findings of the studies on emotion perception and Theory-of-Mind skills of children with PDDNOS. In addition, the chapter discusses whether these findings are in line with the hypotheses formulated in chapters 3 (global) and 4 (further specified on the basis of a review of literature). No evidence was found for emotion perception problems in children with PDDNOS. These children’s problems with regard to a Theory of Mind seem to concern problems in the application of skills, rather than skill deficits. Several important problems concerning the clinical diagnosis of PDDNOS are discussed. Alternative hypotheses and directions for further research are suggested.