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Pre-school Teachers' Perceived Control and Behaviour Problems in Children

BY

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ABSTRACT

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In this thesis, pre-school teachers' perceived control, is examined in relation to problem behaviours of children and the actions of teachers in the classroom. In addition, other factors that are thought to relate to teachers' perceived control were studied.

The results of *Study I* indicate that pre-school teachers' high perceived control was related to high intentions to act in the event of child behaviour problems. Teachers' high satisfaction with their work was also related to high perceived control. *Study II* showed that low perceived control was associated with having a high proportion of children with a high level of externalising behaviours and of boys in the classroom. *Study III* shows that children who had a high level of externalising behaviours at the beginning and throughout the school year had teachers with low perceived control. Teachers' perceived control was not related to their perception of internalising behaviours in the same way as to externalising behaviours and it was unrelated to a change in any direction of problem behaviours. Concerning changes in problem behaviours, no other factor was found, except a low child to adult ratio for a positive change of internalising behaviours. In *Study IV*, the aim was to examine naturally occurring child–teacher interactions. Teachers' responding with commands to children was associated with teachers' low perceived control, whereas restrictive teacher responses were not related to teachers' perceived control.

The present study indicates that teachers' perceptions of children are important for their perceived control. It provides evidence that teachers' low perceived control is associated with their difficulties in handling externalising behaviours and the behaviour of the boys in the classroom. Responding to problem behaviours can be explained by teachers' perceived control, and their perception of a child's sex and externalising behaviours.

Keywords: pre-school teachers, perceived control, externalising behaviours, internalising behaviours, change, continuity, class size, child to adult ratio, sex distribution, child – teacher interactions

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INTRODUCTION

For most children, being a member of a group of children means positive experiences, peers to play with, and participation in stimulating activities. However, children do not always enjoy their situation and sometimes they may develop adaptation problems in a group of children. Some children might have low thresholds for stress, such as noise, and some might have a frequent need for interaction with adults. Other children might have difficulties in fitting to imposed structures and conform to the authority of adults, and they may also have difficulties in relating to teachers and peers (e.g., Egeland, Kalkoske, Gottesman, & Erickson, 1990).

Sometimes children are seen to express problem behaviours that have become troublesome for themselves and their surrounding. Children's development might be compromised by behaviour problems. Children who exhibit behaviour problems in the lower grades might be subjects to adverse effects (Cunningham & Sugawara, 1988; Olson, 1992), including negative effects on learning and being rejected by peers (Hovland, Smaby, & Maddux, 1996; Pattersson, DeBaryshe, & Ramsey, 1989). There is also a risk for these children to follow a developmental path that leads to depressed mood and/or antisocial tendencies (e.g., Pattersson et al., 1989).

However, problem behaviours are not only detrimental for the child but can also have negative consequences for teachers (Brophy & Rohrkemper, 1981; Safran & Safran, 1985). Such negative consequences might include an excessive consumption of the teacher's time and energy, negative emotional involvement, and undermining of the teacher's feelings of competence and personal control (Cunningham & Sugawara, 1988). Many children take part in child care for an extensive part of the day; therefore, pre-school teachers have a vital part to play in the management of these problems (Chazan, Laing, Jones, Harper, & Bolton, 1983).

In the present research teachers' beliefs about their control over children's negative or unwanted behaviour in a group of children are denoted *teachers' perceived control*. The present work aims at an understanding of teachers' perceived control and their perceptions of children's problem behaviours. One of the goals has been to accomplish a "picture" of how pre-school teachers' perceived control relates to teacher-rated problem behaviours and their actions in the classroom. Another goal has been to examine factors that may covary with teachers' perceived control. To describe the area of interest literature has been consulted from several research areas, including parenting, childcare, kindergarten and nursery school, and regular schooling.

Teacher beliefs

Teachers work in multifaceted environments (Feeny & Chun, 1985) that sometimes put high demands on a teacher's cognitive load (Cooper, 1989). Research on teacher beliefs suggests that the most significant characteristic of classroom teaching is its many uncertainties (Kagan, 1992). "A teacher cannot orchestrate instruction and maintain control in the highly unpredictable environment of the classroom without knowing whether things are going well; a teacher must be able to identify, label, and solve problems, and evaluate the solutions to problems" (Kagan, 1992, p. 79).

Nespor (1987) defined three levels of task identification. At the first level of thought, information processing is largely automatized and processes of perception take place without conscious attention. The second level of thought was termed a person's resources, which is the knowledge possessed by the individual to solve a problem. At the third level of task identification, conscious control and co-ordination of cognitive resources are used in problem solving. People's belief systems, another category of thought, become important determinants of task or problem definition. Many of the problems teachers encounter are not easily defined, and thus teacher beliefs serve the purpose of simplifying information processing and decision making. A person needs to encode as much information as possible in as many ways as possible. Nespor suggested that people's belief systems often include affective feelings and evaluations, as well as vivid memories of personal experiences, which are easily stored and retrieved from memory. In complicated situations it is impossible to identify the complete range of optional courses of action in a process. In such situations people often go beyond the information given and solve problems in ways that are easy at hand (Nespor, 1987). Information in a person's belief system resides in episodic memory with material drawn from experience or cultural sources, whereas information in a person's knowledge system is semantically stored (Pajares, 1992). Most of a teacher's professional knowledge can be regarded as beliefs in that teaching can be characterised by an almost absolute absence of truths of such issues as why pupils behave as they do and the nature of learning (Kagan, 1992).

Research has shown that teachers acquire most of their beliefs from their own practices and then from their colleagues (Kagan, 1992; Spodek, 1988). However, Kagan (1992) found that many researchers claim that most of teachers' beliefs about teaching are already established from the teachers' experiences of being a student for many years.

Teacher beliefs are often proposed to be dispositions to actions and major determinants of teacher behaviour in the classroom (e.g., Brown & Coney, 1982; Spodek, 1988). Research is often concerned with studying the consistency between teachers' beliefs and their practices (Fang, 1996). However, it should be equally important to provide evidence that certain beliefs are related to child outcomes (cf. Kagan, 1992). A model that describes such connections is found in Rose and Medway (1981a). In this model a link between teachers' control beliefs and their behaviour was proposed. Teacher behaviour was, in turn, thought to influence student behaviour and student achievement.

Perceived Control

In the Theory of Planned Behaviour (TPB, Ajzen, 1991) perceived control is a person's perception of the ease or difficulty in performing a requested behaviour or action. According to Skinner (1996), perceived control refers to a person's beliefs about how much control is available.

The more vivid and salient something in the environment is, the less a person can ignore making an opinion about it. In the TPB (Ajzen, 1991) a person's perceived control is regarded as being based on a number of salient aspects in a specific behavioural context. Consequently, it is not to be considered a generalised disposition of the person. A person's resources and opportunities to perform an action are viewed as underlying his or her perceived control. It is thought to reflect past experiences as well as anticipated

impediments and obstacles. Connections between a person's perceived control and his or her behaviour has been frequently reported (Manstead, 1996; Manstead & Parker, 1995). Knowledge of a person's perceived control is especially useful for predicting a person's behaviour in situations where the person does not have the required resources or skills to perform a particular behaviour, or where the person is dependent on the co-operation of other people (Ajzen, 1991; Manstead, 1996). This seems applicable to the classroom situation, where the teacher is working toward a goal, but is dependent on the children or on other adults to accomplish this goal.

In the TPB a person's intention to perform a given behaviour is believed to indicate how hard the person will try to perform a certain action. According to the theory, "performance of a behaviour is a joint function of intentions and perceived behavioural control" (Ajzen, 1991, p. 7). However, in any given situation one of these components might be more important than the other, and in fact, only one of the two predictors may be needed.

During the past century, a number of constructs and instruments concerning persons' perceptions and beliefs about control have been developed. It is, however, far beyond the scope of this work to describe them here (for an overview, see Skinner, 1996 and Elliot, 1997). Still, there are two concepts that will be mentioned here because they resemble perceived control in the TPB and are frequently used in research that concerns teachers.

The first is locus of control (Rotter, 1966). People are said to have an internal locus of control when they perceive the outcome of a wide range of behaviours to be contingent on themselves. The opposite, external locus of control, is when individuals attribute outcome to external forces not being under personal control, such as luck, chance, fate, or powerful others. A person's locus of control is, according to Rotter (1966), a generalised disposition of the person. The frequently used I-E scale is a forced-choice test that forms a bi-polar scale with extreme internal-external scores as the end points.

A specific way to describe teacher locus of control has been developed by Rose and Medway (1981), which refers to teachers' locus of control over student performance. A specific scale to describe parents' locus of control over their child's behaviour have been developed by Campis, Lyman, and Prentice-Dunn (1986), as well as by Janssens (1994). In parenting research, an overlap in measurement of perceived control and internal locus of control is often found (Hagekull, Bohlin, & Hammarberg, 2001). Skinner (1996) has made a distinction between locus of control and perceived control. Locus of control describes a connection between potential causes and an outcome whereas perceived control (and also self-efficacy) pertains to a connection between a person and an outcome (Skinner, 1996).

The second concept is Bandura's (e.g., 1989) well-known construct of self-efficacy. "Briefly, it is people's expectations that they are capable of performing the behaviour that will produce desired outcomes in a particular situation" (Feist, 1990, p. 431). A person's self-efficacy beliefs are linked to specific activities and are not conceived of as a personality trait. According to Ajzen (1991), this is the construct that is most compatible with perceived control. A number of researchers have studied self-efficacy in teachers working above the pre-school level (e.g., Henson, Kogan, & Vacha-

Haase, 2001; Soodak & Podell, 1996; Woolfolk & Hoy, 1990). Ashton (1984, p. 28) described teacher self-efficacy as "the extent to which teachers believe that they have the capacity to affect student performance". Brouwers and Tomic (2001) stressed teachers' efficacy in managing student behaviour.

In the work by Hagekull, et al. (2001) one of the subscales in the Parental Locus of Control questionnaire (Campis et al., 1986), the Parental Control scale, was reported to function as a measure of parents' perceived control rather than as a measure of locus of control. This scale was found to predict problem behaviours and social competence longitudinally. The construct seemed applicable to pre-school teachers.

Perceived control as conceptualised in the TPB (Ajzen, 1991) offers a frame of reference for teachers' work with children. In the present research an important aspect of pre-school teachers' perceived control over child behaviour is the ease/difficulty a teacher perceive he or she has in handling problem behaviours (cf. Ajzen, 1991). Teachers´ perceived control is viewed as a reflection of past experiences and current difficulties in their work with children.

Teachers' perceived control, problem behaviours, and teachers' educational actions

The teacher-child relationship, as well as the parent-child relationship, is unequal in the sense that the child is dependent on the adult and the adult is normally in a position of authority (e.g., Bugental & Lewis, 1999). If this relation is reversed, adults will often attempt to make efforts to regain control over the child. Research concerning this issue shows that adults who perceive themselves as having little control over negative child behaviours are more likely to employ exaggerated power assertive tactics and coercive care giving (Bugental, Blue, & Cruzosa, 1989; Janssens, 1994; Dix & Lochman, 1990). Several studies indicate that parents' low perceived control/external locus of control is associated with non-compliance and problem behaviours in the child (e.g., Bugental, 1999; Campis et al., 1986; Hagekull et al., 2001; Janssens, 1994; Mouton & Tuma, 1988; Ollendick, 1979; Roberts, Joe, & Rowe-Hallbert, 1992). Associations with internalising problems and children's social competence have also been found (Hagekull et al., 2001; Janssens, 1994). On the other side, if adults feel that they have control over negative child outcomes, they tend to use more appropriate responses and make more correct inferences about child behaviour (e.g., the child is tired and situational constrains; Bugental et al., 1989).

To study adults' beliefs about control in relation to children Bugental and colleagues (Bugental, Lewis, Lin, Lyon & Kopekein,1999) set up an experimental teaching situation in which mothers of elementary school-aged children were given the task to instruct an unrelated child. They found that mothers with low perceived control (power) in their care-giving role were likely to give punitive feedback to children who showed disengagement in the task.

Some studies indicate that teachers also are inclined to use power assertive tactics in situations when they feel out of control. This may happen when teachers are confronted with a child's aggressive behaviour. For instance, teachers have been found to be inclined to react with punishment and threats when they attribute aggressive behaviour as a behaviour that the child was able to control (e.g., to act intentionally; see Brophy & Rohrkemper, 1981; Graham, 1984; Lovejoy, 1996).

Concerning educational actions, Rose and Medway (1981a, b) established some empirical support for their model, which assumed relations between teacher control beliefs – teacher behaviour – student behaviour/outcome. Teachers with internal control beliefs had students that spent more time actively engaged in productive learning and less time passively attending to lesson instructions (Rose & Medway, 1981b). They were also observed to give lower amounts of disciplinary commands to their students. Low internal control scores were related to a high amount of inappropriate student behaviours. Cooper, Hinkel, and Good (1980) also noted that low control was associated with more frequent initiatives to direct a student's non-academic behaviour. Frequently expressed problem behaviours in students probably caused teachers to feel low control over interactions with these students. Cooper and colleagues (Cooper, Burger, & Seymour,1979; Cooper et al.1980) found that low control was felt over interactions with a student whom teachers perceived as being low in academic ability when the student initiated an interaction. Higher control was felt when the teacher initiated the interaction.

Educational actions have also been associated with perceived control. In a block-building situation with nursery teachers and children in their class Vandenplas-Holper (1996) found that internal control beliefs predicted more stimulation of the child's cognitive abilities without presenting the child with ready made solutions as well as more actions used to change children's actions. Ashton (1984) and Sparks (1988) found that teachers with high self-efficacy were willing to experiment with new teaching strategies to improve children's learning, whereas teachers with low self-efficacy were reluctant to change their teaching practices. Furthermore, teachers with high self-efficacy were likely to analyse failures (Ashton, 1984). Another study suggests that teachers' locus of control might have a causal impact on students' perceptions of their classroom climate (Sadowski & Woodward, 1983). Teachers with internal locus of control were likely to engage in activities that facilitated the students' motivation. Using vignettes that included academic and conduct problem situations, Trice and Wood- Shuman (1984) observed that teachers with an internal locus of control often chose an intrinsic motivator such as pep talk and explaining. In contrast, externally oriented teachers were likely to choose extrinsic motivators such as behaviour modification techniques.

Regarding teachers' efforts to solve classroom problems, Gutkin and colleagues (Gutkin & Ajchenbaum,1984; Gutkin & Hickman,1988) found that teachers with high perceived control seem to seek out and utilise information to solve problems. Teachers who received information intended to enhance their perceived control over a presented problem enhanced their preference for consultative service from school psychologists, which is a more active approach to solve classroom problems than to ask for testing services (Gutkin & Hickman, 1988).

Taken together, educational research indicates that teachers with high perceived control are more accepting to children's problem behaviours and more flexible in their educational practices than teachers with low perceived control. Teachers with high perceived control appear to strive to motivate children intrinsically in problem situations and academic tasks.

Problem behaviours in children

Child behaviour problems are most often divided into externalising behaviours (excessive moving, inattention, and aggressive acts) and internalising behaviours (sad and anxious behaviours and passivity; Achenbach & Edelbrock, 1978). Achenbach and Edelbrock (1978) identified these two major types of problem behaviours as broadband syndromes (also denoted as undercontrolled and overcontrolled behaviours). Algozzine (1977) identified two similar clusters of problem behaviours to be highly relevant to the classroom setting. One cluster, a social defiance cluster, consisted of destructive, aggressive, disobedient behaviours and also the inability to co-operate and laziness. However, motor behaviours that were disturbing were viewed somewhat differently in that they were regarded as organically determined. The social immaturity cluster included sad and anxious behaviours, passivity, and incoherent speech and clumsiness.

Teacher ratings of pre-school children and children in the lower grades most often show that boys are more prone to externalising problems as compared with girls (La Frenière, Dumas, Capuano, & Dubeau, 1993; McGuire & Richman, 1986; Merret & Taylor, 1994; Ramasut & Papatheodorou, 1994; Winsler & Wallace, 2002). Sex differences in internalising problems in pre-school aged children are seldom reported (La Frenière et al., 1993; Winsler & Wallace, 2002).

Teachers' perceptions of problem behaviours

Observations are generally accepted as being more objective than parents' and teachers' ratings of problems, but using teacher ratings is of both practical and economical value. Ratings of child characteristics generally contain objective (child characteristics), subjective (rater characteristics), and contextual (the child behaves differently depending on the setting) components (Mangelsdorf, Schoppe, & Buur, 2000).

In studies in which the same rating instrument is used by parents and teachers the child is often perceived as having less severe problems by their teacher (Maselli, Brown, & Veaco, 1984; Verhulst & Akkerhuis, 1989; Verhulst, Koot, & van der Ende, 1994; Winsler & Wallace, 2002). Teachers' ratings of behaviour problems have been found to differ from ratings by parents and independent observers, especially concerning aggressive behaviours (Harden et al., 2000). However, on problems related to peer relations and problems interfering with academic functioning, teachers rated problems higher than parents (Verhulst & Akkerhuis, 1989). When children, aged 3-6 years, were observed in playgroups, the teachers' ratings of externalising behaviours corresponded better to observations than parents' ratings (Hinshaw, Han, Erhardt, & Huber, 1992). On the other hand, parents' ratings were better predictors of the observed internalising behaviours of children.

The agreement between teacher and parent ratings of problems is often modest. In a meta-analysis Achenbach, McConaughy, and Howell (1987) found a mean correlation of .32 for externalising problems and .21 for internalising problems. Teacher – parent agreement scores within the same range were found by Winsler and Wallace (2002). The mean correlations between teachers who saw the child in the same setting were consistently higher: .74 for externalising problems and .61 for internalising problems (Achenbach et al., 1987). It could be noted here that teachers' ratings of problem

behaviours are a somewhat better predictor of later signs of disturbance than parents' ratings (e.g., Verhulst, Koot, & van der Ende, 1994). Thus, it is important to include teachers' ratings of problems in research that concerns child development over time.

Factors related to change and continuity of problem behaviours

Many problem behaviours that children express at pre-school age are regarded as transient and, to some extent, a component of normative developmental changes (e.g., Campbell, Breux, Ewing, & Szumowski, 1984). Developmental changes are apparently common for both externalising and internalising problems (Fischer, Rolf, Hasazi, & Cummings, 1984) and will occur for about half of the children who are identified as having externalising problems at pre-school age (Campbell, Pierce, Moore, Maracowitz, & Newby, 1996). Accordingly, some children could be expected to overcome their difficulties before they start compulsory school, whereas others will continue to show problem behaviours.

High individual stability is usually observed in externalising problems (e.g., Campbell, 1994), whereas lower stability has been reported in internalising problems (Fischer et al., 1984). In research stability of externalising problems is frequently related to home factors (e.g., McGuire & Richman, 1987). One of the most often found correlates or predictors is parents' negative control methods (e.g., Campbell et al., 1996; Fagot & Leve, 1998; Pattersson et al., 1989; Loeber, 1982). Campbell and colleagues (1996) showed that externalising problems were likely to persist in homes with chronic family stress. Egeland et al. (1990) reported that children who overcame their problems between pre-school and third grade were found in homes with changes in maternal depressive symptoms, parental stress, and quality of the home environment.

Regarding factors related to child care, studies have shown divergent results. A number of developmental child outcomes have been predicted by child care variables, including social interaction with teachers and structural variables (e.g., Howes, Phillips, & Whitebook, 1992; Dunn, 1993a,b; Howes & Smith, 1995). Kontos (1991) found that a global measure of child care quality predicted social adjustment. In contrast, Deater-Deckard, Pinkerton, and Scarr (1996) reported that variation of child care quality was unrelated to children's behavioural adjustment after individual differences of the home had been controlled. Hagekull and Bohlin (1995) observed that high quality child care reduced externalising problems in children coming from homes with low socio-economic status. Together, these studies show that both home and child care factors are important for change and continuity of problem behaviours.

Teacher behaviour and teacher–child interactions

There is a widely held contention that the behaviour of adults in early childhood settings has an important impact on children (Howes, Whitebook, & Phillips, 1992; Phyfe-Perkins, in Kontos & Wilcox-Herzog, 1997a). On the other hand, little is known about specific teacher behaviours or their relations to child behaviours and outcomes in young children (Kontos & Wilcox-Herzog, 1997a; Feeny & Chun, 1985).

Children's activity level, distractibility, and persistence are important child characteristics for teacher – child interactions (Martin, 1989; Keogh, 1989). These

temperament traits are closely related to externalising and internalising problems. Children who exhibit behaviour problems and learning disabilities are responded to more negatively as compared with other children (Cooper et al., 1980; Dockings, 1982; Dorval, McKinney, & Feagans, 1982; Fry, 1983). Kontos and Wilcox-Herzog (1997a) pointed at a consistent picture of differences in pre-school teachers' interactions with children as a function of sex. Boys are responded to more negatively in comparison with girls.

Attempts have been made to structure teachers' strategies of managing problem behaviours by using either teachers or "independent" observers as informants. When using teachers as informants, researchers most often have teachers respond to hypothetical problematic situations or to hypothetical children's problematic behaviours (e.g., Cunningham & Sugawara, 1988; Trice & Wood-Shuman, 1984). Cunningham and Sugawara (1989; see also Kontos & Wilcox-Herzog, 1997a) categorised teachers' strategies for managing problem behaviours into two categories: helping and restrictive. Helping strategies are those that rely on active and empathetic involvement and may include active listening, nurturing, supporting, or guiding. Restrictive strategies are characterised by their restraining or punitive nature (e.g., stating rules, reprimands, and punishment). Papatheodorou (2000) classified teachers' strategies for managing problem behaviours into three approaches: the behavioural approach, the cognitive approach, and the punitive approach. The behavioural approach is based on the main principle that behaviour is learned through reinforcement. The cognitive approach puts emphasis on children's cognitive abilities, that is, instructions and guidance are the main strategies used to influence child behaviours. Papatheodorou found that teachers who frequently used this approach recognised the importance of emotions and cognitive processes in the manifestation of behaviour. The author further noted that cognitive abilities of young children sometimes could set limits to appropriate behaviour. The punitive approach was further divided into mild and severe punishments.

When using observers in the classroom, researchers have listed various teacher behaviours (and child behaviours), depending on the focus of interest. In nursery school classrooms Fagot (1973) listed teacher behaviours in response to children's on-task and non-task behaviours. Stipek and Sanborn (1985) listed teacher initiated responses to children's behaviour in situations structured by the teacher (academic or play): assistance, praise, interference, non-task approach, disapproval, and physical approach. Further, they coded teachers' responding to child-initiated behaviours into positive acknowledgement, negative acknowledgement, praise, and a no response category.

When studying teacher-child interactions, an interactive approach is typically advocated because children both influence and are influenced by adults (Kontos & Wilcox-Herzog, 1997b). Thus, teachers' interactions with children should optimally be studied in sequences to take both parts of the interaction into consideration. However, it seems fair that teachers, who are professional and in a position of authority (see Bugental & Lewis,1999), have a larger responsibility than the child has for how interactions develop, especially when responding to negative child behaviours. The importance of correct feedback to children who exhibit problem behaviours in a given situation is frequently declared (e.g., Hadley, Wilcox, & Rice, 1994). College-educated pre-school teachers have been found to be less restrictive than less-educated teachers (Berk, 1985). College-educated teachers were seen to engage more in encouraging behaviours with

children in general; in addition, they used indirect guidance and behaviours that promote children's verbal skills. In contrast, harsh discipline and criticism have been related to child stress, non-task and disruptive behaviours (Fagot, 1973; Feeny & Chun, 1985; Fry, 1983; Kontos & Wilcox-Herzog, 1997a; Martens & Hiralall, 1997).

Potential predictors of teachers' perceived control

According to Ajzen (1991), experiences that deal with the presence or absence of resources and opportunities to perform an action of interest are important determinants of a person's perceived control. Both objectively measured conditions and subjective conditions may be of importance. Objective conditions can, for example, consist of educational background, parenthood, years of professional experience, and composition of the group. A lower number of children in the classroom (class size) and a lower number of children per teacher (child to adult ratio) are conditions that could facilitate the teacher's possibilities for both actual and perceived control. The length of teachers' professional experience has seldom been of predictive value on teacher and child processes in pre-school settings (e.g., Snider & Fu, 1990). As an exception, Ramasut and Papatheodorou (1994) found that pre-school teachers with longer professional experience identified less externalising problems, but were more sensitive to identify internalising problems. A proper education of pre-school teachers has been associated with higher effectiveness and positive child outcomes (Howes, 1997). Teachers with a higher child-related education have been reported to provide developmentally appropriate activities (Cassidy, Pugh-Hoese, & Russel, 1995; Snider & Fu, 1990) and sensitive care to children, especially for very young children (Howes, Phillips, & Whitebook, 1992b).

There is general agreement that job satisfaction is a composite of many facets of a job that might have motivational functions. These facets include an individual's attitudes, evaluations, and emotions to several aspects of the job. The prevailing assumption is that a higher level of job satisfaction will result in better job performance (Jorde-Bloom, 1986). Low satisfaction with working conditions as well as with the nature of teachers' work has been found to predict emotional exhaustion, which may impair relationships with children and colleagues (Stremmel, Benson & Powell, 1992). Satisfaction with social-professional support systems might also contribute to teachers' physical and psychological well-being or burnout. Moreover, satisfaction with the physical quality of the centre might be important as it can have a great impact on instructions and interactions occurring in educational settings (Prescott, in Feeny & Chun, 1985). Connections between poor work conditions, low satisfaction, and work-related stress have been found in many studies as well as associations between these variables and locus of control (e.g., Bein, Anderson, & Maes, 1990; Fuqua & Couture, 1986; Kyriacou & Sutcliffe, 1979; Lunenberg, 1992). Parkay, Greenwood, Olejnik, and Proller (1988) reported that teacher stress was negatively related to teacher efficacy and internal locus of control. Furthermore, Berk (1985) observed that teachers' satisfaction with their job conditions was clearly associated with positive caregiver behaviours. Satisfaction was associated with a more child-oriented attitude, which favours an understanding and accepting approach to young children. Concerning teachers' dissatisfaction with their job, controlling and dealing with children's misbehaviour have been found to be the least

liked and most stressful task for child care teachers (Kaiser, Rogers, & Kasper, 1993; Kontos & Stremmel, 1988).

Child behaviours that disrupt on-going activities (e.g., talking out of time, aggressive behaviours, and distractibility) are perceived as the most difficult and disturbing to teachers (e.g., Coleman & Gilliam, 1983; Hutton, 1984; Jones, Charlton, & Wilkin, 1995; Merret & Taylor, 1994; Safran & Safran, 1985; Stephenson, Linfoot, & Martin, 2000). Children who are shy and anxious and do not want to participate in activities are also sometimes described as being difficult for teachers to manage (Hutton, 1984; Morgan & Dunn, 1988; Safran & Safran, 1986). Furthermore, boys are known to be more troublesome than girls by their teachers, suggesting that the sex distribution in a classroom may also play a role. Morgan and Dunn (1988) concluded from their findings that highly visible children in a classroom were often boys exhibiting high levels of externalising problems and boys with frequent need for interaction with adults. Brophy and Good (1970) summarised their findings stating that boys appear to be more salient in the teachers' perceptual field. In contrast, Morgan and Dunn (1988) reported that invisible children were more likely to be girls and to express internalising behaviours.

The importance of structural conditions in the classroom for teacher and child behaviours

Teacher education, class size, and child to adult ratio are structural conditions (also called regulatable variables) in a classroom that can be regulated according to government or local authorities (e.g., Phillipsen, Burchinal, Howes, & Cryer, 1997). In day care and pre-school studies a composite measure of centre quality is often used that sometimes makes it difficult to delineate the effects of different structural variables. Lower child to adult ratios have been related to better child care (Phillipsen et al., 1997). In centres that complied with ratio standards teachers were rated as being more sensitive and less detached by observers (Howes, 1997). Collins (1983) showed in a review of the relevant literature that teachers in small groups tended to be more actively involved with children, whereas teachers in large groups spent much of their time interacting with other adults. As regards child to adult ratio, teachers devoted less time managing children (commanding and correcting) in classrooms where ratios were low than in classrooms where ratios were high. Evidence shows that teachers tend to provide more interesting and appropriate activities for children in classrooms with low child to adult ratios (Howes et al., 1992; Palmerus, 1991; Palmerus & Hägglund, 1991), as well as to spend more time in social interaction with children (Collins, 1983). When it comes to child behaviours, less aimless behaviour has been observed (Collins, 1983; Russel, 1990; Sundell, 2000). In a group of children where the child to adult ratios are temporarily low, externalising behaviours have been shown to increase (Russel, 1990, Palmerus, 1996). Otherwise, inconsistent results on child outcome have been reported (e.g., Dunn, 1993b; Howes, 1997; Scarr, Eisenburg, & Deater-Decker, 1994; Sundell, 2000). In a meta-analysis including randomised controlled studies on group size and child to adult ratio only weak connections with externalising problems were revealed (Bremberg, 2001).

More consistent results on class size have been observed in educational research. For instance, a small class size has been found to facilitate student – teacher interaction and to reduce discipline problems (Finn & Achilles, 1990; Jason & Nelson, 1980). In

small classes children's attention is enhanced and children have more opportunities to interact with the teacher (Cooper, 1989). In a review of the literature, Robinson (1990) noted promising effects of reducing class size on student learning from kindergarten through all the lower grades. Finn and Achilles (1990) found that children coming from small kindergarten classes outperformed their peers coming from regular sized classrooms in reading and mathematics in the lower grades.

In an overview, Dunn (1993b) contended that only a few studies are responsible for the widely held beliefs about the importance of child to adult ratio and class size on child development. One of them is Smith and Spence (1980), who argued that the negative effects of group sizes greater than 20 children could not be compensated by a high child to adult ratio.

The present research

The present research is set in the context of the Swedish child care system and the non-obligatory school preparatory year that almost all 6-year-old children take part in, the year before they start school at the age of 7. The school preparatory year in Sweden resembles kindergarten in other countries, but compared to kindergarten in the U.K. and U.S., children are somewhat older in Sweden. To make the transition to first grade as smooth as possible for the children, the classrooms are situated in the same area or building as the lower grades in school. The children participate in programs that promote pre-academic skills, such as language development and fine motor skills. Free-play periods that promote children's social skills acquisition and stimulate socio-emotional development are also included. However, the trend is that programs are becoming more academically oriented with a curriculum emphasising readiness for first grade reading and mathematical skills. The teachers who work in child care centres and school preparatory classrooms have at a minimum a 2-year upper secondary school education in child care and development. Further, more than half of these teachers have a college pre-school teacher education of 2.5 years or more and thus, from an international perspective, are well prepared to work with children (cf. Hwang & Broberg, 1992).

Teachers provide activities that are adapted to children with different needs and with different developmental levels. Physically and emotionally handicapped children are usually integrated in the school system and many schools contain children of multicultural origin. During the past 10 years, group sizes have become larger (Sundell, 2000). Even though the Swedish child care and school system have been regarded as prominent (Hwang & Broberg, 1992) the mass media have recently shown that a somewhat stressful and unhealthy situation exist for many teachers and children. Having many children exhibiting high levels of problem behaviour in the classroom might be extremely stressful. The ease/difficulty teachers' perceive they have in dealing with such problem behaviours might be of importance for child development as well as their own well-being. Skinner (1996) pointed out that some theorists argue that such control is more important for a person's behaviour than actual or objective control. Few studies have addressed the issue of the importance of pre-school teachers' control beliefs for problem behaviours in the classroom and for teachers' responding to problematic child behaviours.

Aims and hypotheses

The specific aims of the present research were:

- First, to study the relation between pre-school teachers' perceived control and their intention to act in the event of problem behaviours. Second, to study the relation between teachers' perceived control and objective conditions (professional experience and classroom conditions) and subjective experiences (teachers' job satisfaction) (*Study I*).

- To analyse the relation between pre-school teachers' classroom experiences and their perceived control. Teachers' experiences of children with a high level of problem behaviour (proportion in the class), sex of the children (the proportion of boys to girls), class size, and child to adult ratio were studied (*Study II*).

- To study the role of pre-school teachers' perceived control and of structural conditions in the classroom (class size, child to adult ratio, and the proportion of boys to girls for change/continuity of children's externalising and internalising behaviours (*Study III*).

- To examine the role of teacher's perceived control, teacher rated child characteristics, and sex of the child for child-teacher interactions (*Study IV*).

The following hypotheses were tested:

- A positive relation was expected between pre-school teachers' perceived control and their intention to act in case of behaviour problems. A positive relation was anticipated between subjective (teachers' job satisfaction) conditions and teachers' perceived control (*Study I*).

- A negative relation was hypothesised between level of problem behaviour and teachers' perceived control (*Studies II* and *III)* and also negative relations between structural conditions (class size, child to adult ratio, and proportion of boys to girls) and teachers' perceived control (*Study II*).

- A positive relation was expected between teachers' perceived control and positive change in problem behaviours whereas a negative relation was anticipated between teachers' perceived control and negative change in problem behaviours (*Study III*).

- Negative relations were predicted between class size and child to adult ratio and a positive change in problem behaviours whereas positive relations were expected between class size and child to adult ratio and a negative change in problem behaviours (*Study III*).

- A positive relation was hypothesised between teacher ratings of child externalising behaviours and observations of child-teacher interactions initiated by such child behaviours. It was expected that boys would be more involved than girls in interactions including externalising behaviours and restrictive teacher responses (*Study IV*).

- A negative relation was predicted between teachers' perceived control and their responding to child behaviours with commands (*Study IV*).

METHOD

Participants and procedure

Study 1

A questionnaire was sent to 314 pre-school teachers, randomly drawn from all members in two national labour unions for pre-school teachers. After one reminder, 188 teachers (60%) had returned filled-out questionnaires. Of those teachers, 111 had a 3-year college education, 68 had an upper secondary education and 2 teachers had no child-oriented education. Blank questionnaires were returned from 8% of the teachers. The reason teachers gave for not completing the questionnaire was either that they did not presently work with a group of children or did not want to participate in research. The majority of teachers (88%) were working in public day care centres.

The questionnaires contained items concerning pre-school teachers' perceived control, intention to act, job satisfaction, and information about the teachers. For a further description, see the Results section of this thesis.

Participants and procedure

Studies II - IV

To recruit teachers and children for *Studies II – IV* 12 principals in schools in rural, suburban, and urban areas were contacted by phone. All the principals agreed to receive information about the study and 11 gave names and addresses to 32 school preparatory classrooms in their districts. These pre-schools then received the same information as the principals. Finally, teachers from 22 pre-schools accepted to participate in the study. Ten pre-schools did not participate because of a heavy teacher workload. During a first visit, the pre-school teachers were informed of the different steps of the data collection procedure. The pre-schools were located in the public schools in, or in the vicinity of, a university town in Sweden with about 180,000 inhabitants and were about equally distributed in rural, suburban, and urban areas.

In the 22 school preparatory classes, the teacher often worked as the only teacher in small classes, whereas in large classes two or more teachers worked together. In small classes children participated in adult structured activities for longer periods. In the larger classes children could choose to play for a longer part of the time.

Child behaviour questionnaires and also teacher questionnaires were distributed at the author's visits to the pre-schools. Teacher questionnaires contained items concerning

teachers' perceived control, description of their group of children, and background characteristics of the teacher. Table 1 presents a description of the participants for *Studies II-IV*.

Table 1

Descriptive statistics for *Studies II – IV*.

	Study II	*Study III*	*Study IV*
Classes	22	22	19
Children	386 (206 boys) (180 girls)	370 (197 boys) (173 girls)	92 (53 boys) (39 girls)
Teachers	40	40	36
Professional experience	17.6 (*SD* = 9.6)		18.9 years (*SD* = 8.9)
Age	45 years (*SD* = 9.9)		45 years (*SD* = 9.4)
Education	29 college educated teachers 10 secondary school educated teachers 5 primary school teachers 1 no information		26 college educated teachers 8 secondary school educated teachers 2 primary school teachers
Structural variables			
Class size	range 7-26 children (*M* = 17.4, *SD* = 5.5)		7-26 children (*M* = 18.3, *SD* = 5.3)
Child to adult ratio	5.3-19 children /adult (*M* = 10.7, *SD* = 4.7)		5.3-19 children/adult (*M* = 11.3, *SD* = 4.1)
Proportion of boys to girls	*M* = .54 (*SD* = .13)		

In *Study II*, the entire sample of teachers and children participated. In *Study III*, the same teachers participated and the children who were still in the same classrooms at the end of the school year participated. In *Study IV*, a selected sample of children and their teachers participated (see selection procedure below).

Data collection: questionnaires

Teachers rated all children in their class on problems and positive characteristics 1 month after school started (at T1) and again 8 months later at the end of the year (at T2). Two and a half months after the schools had started, data on teachers' perceived control were obtained from each teacher. The observational data were collected during a period from December to April by the author. Child data were obtained from one college-educated teacher in all but one class. In two large classes two teachers filled out half the questionnaires each (stating workload reasons); 24 teachers thus completed the questionnaires. The same teacher completed the questionnaires at the beginning of the

school year and at the end of the year. The teachers who filled in the child questionnaires had longer professional experience than those who did not (M = 21.7 vs. 14.1 years).

Data collection: observations

During the first visit, teachers had been informed that children's interactions with peers and teachers were to be recorded by the author, who was unaware of teacher-rated child characteristics. Further, the teachers were not told which children were to be observed.

The to-be-observed children were identified during the roll call in the morning. A target child was observed in periods of 5 minutes. A total of 40 per 5 minutes intervals were marked with a beep in the observers ear from a tape recorder every 7.5 seconds. Within each interval, the child's ongoing behaviour and the teacher's behaviour connected in time with that behaviour of the child was recorded. Children were observed in a predetermined order. When one child had been observed during a 5-minute period, the next child was located and observed. The number of visits ranged from 2-5 and the number of 5-minute observations ranged from 9 to 27 (M = 12.15, SD = 3.06). The large variation was due to the number of target children in a classroom and on some children's absence from school.

Before data collection began, an additional observer was trained until acceptable agreement (90%) with the author was achieved for all child and teacher behaviours. Agreement was then checked in the middle and toward the end of the data collection period on 41 children's interaction with their teachers (2-6 5-minute observations per child).

Selection procedure for Study IV

The criteria for selecting the to-be-observed children were as follows: Children who had $\geq$ 3.0 on the externalising problem behaviour scale and $\leq$ 2.0 on the internalising problem behaviours scale (5-point scales) were selected to represent a category of children with externalising problem behaviours. The same criteria were selected to represent children with internalising problem behaviours: $\geq$ 3.0 on the internalising problem behaviour scale and $\leq$ 2.0 on the externalising problem behaviour scale. To represent children without problem behaviours children of the same sex from the same classrooms who had $\leq$ 1.75 on both externalising and internalising behaviours were selected. One hundred and twenty children met the inclusion criteria. In response to a letter 93 parents gave their written consent for their child to participate in the study. Five parents refused participation and the rest did not respond to the letter despite a reminder. In three classrooms either no children or only one child met the inclusion criteria. The initial analyses of the observations showed that one child was an outlier according to the criterion SD > 3 (cf. Tabachnick & Fidell, 1989), which was due to frequently expressed externalising behaviours. This child, a boy, was therefore excluded from further participation in the study.

To distinguish teacher ratings from observational data teacher-rated externalising behaviours were denoted as undercontrolled behaviours and teacher rated internalising behaviours as overcontrolled behaviours. The final sample consisted of 19 boys and 4 girls with externalising problem behaviours (the undercontrolled group), 8 boys and 11

girls with internalising problem behaviours (the overcontrolled group), and 25 boys and 25 girls without problem behaviours (the non-problem group).

Measures

The teacher questionnaires, concerning perceived control, intentions to act, job satisfaction, and child behaviours consisted of statements with response scales ranging from 1 ("do not agree at all") to 5 ("fully agree"). In these scales described below a high value indicated a high degree of the measured entity. All items or abbrevations of items are listed in the Appendix.

Perceived control (Study I). Pre-school teachers' perceived control over child behaviour was assessed with the *Teacher control of child behaviour* scale. The measure of pre-school teachers' perceived control was initially derived from a subscale in the Parental Locus of Control instrument developed by Campis et al. (1986). The scale was adapted to suit conditions relevant to pre-school teachers who work with children in day care centres and school preparatory classrooms from the items in the Parental control of child behaviour scale. The original wording of the items was closely adhered to in this study. The items were constructed as statements concerning perceived control over child behaviour in their job. The *Teacher control* scale contained 10 items with an alpha of .63.

Perceived Control (*Studies II – IV)*. To improve the *Teacher control* scale, the instrument was factor analysed in the first sample of 188 pre-school teachers (see participants in *Study I*). Items that loaded > .40 and concerned the negative or unwanted child behaviours that teachers presently meet in their classroom were retained. Compared with the content of the scale that we used in *Study I*, 4 items were excluded and 1 new item was included: "Some children control my work in this group of children." Thus, this "new" scale consisted of 7 items and had an alpha value of .79. In *Studies III and IV*, the averaged value of teachers' perceived control in a particular classroom was used for each child who belonged to that classroom.

Intention to act (Study I). To assess pre-school teachers' readiness to handle child behaviour problems the teachers were asked about their intention to act when confronted with problem behaviours. The *Intention to act* scale consisted of 7 items, which were specifically constructed by the author for the purpose of the study. A high score meant that the teacher had a high readiness to intervene in the event of problems. A low score indicated that wait-and-see strategies with problem behaviours were preferred. The scale had an alpha value of .57.

Objective conditions (Study I). Educational level was measured as follows: 1 referred to a 2-year upper secondary education and 2 referred to a 3-year college education. *Parenthood* was measured as number of children in the family. For *Professional experience,* we used number of years of work in child groups, and the *Group size* variable consisted of number of children in the present group. The *Present age group* consisted of a 5-step scale, which roughly describes the average age of the group that teachers

presently worked with. The age group 1-3 years was denoted as 1, age group 1-6 years as 2, age group 3-6 years as 3, age group 6-9 years as 4, and the age group 7-10 years as 5.

Subjective conditions (*Study I*). The *Job satisfaction* scale was an adaptation from Brenner and Wallius (1979), which consisted of items related to how pleased the teacher felt with her or his working conditions. It contained 12 items with an alpha of .82. The *Centre physical quality* scale consisted of 3 items (α = .64), which described physical quality aspects in their job. The *Social recognition* scale consisted of 3 items (α = .75), which described the feedback that pre-school teachers felt that they received from colleagues and administrators. Finally, *Satisfaction with education* was measured in one item.

Problem behaviours (Studies II – IV). A Swedish version of the Pre-school Behaviour Questionnaire (PBQ, Behar & Stringfield, 1974; Hagekull & Bohlin, 1994) was used to study problem behaviours. *Externalising behaviours* (aggressive and concentration problem behaviours) were assessed with 15 items (α = .95) and *Internalising behaviours* (unhappy and anxious behaviours, passivity) were assessed with 6 items (α = .81). To test teacher agreement about child behaviours, 69 children in 19 classrooms were rated by an additional teacher. Statistical analysis was performed using Pearson's correlation coefficients. Reliability for externalising behaviours was r = .75 and for internalising behaviours r = .61, ps < .001.

In *Studies II* and *III* children with scores 1 *SD* above the sample mean on the 5-point scales at T1 were classified as having a *high level of externalising/internalising behaviours* (e.g., Crick & Dodge, 1996; Crick, Grotpeter, & Bigbee, 2002; for a discussion of different cut-off points, see Doyle, Biederman, Seidman, Weber, & Faraone, 2000). Children with scores below 1 *SD* were classified as having *a low level of problem behaviours*. The same cut-off point (1 *SD* above the sample mean for all children at T1) was used at T2 to identify children with a high/low level of externalising and internalising behaviours.

In *Study II*, the *Proportion of children with a high level of externalising/ internalising behaviours* in each classroom was used as a measure of teacher experiences of problem behaviours.

In *Study IV,* the children that were to be observed were selected to mirror teachers' perceptions of child characteristics: children as having undercontrolled behaviour, overcontrolled behaviour, and as having a low level of both types of problem behaviours (see selection procedure above). The scale value of 1 was given to children with a high level of externalising behaviours (*children with undercontrolled behaviour*); all other children received a value of 0, yielding dichotomous variables. A corresponding measure was created for *children with overcontrolled behaviour.*

Structural variables (*Studies II–IV*). *Class size* was measured as the number of children in the classroom (same as group size in *Study I*). *Child to adult ratio* was measured as the number of children per adult in a classroom (*Studies II–IV*). The *proportion of boys to girls* was expressed as the percentage of boys in each classroom (*Studies II–III*).

Sex of the child (*Study IV*) was scored a 1 for girls and 2 for boys.

Positive child characteristics (Study IV). Teachers' perceptions of positive task oriented behaviours were measured in the scale *Work efficiency* (previously named Ego strength/effectance; see Hagekull & Bohlin, 1994). This scale contained 7 items describing confidence, self-directiveness, involvement, and curiosity when confronting tasks (α = .83; teacher agreement r = .47). Perceived *Social competence* (α = .89; teacher agreement r = .67) was studied in 14 items measuring empathetic, helping, leadership and other behaviours, signifying positive initiatives in social contexts with both peers and adults (Hagekull & Bohlin, 1994).

Observed child behaviour (Study IV). Frequencies of observed child behaviours were summed and then averaged across observation periods to form observed child behaviour scales. Excessive moving and talking, disturbing and disobedience behaviours, verbal, and physical aggressive acts formed a measure of observed *externalising behaviour*. The *internalising behaviour* scale consisted of behaviours indicative of sadness, dissatisfaction, depression, anxiety, fearfulness, tension, and withdrawal. The *off-task behaviour* scale contained behaviours when a child had been doing other things during structured activities and/or did not pay attention. The *on-task behaviour* scale contained behaviours when a child had been working/paying attention in structured activity, either in a group or individual setting. All other observed appropriate behaviours formed the *positive behaviour* scale, which comprised verbal/non-verbal contacting of/responding to children/adults, solitary play and play with other/s, listening to others, expressing feelings, physical contacts with adults, obeying, and following instructions.

Product moment correlations (n = 41) were used to estimate inter-observer agreement of externalising behaviours, r = .94, off-task, r = .94, on-task, r = .99, and positive behaviours, r = .96. Internalising behaviours were too uncommon to allow calculation of a correlation.

Observed teacher behaviour (Study IV). Twenty-two teacher behaviours, organised in four sets, occurring in response to children's on-going behaviours were recorded. After excluding behaviours with low sampling adequacy values (cf. Hair, Anderson, Tatham, & Black, 1998), a factor analysis was performed to form the following relevant teacher behaviour scales. *Support behaviours*: monitoring the target child's behaviour from a distance, encouraging, maintain attention to a child, and explaining. *Restrictive behaviours*: limit setting, physical restraint, and aversive responses (threat, punishment, and criticism). Teacher *Commands* consisted of responses of *"do this"* type without an explanation. Teacher commands were used as a category in itself, as it did not co-vary with other teacher behaviours.

Inter-observer agreement was r = .94 for support behaviours and .92 for restrictive behaviours. Few commands were observed during reliability checks. The total agreement for commands was 90%.

Observed child-teacher interactions. To form child-teacher interaction scales each child behaviour scale (*externalising, internalising, off-task, on-task, and support* scale) was

combined with each teacher scale (*support, restrict,* and *command* scale*,* e.g. *externalising-support, externalising-restrict,* and *externalising-command*), yielding 15 interaction scales describing how each child behaviour was responded to.

Issues in data analyses

All analyses were performed with the SAS programs and significance tests were two-tailed. In *Studies I and II*, teachers formed the unit for statistical analysis. Bivariate relations were studied with Product moment correlations and *t*-tests. To predict teachers' perceived control, multiple regression analyses based on the variables that correlated significantly with perceived control in the bivariate analyses were performed. To examine if problem behaviours interacted with structural variables in the prediction of teachers' perceived control in *Study II* hierarchical regression analyses with standardised variables (as recommended by Cohen & Cohen, 1983) were used.

In *Study III*, children formed the unit for statistical analysis. Change/continuity in level of problem behaviours over time (see Figures 1 and 2) was illustrated in the form of probability trees (e.g., McGuire & Richman, 1987), where the presence and absence of problem behaviours at one point of time (T1) is linked with the presence or absence at a later time (T2). Continuity of a high/low level of problem behaviours is represented by the percentage of the original group still showing problem behaviours. The probability trees for externalising and internalising behaviours consisted of 6 groupings of children (see Figures 1 and 2).

Group A: a low level of problem behaviours at T1
Group B: a high level of problem behaviours at T1
Group C: a low level of problem behaviours at both T1 and T2
Group D: a low level of problem behaviours at T1 and a high level of problem behaviours at T2
Group E: a high level of problem behaviours at T1 and a low level of problem behaviours at T2
Group F: a high level of problem behaviours at both T1 and T2

Two-way ANOVAs, with the relevant subgroups and sex as factors, were performed to determine if change/continuity in problem behaviours and sex of the child were related to teachers' perceived control and structural variables. To further study factors related to continuity, analyses were performed with the two groups of children for which no change occurred, groups C and F. Interaction effects between group and sex were also examined. As confounding effects of sex on the dependent variable "the proportion of boys" could be expected, only interaction effects with that variable will be reported. Chi-square tests were computed to ascertain whether boys and girls differed in positive and negative change of externalising and internalising behaviours.

In *Study IV*, individual children also formed the unit for statistical analysis. Despite the selection procedure of children with under/overcontrolled behaviour and other children, the final group of 92 children was treated as one single sample. This was done because the selection variables were included among the predictor variables and independent effects of these variables were estimated in multiple regression analyses.

To predict child-teacher interactions bivariate relations between child-teacher interactions and possible predictor variables were examined using different statistical analyses. Variables with a significant or near-significant ($p < .10$) bivariate relation to a child-teacher interaction scale were entered as potentially independent variables in each equation. Statistical interaction effects were also examined. Interaction effects were interpreted according to the procedure recommended by Cohen and Cohen (1983) for interaction terms in multiple regression equations.

RESULTS

The pre-school teachers had some control over children's behaviour and were fairly satisfied with their job. Table 2 summarises the descriptive data on subjective conditions. The mean of pre-school teachers' perceived control in *Study I* was 3.36 (*SD* = 0.52). In *Studies II* and *III*, the mean was 3.7 (*SD* = 0.61), and in *Study IV* the mean was 3.38 (*SD* = 0.84). No difference in teachers' perceived control as a function of educational level was found in *Study I*. Teachers' intention to act was relatively high, but still showed some variation (*M* = 4.7, *SD* = 0.41). Higher educated teachers had higher intentions to act in the case of child problems. Table 2 presents the descriptive data on objective conditions.

Table 2

Descriptive statistics for Objective and Subjective conditions (Study 1). Objective and Subjective conditions related to Perceived control and Intentions to act

			Perceived control	Intention to act
	M	*SD*	*r*	*r*
Objective conditions				
Group size	20 children	7.3	-.02	.02
Age group			-.07	-.03
Professional experience	13.7 years	7.2	.04	.01
Parenthood	1.8 children	1.1	.06	.06
Age	39 years	9.2	.04	-.04
Subjective conditions				
Job satisfaction	3.62	0.66	.30***	.10
Centre physical quality	3.87	0.71	.29***	.16*
Social recognition	3.59	0.89	.19**	.10
Satisfaction with Education	3.41	1.05	.20**	.03

N = 188 *$p < .05$, ** $p < .01$, *** $p < .001$, two-tailed

Factors related to pre-school teachers' perceived control

Study 1

The subjective aspects of teachers' work were all significantly and positively correlated with teachers' perceived control (Table 2) and with each other, ranging from $r = .21$ to $r = .60$. The more satisfaction with different job conditions and education, the higher perceived control over child behaviour the teacher felt. Job satisfaction and Centre physical quality gave independent contributions in the prediction of teachers' perceived control, $\beta = .23$, $p < .01$ and $\beta = .17$, $p < .05$, respectively. Together, 13 % of the variance in teachers' perceived control was accounted for by the four predictor variables, $F = 6.88$, $p < .001$.

Further, teachers' intention to act was significantly correlated with teachers' perceived control, $r = .34$, $p < .001$. Teachers' intentions to act and perceived control were both significantly related to Centre physical quality (Table 2). A multiple regression analysis revealed that perceived control acted as a mediator in the relation between the centre's physical quality and teachers' intention to act.

Study II

The percentage of children with a high level of externalising behaviours and of boys in the classroom were both related to teachers' perceived control, $r = -.55$, $p < .001$, and $r = -0.44$, $p < .01$, respectively. Perceived control was not significantly correlated with level of internalising behaviour in the classroom, $r = -.21$, class size, $r = -.08$, and child to adult ratio, $r = .10$.

The proportion of children with a high level of externalising behaviours and of boys in the classroom both gave independent contributions to the prediction of teacher's perceived control, $\beta = -.54$ and $\beta = -.42$, respectively, ps $< .001$, together explaining 45% (adjusted for number of subjects and variables) of the variance in teachers' perceived control.

The distribution of children with regard to externalising and internalising behaviours at T1 and T2

The distributions of children with a high/low level of externalising and internalising behaviours at T1 and T2 are presented in Figures 1 and 2. Descriptive statistics (*M* and *SD*) using the 5-point scale for externalising behaviours in the different groupings of children are also shown.

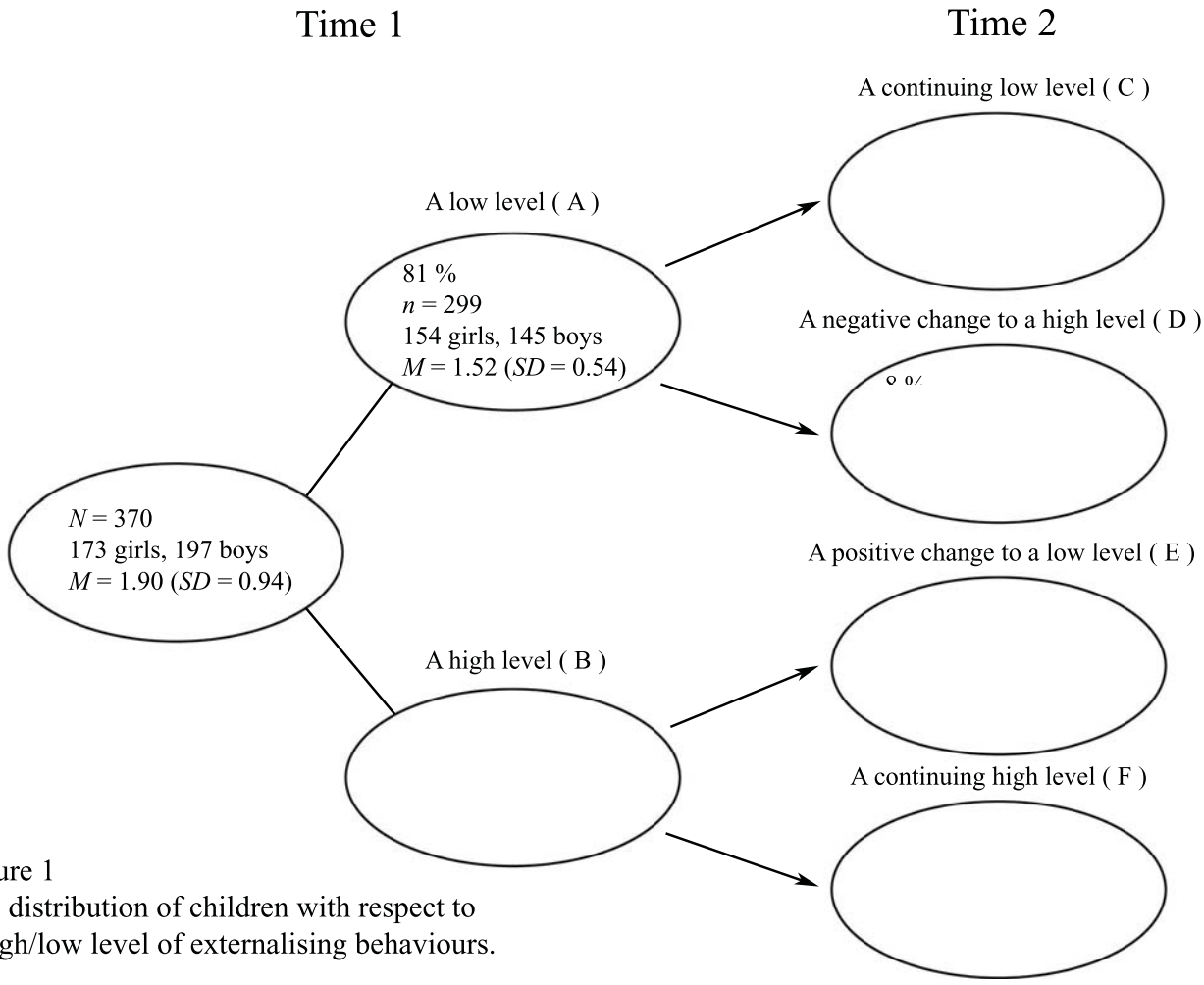

Figure 1
The distribution of children with respect to
a high/low level of externalising behaviours.

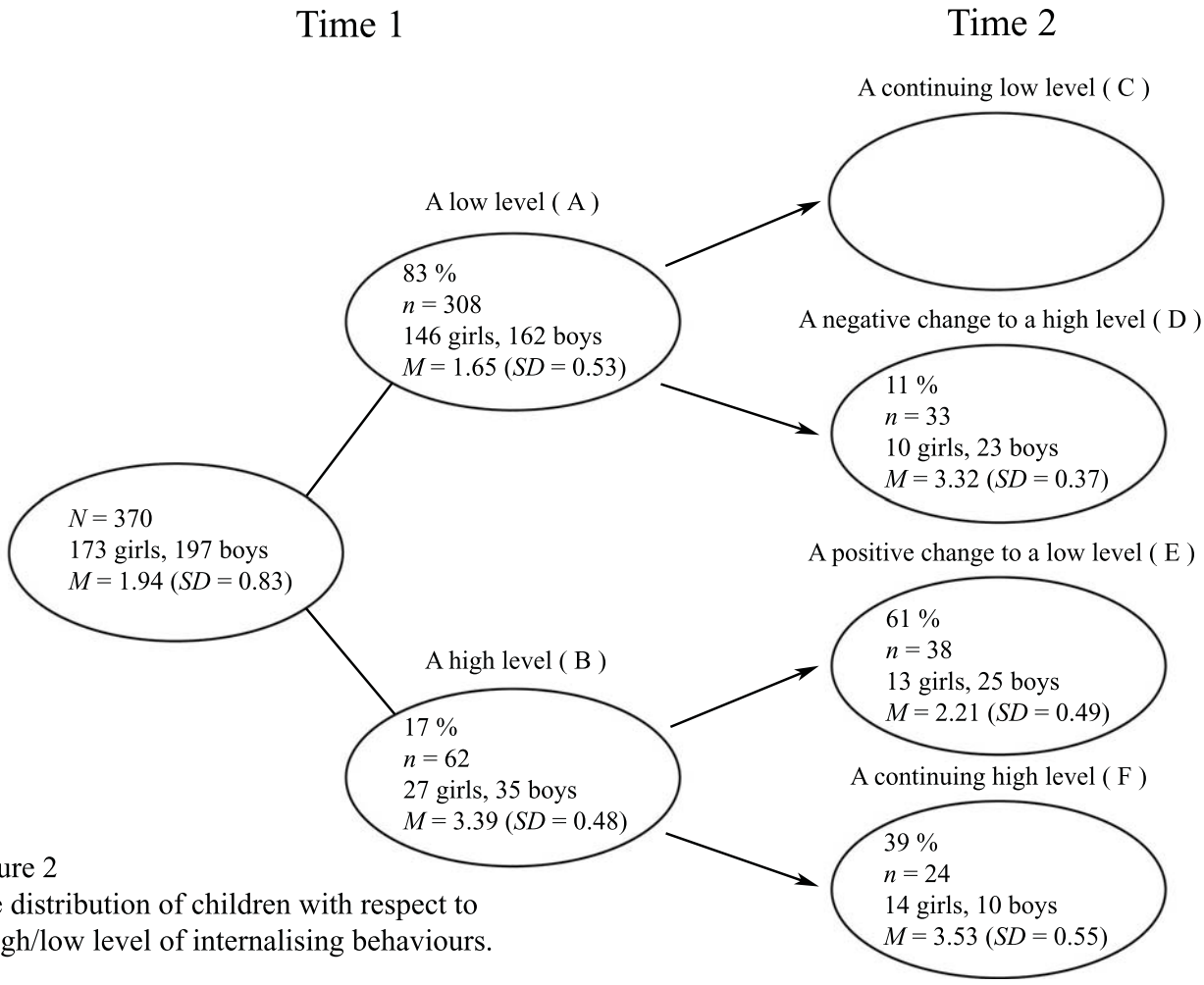

Figure 2
The distribution of children with respect to
a high/low level of internalising behaviours.

Factors related to problem behaviours at the beginning of the year

The two-way ANOVAs showed that children who had a low level of *externalising behaviours* at T1 had teachers with higher perceived control than children with a high level of externalising behaviours, $F(1,366) = 14.87$, $p = .0001$. An interaction effect (sex x group) was also found for the proportion of boys to girls, $F(1,366) = 3.97$, $p < .05$. The interaction indicated that girls who had a low level of externalising behaviours were found in classrooms with a lower proportion of boys as compared with the three other groups of children.

The corresponding two-way ANOVAs for *internalising behaviours* at T1 showed that children who had a low level of internalising behaviours also had teachers with high perceived control, $F(1,366) = 4.97$, $p < .05$. Further, children who had a low level of internalising behaviours were found in classrooms with a high number of children, $F(1,366) = 4.26$, $p < .05$.

Factors related to change and continuity of problem behaviours

Externalising behaviours

In terms of product-moment correlations the individual stability of a high/low level of externalising behaviours was intermediate for both boys and girls, $r(195) = .59$, and $r(171) = .51$, respectively, ps $< .001$. More boys than girls were rated as having a high level of externalising behaviours at both T1, $t(353) = 3.9$, and T2, $t(328) = 5.3$, ps $< .001$.

Negative change. To study negative change in externalising behaviours analyses were performed for children in groups C and D (Figure 1). Chi-square tests showed a significant difference between boys and girls in negative change of externalising behaviours, $X^2(1, n = 299) = 8.84$, $p < .01$. Boys were more likely than girls to change in a negative direction. Two-way ANOVAs did not reveal any factors related to a negative change; no main or interaction effects were found.

Positive change. To examine a positive change in externalising behaviours children in groups E and F were analysed. Chi-square analysis indicated a significant difference between boys and girls in positive change of externalising behaviours, $X^2(1, n = 71) = 4.11$, $p < .05$. Boys, in comparison with girls, were less likely to change their externalising behaviours in a positive direction. Neither the teacher's perceived control nor structural variables were associated with a positive change.

Continuity. In an effort to further study factors related to continuity of externalising behaviours children who did not change level of problem behaviour from T1 to T2 were compared (groups C and F). Children who had a continuing high level of problem behaviours had teachers with lower perceived control than children who showed a continuing low level of problem behaviours, $F(1,319) = 10.11$, ($p < .01$). Furthermore, there was a near-significant interaction ($p < .10$) effect (sex x group) for child to adult ratio, $F(1,319) = 3.41$. This trend indicated that girls who had a continuing high level

externalising behaviours tended to belong to classrooms with higher child to adult ratios than boys who had a continuing high level of problem behaviours. Children who had a low level of externalising behaviours belonged to classrooms with child to adult ratios falling in between the two groups of children with a high level of externalising behaviours.

Internalising behaviours.

The individual stability for internalising problem behaviours was low for boys, $r\,(195) = .15$, $p < .05$ and intermediate for girls, $r\,(171) = .47$, $p < .001$. There were no significant differences between boys and girls, neither at T1, nor at T2, $t\,(368) = 0.76$.

Negative change. To study a negative change in internalising behaviours, analyses were performed for children in the groups C and D (see Figure 2). Chi-square tests showed a significant difference between boys and girls for a negative change in internalising behaviours, $X^2\,(1, n = 308) = 4.33$, $p < .05$. Boys were more likely than girls to change from a low level to a high level of internalising behaviours. The two-way ANOVAs performed to study factors related to a negative change revealed a main effect of sex for teachers' perceived control, $F\,(1,304) = 5.64$, $p < .05$. Boys had teachers with lower perceived control when compared with girls in these groups. No other main or interaction effects were found.

Positive change. Children in groups E and F were examined to study a positive change. There was a tendency for more boys than girls to change internalising behaviours in a positive direction, $X^2\,(1, n = 62) = 3.48$, $p < .10$. A low child to adult ratio was associated with a positive change in children's internalising behaviours, $F\,(1,58) = 9.15$, $p < .01$. No other main or interaction effects were observed.

Continuity. To study factors related to continuity of a high level of internalising behaviours children in groups C and F were analysed. A main effect of group on class size was noted, $F\,(1,295) = 5.07$, $p < .05$. Children with a continuing low level of internalising behaviours were found in classrooms with a higher number of children than those who had a continuing high level of problem behaviours. No other main or interaction effects were found.

Possible effects of class size

In *Study III*, 370 children (in 22 classrooms) formed the unit of analysis. Teachers' perceived control and structural variables in the classroom were thus not independent observations in the analyses. Therefore, two-way ANCOVAs were carried out with class size controlled for, sex and group as factors, and perceived control, class size, and ratio as dependent variables. These analyses showed small deviations from those findings reported above. All significant and near-significant results remained. *F*-values were somewhat lowered; range of changes was $1.40 - 0.01$ in all but one analysis. The exception concerned internalising behaviours at T1; the *F*-value for the main effect for teachers' perceived control, when class size was controlled for, increased from 4.97 to 6.49 (both ps $< .05$). Concerning continuity of externalising problem behaviours, a

tendency for a (sex x group) significant interaction was found for the proportion of boys to girls when class size was controlled for, $F(318) = 2.74$, $p < .10$. The interaction indicated a tendency for a continuing low level of externalising behaviours in girls when they belonged to classes containing a small proportion of boys.

Child – teacher interactions

A visual inspection showed that the selection procedure of children to be observed had not yielded higher mean values of externalising/internalising behaviours on the 5-point scales as compared with teacher ratings on the entire sample. Ten child-teacher interaction scales (listed in Table 3) were deemed usable for analyses. The other five child-teacher interactions (the three internalising scales and two off-task scales) occurred too infrequently in the observations to be used for analyses. Concerning the total number of interactions observed, there was no significant difference between the three groups of children selected to represent different behaviour characteristics. A clear preponderance of supporting teacher behaviours was shown in all three groups. Even externalising behaviours were met with teacher support behaviours more often than they were met with restrictive and command behaviours. This pattern of teacher responses was most pronounced for children in the overcontrolled group.

Bivariate relations between teachers' perceived control, sex of the child, child behaviour characteristics, and classroom interactions

Two of the observed child-teacher interactions were significantly or near-significantly correlated with teachers' perceived control, externalising – command interactions, $r(90) = -.33$, $p < .01$, and positive – command interactions, $r(90) = -.17$, $p < .10$. Externalising and positive behaviours were more often responded to with commands if teachers had low perceived control. Correlations between on-task – command interactions and work efficiency $r(90) = -.27$, $p < .01$ and social competence $r(90) = -.22$, $p < .05$ showed that on–task behaviours were seldom responded to with commands when children were described as high in work efficiency and social competence.

GLM ANOVAs with planned contrasts between the children selected as undercontrolled and the other children showed significant differences ($ps < .05$) in interactions initiated by externalising behaviours. Such interactions were more frequently observed in the group of children selected as undercontrolled. When externalising behaviours were followed by teacher support the F-value was (1,89) = 7.14; when followed by teacher restrict, the F-value was (1,89) = 7.67; and when followed by teacher command, the F-value was (1,89) = 5.03. Further, children selected as undercontrolled were involved in more positive – restrict interactions than other children, $F(1,89) = 9.96$.

Near-significant differences ($ps < .10$) were obtained between children selected as overcontrolled and other children for externalising – support interactions, $F(1,89) = 3.37$, and externalising – command interactions, F (1,89) = 3.00. Children selected as overcontrolled were involved in fewer such interactions. However, these children were more often involved in on-task – command interactions, F (1,89) = 4.14. Finally, a

difference was found in the positive – restrict interactions, F (1,89) = 5.61, in which children selected as overcontrolled were seen less often.

The *t*-tests showed that boys were significantly more often involved than girls (*p*s < .05) in externalising – support interactions, t (58) = 2.68, externalising – command interactions, t (61) = 3.07, and positive – restrict interactions, t (86) = 2.19. There was a trend in which boys were more often than girls involved in externalising – restrict, t (57) = 1.91 and on-task - restrict interactions, t (86) = 1.72 (*p*s < .10).

The child-teacher interactions: off-task – support, on-task – support, and positive support interactions were not significantly related to any of the predictor variables in the bivariate analyses.

Independent predictors and explained variance

Five child-teacher interactions were related (*p*s < .10) to more than one of the predictor variables. Multiple regression analyses (Table 3) demonstrated independent effects of teachers' perceived control and sex of the child on externalising – command interactions. The total amount of explained variance was 19%. The amount of explained variance in the other interactions was about 10%. Undercontrolled behaviour characteristics independently predicted the externalising – restrict and the positive - restrict interactions. None of the predictors gave an independent contribution to externalising – support interactions or to on-task – command interactions.

Statistical interactive effects

An examination of possible interactive effects of teachers' perceived control and sex of the child on the 10 child-teacher interactions showed a significant statistical interaction effect on externalising – command interactions, β = -.39, p < .001. The analysis revealed that boys who had teachers with low perceived control were met more often with commands than boys those teachers had high perceived control, whereas girls were involved in such interactions to the same low extent as boys who had teachers with high perceived control. As there was a significant correlation r (90) = .34, p < .001 between sex of the child and undercontrolled behaviour characteristics, a possible confounding effect was examined. A regression analysis, controlling for undercontrolled characteristics, yielded β = .06 (ns) for that variable. Thus, the analysis did not change the conclusion about the interaction effect of perceived control by sex on externalising – command interactions.

Interaction effects between perceived control and undercontrolled/overcontrolled behaviour characteristics on the child-teacher interactions were also assessed. A significant interaction effect was found between overcontrolled behaviour and perceived control on off-task – support interactions, β = .33, p < .01. Children rated as overcontrolled with high-perceived control teachers were more often met with support when they were off-task in comparison with such children who had teachers with low perceived control.

Table 3

Child-teacher interactions. Results of multiple regression analyses with observed child-teacher interactions regressed on Teacher perceived control and child characteristics.

Interaction	Predictors	β	R^2
Externalising - support	Child undercontrolled behaviour	.19	
	Child overcontrolled behaviour	-.07	
	Sex	.17	.10*
Externalising - restrict	Child undercontrolled behaviour	.25*	
	Sex	.10	.09*
Externalising – command	Teacher perceived control	-.30**	
	Child undercontrolled behaviour	.06	
	Child overcontrolled behaviour	-.05	
	Sex	.25*	.19**
Off-task – support			
On-task – support			
On-task – restrict	Sex	.16	
On-task – command	Child overcontrolled behaviour	.08	
	Child work efficiency	-.23	
	Child social competence	.01	.08+
Positive – support			
Positive – restrict	Child undercontrolled behaviour	.23*	
	Child overcontrolled behaviour	-.11	
	Sex	.11	.11*
Positive – command	Teacher perceived control	-.17+	

$N = 92$ $+p < .10$, $*p < .05$, $**p < .01$

Potential confounding effects of class size and child to adult ratio on child-teacher interactions

Because of a large variation of class size and child to adult ratio, potential confounding effects of these variables on the relations of child and teacher interactions were examined. Class size correlated significantly or near-significantly with all three interactions initiated by child externalising behaviours, *r* (90) range .19 - .23, and with positive – support and positive – restrict interactions, *r*s (90) = .26 and .24, respectively. The larger the group, the more interactions of these types were observed. Child to adult ratio correlated significantly with on-task – support interactions, *r* = -.31, indicating that more children per teacher was associated with fewer on-task – support interactions. Partialling out the effects of size and ratio in the correlations between predictors and interactions did not change the pattern of significant and near-significant bivariate relations described above.

To further examine confounding effects of class size this variable was controlled for in the regression analyses. Class size was entered in each of the regression equations with a child-teacher interaction scale that was correlated with class size. The only change concerned the positive - restrict interactions. The previously significant β coefficient for undercontrolled behaviour characteristics was lowered to .21, $p < .06$.

DISCUSSION

A first step was taken in *Study I* to investigate whether teachers' actions/behaviours could be related to their perceived control by studying their intention to act. Teachers' high perceived control was related to a higher readiness to act in case of child behaviour problems. In *Studies I* and *II*, potential predictors of pre-school teachers' perceived control were examined. The subjective aspects of teachers' work, their satisfaction with different job conditions, and with education were positively related to their perceived control, whereas the objective conditions, professional experience, and structural conditions in the classroom were unrelated to perceived control. A high proportion of children with a high level of externalising behaviours and of boys (regardless of level of externalising behaviours) in the classroom was found to be associated with teachers' low perceived control.

In *Study III*, change/continuity of problem behaviours were investigated in relation to teachers' perceived control and structural conditions in the classroom. Analyses of the data revealed that a high level of both externalising and internalising behaviours at the beginning of the year were related to teachers' low perceived control. When change/continuity of problem behaviours were examined, a relation with perceived control was only found for continuity of externalising behaviours. Children who had a continuing high level of externalising behaviours had teachers with significantly lower perceived control than those who had a continuing low level of such behaviours. A near-significant interaction effect indicated that girls who had a high level of externalising behaviours at the beginning of the year belonged to classes with a higher proportion of boys than the other three groups of children. Further, a near-significant interaction effect, sex by group, suggests that girls with continuing externalising problem behaviours belonged to classrooms with a lower child to adult ratio than the other three groups of children. For change in externalising behaviours, no relations with teachers' perceived control, nor with structural conditions, were found. Concerning internalising behaviours, a positive change was related to a low child to adult ratio, whereas a continuing low level of internalising behaviours was related to a large class size.

In *Study IV*, a second step was taken to examine the relation between teacher behaviour and teachers' perceived control. The role of teachers' perceived control, teachers' perceptions of children's behaviour characteristics, and the sex of the child for naturally occurring child-teacher interactions were examined. Only those results in *Study IV* that are related to perceived control and problem behaviours will be

discussed in the following. Teachers' perceived control was significantly or near-significantly related to two types of child-teacher interaction, namely externalising – command and positive – command interactions. Higher frequencies of such interactions were connected to teachers' low perceived control. A statistical interaction effect (i.e. perceived control by sex), on externalising – command interactions showed that boys' externalising behaviours were more often responded to with commands when teachers had low perceived control compared with when teachers had high perceived control. Girls' externalising behaviours were met with commands to the same low extent as boys who had teachers with high perceived control. Further, a relation between perceived control and off-task - support interactions was found in a statistical interaction effect between perceived control and teacher rated overcontrolled behaviour, showing that overcontrolled children's off-task behaviours were more often met with support when teachers had high perceived control. Relations were found between male sex and all interactions involving child-initiated externalising behaviours. Children whom teachers perceived as having undercontrolled behaviour were more often met with restricting teacher responses to externalising and positive child behaviours than other children.

Teachers' satisfaction with different facets of their work was found important for their perceived control over children's behaviour. The satisfaction scales reflect resources of the child care centre as well as the teachers' own resources and opportunities to perform in work (cf. TPB, Ajzen, 1991). The general job satisfaction scale included stress-related facets of the pre-school teachers' work. In the teaching situation, which is regarded as one of the most stressful occupations (Halpin, Harris, & Halpin, 1986), a teacher has to deal with many situations over which the teacher might feel that she or he has little control (Feeney & Chun, 1985). Work-related stress has been found to be negatively related to teacher efficacy and internal locus of control (Fuqua & Couture; 1986; Halpin et al., 1986; Parkay et al., 1988). The resources of the centre, such as support from colleagues, could be important for teachers' feelings of security and control. Another important aspect for pre-school teachers' perceived control was the physical quality of the centre. To supervise children could be important for pre-school teachers' perceived control over their group of children. Teachers' perceived control was also found to mediate between the physical quality of the centre and teachers' intention to act in the event of problems. It is reasonable that the physical quality of the centre gave the teacher higher perceived control that, in turn, led to higher intentions or opportunities to intervene.

The results of *Study II* provide evidence that a considerable part of pre-school teachers' perceived control pertains to the difficulty they have in handling large proportions of children with a high level of externalising behaviours, as well as in handling boys in the classroom. The independent effect of the proportion of boys to girls may stem from teachers' experiences and expectations of boys being salient in the classroom for other reasons than externalising behaviours. Two possible candidates are boys' loud verbal expressions and their frequently expressed need for interaction with the teacher (Morgan & Dunn, 1988). Research indicates that

teachers' confidence in handling boys' misbehaviour is lower than their confidence in treating girls' misbehaviours (Stephenson et al., 2000). Thus, in comparison with girls, boys might be perceived as demanding and craving more of the teacher's attention and resources (Ebbeck, 1984). According to the teacher ratings (*Study III),* boys were not only prone to more externalising behaviours than girls, but also to a negative change in both externalising and internalising behaviours. Such negative development for boys has been suggested to be partly contingent on higher achievement demands for boys than for girls in spite of boys' later maturation (Gillberg, 1994). Burts and colleagues (1992) found, for instance, that males exhibited more stress behaviours in classrooms with inappropriate curricula, where emphasis was put on paper-and-pencil activities than in classrooms with few of these activities.

A high level of externalising behaviours at the beginning of the pre-school year and a continuing high level of such behaviours were both significantly related to teachers' low perceived control. The implication of this finding is that teachers who experience initial problems with their group of children (and thus might have low perceived control) are likely to have continuing problems throughout the year (cf. Gettinger, 1988). Teachers' self-reported characteristics, including being structured and clear, were positively related to teachers' perceived control in the present sample $r\,(35) = .49$, $p < .01$ (unpublished data). This suggests that teachers' style of running their group of children could be related to their perceived control. Children who are prone to problem behaviours may not as easily exhibit problem behaviours in classrooms, where teachers are clear and structured and activities are well-organised (cf. Gettinger, 1988; Weinstein, 1997). Teachers could perhaps also intervene and motivate individual children differently depending on their perceived control. Skinner and Belmont (1993) found that teachers could compensate children who were less engaged in activities by increasing teacher involvement and structure.

The results of *Studies II* and *III* provide good evidence that teachers' perceived control does not relate to teachers' perceptions of internalising behaviours to the same extent as their perceptions of externalising behaviours. This could suggest that internalising behaviours seldom became disturbing or challenging to teachers' authority in the classroom, even though such behaviours can sometimes pose problems for teachers (cf. Morgan & Dunn, 1988). However, the relation between internalising behaviours in the classroom and teachers' perceived control needs to be further examined because longitudinal relations between internalising behaviours and perceived control have been found in parenting research (Hagekull et al., 2001). The initial analyses of observational data indicated that the observations did not capture enough instances of internalising behaviours to allow for a partitioning into different types of child-teacher interaction. Thus, we were unable to make inferences about the importance of teachers' perceived control for their responding to internalising behaviours.

The observations indicated that teachers' perceived control was related to teachers' responses to externalising behaviours. Externalising behaviours, and

sometimes also positive child behaviours, were more often met with commands when the target child had teachers with low perceived control. However, externalising – command interactions were found to be equally well explained by the sex of the child as by the teacher's perceived control. The interaction effect of perceived control by sex on externalising - command interactions seems to suggest that teachers had a higher need to direct the externalising behaviour of boys as compared with girls. A plausible reason for this result is that teachers fear a loss of control over the boys (Brophy & Good, 1971; Ebbeck, 1984; Oettingen, 1985). *Study III* indicated that the teachers had more problems with the boys than with the girls.

The unfortunate consequence of teachers' low perceived control in a group of children could be that teachers would be caught in unfavourable interaction patterns (e.g., an authoritarian style of teaching) in attempts to enhance their perceived control over their group of children (cf. Bugental, 1999). Parenting research indicates that low perceived control could be related to power assertive tactics and an authoritarian parenting style (e.g., Janssens, 1994). Accordingly, associations between teachers' low perceived control and restrictive teacher responses to children's externalising behaviours could have been expected. However, restrictive teacher responses to externalising behaviour were instead explained by the teacher's perception of the child as having undercontrolled behaviour. The disturbing effect of problem behaviours has been found influential to the management of problem behaviours (Papatheodorou, 2000). Restrictive responses were also sometimes given when these children behaved in positive manners. Negative expectancies for children who the teacher perceives as disturbing might be at work (e.g. Lewin, Nelson, & Tollefsson, 1983). Nespor (1987) pointed out that the belief system of teachers include affective components that could be easily activated. This might lead teachers to react critically to these children more often than to other children, including in non-problem situations (cf. Bugental, 1989). However, critical teacher responses were fairly uncommon in our observations. The atmosphere was, for the most part, positive and teachers responded most often to externalising behaviours with support such as explaining and reasoning.

Structural conditions

The results showed that the structural conditions in the classroom could be of importance for both change/continuity of problem behaviours, as well as for naturally occurring child-teacher interactions. Girls with a high level of externalising behaviours at the beginning of the year were found in classes with a significantly higher proportion of boys than other groups of children. After controlling for class size, a similar interaction effect was noted for a continuing high level of externalising behaviour in girls. A high child to adult ratio was also found to be of some relevance for a continuing high level of externalising behaviours in girls. None of the structural conditions seemed to relate to ratings of boys' externalising behaviours. In contrast, children seemed to develop positively with respect to internalising behaviours in large groups. It is possible that the teachers failed to notice internalising behaviours in these groups. However, it could also be a result of that children had more training in

socialising with other children as a consequence of a higher number of peers in combination with the longer periods of play that were common in the large classes. With many children in the classroom and more time to play, more interactions, both positive and negative, could eventually occur. For a positive change of internalising behaviours, however, only a low child to adult ratio seemed to be beneficial. The observations indicated that it could be easier for teachers to support an individual child working on tasks when the child to adult ratio was low. Fagot (1984) found that children who changed their internalising behaviours in a positive direction had teachers that initiated many behaviours with the child.

Taken together, *Studies III* and *IV* provide some support for the belief that class size and child to adult ratio are related to teacher and child processes. It is important to note that our results concern problem behaviours and that these structural conditions could be more important relative to children's cognitive development (cf. Finn & Achilles, 1990). Research has not found substantial evidence of the importance of structural variables for behaviour problems (e.g., Bremberg, 2001; Dunn, 1993b). Scarr et al. (1994) suggested that class size and child to adult ratio are not always sufficient to predict teacher and child processes and Dunn (1993) proposed that structural variables should be combined with other features of quality.

Methodological considerations

The strength of the present data is that a relatively large number of teachers and children participated in the studies and the pre-school teachers' rated almost all children in their classrooms; the number of parents who declined participation limited the sample by only six children. However, the teachers participated on a voluntary basis; it could be speculated that some of them who declined participation because of a high workload might have had lower perceived control than those who participated in the study. Schools from different areas were included, which may be an argument for suggesting that the results could be generalised to other pre-school teachers in rural, suburban, and urban areas in Sweden. The results might also be of interest in other countries where externalising behaviours and boys are perceived as problems to teachers. A strength of these data in *Study IV* was that information about children's problem behaviours was given by different informants, both teachers and an independent observer in the classroom.

Teacher ratings of problem behaviours

To be able to make inferences about changes in rated problem behaviours we used the same teacher as informant at both T1 and T2. This was done so that a positive or negative change in problem behaviours would not be due to different points of view of the raters (for a discussion, see Achenbach et al. 1987). However, using the same informant could contribute to stability rather than change. If ratings are performed by the same informant, the ratings not only reflect stability of child behaviour but also stable characteristics of the rater (Verhulst et al., 1994). Therefore, control analyses were conducted to assess whether the correlations between perceived

control and level of externalising behaviours differed significantly between the teachers who rated the children and those teachers who did not rate (the corresponding correlations for level of internalising behaviours were not significantly related to teachers' perceived control). The correlation between teachers' perceived control and level of externalising behaviours was somewhat higher in the group of teachers who rated the children, r (22) = -.61 as compared with the group of teachers who did not rate children, r (14) = -.46. However, there was no significant difference between the two correlations, z = 0.6. If the correlation had been significantly higher in the group of teachers who did the ratings, teachers' perceived control might have had an influence on teachers' ratings of externalising behaviours. Such a relation has been proposed (e.g., Meijer & Foster, 1988). Finally, *t*-tests showed that the teachers who rated children did not differ from those who did not rate children in perceived control, t (38) = 0.71, *ns*. Thus, teachers' perceived control could not be considered a confounding variable in the research. There was also another indication that teachers' perceived control could not be considered a confounding factor in the present ratings of children: namely, that perceived control was not related to change of problem behaviours in any direction.

Teacher ratings in *Study III* were dichotomised to better illustrate the development of problem behaviours in positive and negative direction. Due to measurement error this procedure may have created statistical regression effects, which might be an explanation to the relatively few significant results obtained in this study.

In *Studies II-IV,* different aspects of teacher ratings were emphasised. In *Study III*, teacher ratings were treated as giving a fairly objective view of child behaviour (see Mangelsdorf et al., 2000). We found support for such a view in that teacher agreement about problem behaviours was rather high and that the teacher ratings of the children who were observed correlated significantly with observations for externalising behaviour, r (90) = .30, $p < .01$, and r (90) = .22, $p < .05$ for internalising behaviour. This means that teacher ratings reflect child behaviours that are identifiable by others, both another teacher and an independent observer in the classroom. However, the modest correlation mean that child behaviours are not perceived in exactly the same way (subjective aspects, Mangelsdorf et al. 2000). In *Studies II* and *IV* the ratings were regarded more as subjective perceptions of the children. We were concerned with how teachers have understood, experienced, and responded to different child characteristics.

Direction of effects

The precise direction in the studied relations cannot be known in the present work. The subjective experiences, such as teachers' satisfaction with different work conditions, could precede teachers' perceived control, but could be bi-directional as well. To make casual inferences in *Study II* would be impossible. Teachers' experiences of children with a high level of externalising behaviours and a high proportion of boys could reflect past experiences, in addition to current and anticipated obstacles and difficulties that all relate to their perceived control (cf.

Ajzen, 1991). The quality of data in *Study II* could be further enhanced if information from different informants would have been collected. Independent observations of children's problem behaviours in the classroom could be added to avoid the phenomenon of common method variance when using teacher reports only. In *Study III*, the direction of change could be inferred because children were rated twice by their teachers (see McGuire & Richman, 1987). The partitioning of children into different groupings depending on weather they changed level of problem behaviours or not made it possible to make inferences about the importance of teachers' perceived control and structural conditions for change/continuity of problem behaviours.

The problem of dependent observations

In *Studies I and II*, teachers formed the unit of analysis. Each teacher had a unique score of perceived control. In *Study I*, the predictors of teachers' perceived control also had a unique score. In *Study II*, the scores of the predictors were not independent observations as some teachers taught in the same classrooms. This lack of independence could cause statistical problems. To examine effects of the dependency between observations class size was controlled for, which marginally lowered the amount of explained variance in perceived control from 45% to 44%. In *Studies III and IV,* this statistical problem again was handled by controlling for class size, which did not change the conclusions about of the importance of teachers' perceived control, child to adult ratio, and the sex of the child for change/continuity of problem behaviours and naturally occurring child-teacher interactions. In *Studies III* and *IV*, teachers' perceived control in a classroom was the average perceived control a child met. Statistically, the averaging of variables across persons normally deflates coefficients. Thus, we might have observed higher relations with perceived control if all studies had been performed on a teacher based unit assessment. However, the averaging of teachers' perceived control could be seen as mirroring reality in which all teachers in a classroom contribute to a general level of control.

Conclusions

- The strongest findings of this research were that teachers' low perceived control was related to externalising behaviours and male sex.

- Teachers with high perceived control were actively engaged in children's behaviour problems. The physical quality of the centre was an important aspect for pre-school teachers' intention to act.

- The subjective aspects of teachers' work were important for their perceived control, whereas the only objective condition that was found important was the proportion of boys to girls in the classroom.

- Responses with commands to children's externalising behaviour were related to the teachers' perceived control, whereas restrictive responses were not related to perceived control.

- We found some support indicating that classrooms with low child to adult ratios could be preferred over other classrooms. A low child to adult ratio was related to a positive change in internalising behaviours. No clear recommendations could be made with regard to class size. Children who had a continuing low level of internalising behaviours belonged to large classes, but children who belonged to small classes did not exhibit less externalising behaviours.

- None of the structural variables were important for externalising behaviours in boys.

In this research many of the initial hypotheses were supported or partly supported. One exception was that teacher's perceived control was not related to change of problem behaviours. Furthermore, teachers' professional experience, age, and parenthood were not related to teachers' perceived control.

The present research indicates that teachers' perceptions of children are important for their perceived control over their group of children. Responding to problem behaviours may be explained by teachers' perceptions of children as well as their perceived control. Teachers could have a high potential to break a trend of negative child behaviours if these are responded to properly (Chazan et al., 1983). Achenbach et al. (1987) suggested that interventions might sometimes be more appropriate by focusing on the teachers' perception of or behaviour toward a child; this, in turn, could contribute to the possibility that some problem behaviours will not be expressed in the teacher's classroom. Research aiming at a further understanding of teacher and child processes connected with teachers' perceived control is warranted. If these processes could be understood, research could search for methods to enhance teachers' perceived control.

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APPENDIX

Items in the Different Scales (R) = Reversed in Scoring)

Teacher Control of Child Behaviour (*Study I*)

I always feel in control when it comes to my group
Some children's behaviour is more than I can handle (R)
Sometimes I feel hopeless about certain children in the group (R)
It is often easier to let a child have his or her way than to put up with a tantrum (R)
I find that sometimes children can get me to do things I really did not want to do (R)
Some children behave in a manner very different from the way I would want them to behave (R)
Sometimes when I'm tired, I let children do things that I normally wouldn't allow them to do (R)
I often feel that I do not have enough control over the direction my group of children is taking (R)
I allow children to get away with things (R)
It is not too difficult to change a child's mind about something

Teacher Control of Child Behaviour (*Study II-IV*)

I often feel that I do not have enough control over the direction my group of children is (R)
Some children often behave in a manner very different from how I want them to behave (R)
Some children in my group do things that I do not know how to handle (R)
I find that sometimes children can get me to do things I really do not want to do (R)
Some children control my work in this group of children (R)
Sometimes I feel hopeless about certain children in the group (R)
Sometimes when I am tired I let children do things I normally would not let them do (R)

Intention to Act

Most preschool age behavior problems disappear by themselves in time (R)
The younger the child, the easier to do something about behavior problems
It is better to wait and see with preschoolers' behavior problems until school age when it is easier to deal with them (R)
Persons working with children should address problems with children because ignoring them won't make them go away
Children have their own way of being without you being able to do anything about it (R)
Even if a child frequently tantrums, you should never give up
There is nothing to do about children getting tantrums

Job Satisfaction

In the child group where I work there are too many children (R)
In the child group where I work there are too few teachers (R)
During the day, I have some time to relax completely
When going to work in the morning, I feel fine (R)
When I come home, I have some energy left for my family or for leisure activities

Appendix cont´d

My tasks at work are engaging and stimulating
My tasks at work are varied
My work places too high demands on me, e.g., too much responsibility, too difficult or the tasks are unclear (R)
I feel anxious about my work with regard to, e.g., my work situation, reorganisations, and requirements for new teaching methods (R)
I am pleased with the distribution of work in my workplace
On the whole, I am pleased with the working conditions in my workplace
I have an influence on the pedagogical strategies where I work

Centre Physical Quality

The classroom and surrounding localities in which I work are suitable for pre-school activities
I have the pedagogic material necessary to perform a good and satisfying job
I have the necessary supplies and material

Recognition

People let me know when I have done a good job
My contact and collaboration with superiors at work are good
The collaboration and feelings of solidarity are good at my job

Education

My education has made me well prepared for the tasks I face in real life

Externalising problem behaviours (abbrevations of items)

Restless
Squirmy
Destructive
Poor concentration
Fights
Irritable/tantrums
Disobediant
Does not share
Bullies
Gives up easily
Inattentive
Lies
Kicks, hits
Inconsiderate
Blame others

Internalising problem behaviours (abbrevations)

Unhappy
Worries
Stares into space
Fearful
Finical
Tearful

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