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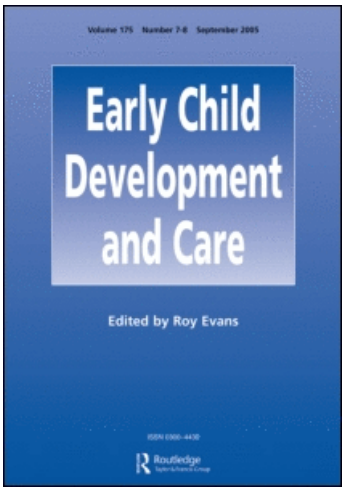

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A typological approach to the study of parenting: associations between maternal parenting patterns and child behaviour and social reception

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A typological approach to the study of parenting: associations between maternal parenting patterns and child behaviour and social reception

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The present work addresses the associations between self-reported maternal parenting behaviours and aggression, personality and peer regard of children (n = 119) in early childhood (ages three–six years). A k-means cluster analysis derived types of mothers based on their relative use of autonomy support and restrictive control. Outcomes included mother and teacher reports of physical and relational aggression, personality and peer acceptance as well as a peer nominations procedure for social reception. As hypothesised, children of mothers who report demonstrating little autonomy support and high restrictive control were more aggressive, less agreeable, conscientious, extraverted, and less well accepted by their peers. Findings are discussed in terms of maternal attributions of maternal behaviour, child behaviour in multiple contexts, and differential perceptions of mothers and teachers.

Keywords: cluster analysis; parenting; aggression; peer acceptance

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Introduction

Adaptation in one ecological domain of functioning is known to be embedded within larger domains of functioning; hence, one might expect strong effects of family functioning on children's behaviour in peer contexts (Bronfenbrenner, 1986). Namely, parenting behaviours have been shown to influence children's behaviour and personality, and parent–child interactions influence social development and future peer interactions (Brook, Zheng, Whiteman, & Brook, 2001; Clark & Ladd, 2000; Eisenberg et al., 2001; Gadeyne, Ghesquiere, & Onghena, 2004; Ladd & Kochenderfer Ladd, 1998; Laible, Carlo, Torquati, & Ontai, 2004; Prinzie et al., 2004; Querido, Warner, & Eyberg, 2002). Although the exact mechanism by which this occurs is unknown, parenting patterns and behaviours may affect child behaviour by helping or hindering social development and the internalisation of rules. Maternal parenting practices characterised by the lack of clear rules, boundaries, explanations, or warmth and general inconsistency may undermind child autonomy.

Key outcomes of interest for developmentalists and interventionists include measures of aggression and peer regard outcomes such as acceptance. If a child's standing in the peer group and concomitant psychological outcomes are a direct function of the child's aggressive behaviour, then aggression should be ardently targeted

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for amelioration (but see Hawley, Johnson, Mize, & McNamara, 2007). Of particular interest of late are the respective implications for peer functioning of relational and physical aggression in early childhood (e.g. Casas et al., 2006; Crick et al., 2006; Estrem, 2005; Ostrov & Keating, 2004). While physical aggression (e.g. hitting, physical force) has long been known to be associated with poor social outcomes for both victims and perpetrators (see Kagan & Moss, 1961), more recently similar patterns have emerged for relational aggression (e.g. social exclusion; Crick & Grotpeter, 1995; Ostrov & Keating, 2004; Ostrov, Woods, Jansen, Casas, & Crick, 2004). Furthermore, though family ecology variables such as parenting and conflict have long been linked to overt or physical aggression (see Gable, Belsky, & Crnic, 1992), only recently have relational aggression scholars linked parenting variables to this more subtle form of aggression (e.g. Brown, Arnold, Dobbs, & Doctoroff, 2007; Casas et al., 2006; Nelson, Hart, Yang, Olsen, & Jin, 2006; Werner, Senich, & Przepyszny, 2006).

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Methodological approaches to the study of parenting

There are two main approaches commonly used to study parenting: the dimensional approach and the typological approach. The dimensional approach seeks to measure separate dimensions of parental attitudes and behaviour to explore their effects on outcomes. One limitation to this method is that looking at the pairwise relations of single-parenting dimensions and single-child outcomes only can yield a very limited understanding of the complex parent–child environment as a parent likely uses multiple behaviours, or a parenting pattern to rear children. The typological approach, on the other hand, seeks to classify individuals into groups with similar types of parenting derived from multiple theoretically meaningful variables (e.g. Baumrind's Tripartite Model of Parenting Style). An advantage of this approach is that the association of any particular pattern is based on the interaction of a number of dimensions (rather than a single dimension) of parenting. Because parents are likely to use multiple behaviours to parent children, this approach may provide a more complete representation of the associations between maternal parenting and child behaviour. Therefore, the present study will examine the associations between maternal parenting patterns and child behaviour using a typological approach to identify maternal parenting patterns based on mothers' relative use of restrictive control and firm autonomy support.

Key dimensions of parenting in the literature include constructs reflecting parental acceptance or responsiveness, demandingness or control (Cummings, Davies, & Campbell, 2000; Maccoby & Martin, 1983), and emotional warmth (Maccoby & Martin, 1983). Perhaps best known is Baumrind's person-centred[1] analytical approach (1966, 1971), which is based on the relative use of responsiveness and control. The authoritative parenting style, characterised by high responsiveness and high control, identified by Baumrind has most consistently been associated with instrumental competence in European American samples, while Baumrind's authoritarian parenting, characterised by low responsiveness and high control, is more commonly associated with negative outcomes in young children (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Querido et al., 2002).

In addition to these parenting styles, other dimensions have become the focus of investigation in recent years. For example, autonomy support and coercion and

psychological control are identified as important aspects of child rearing and have shown both direct and indirect links to early childhood behaviour and development (e.g. Brook et al., 2001; Grolnick, Price, Beiswenger, & Sauck, 2007). Support for a child's autonomy has been associated with higher levels of self-regulation, greater academic achievement, higher levels of adjustment, fewer behavioural problems (Grolnick, Kurowski, Dunlap, & Hevey, 2000; Grolnick & Ryan, 1989; NICHD, 2008), and is related to increased friendship quality and peer acceptance (Clark & Ladd, 2000).

While autonomy support for young children is commonly associated with positive outcomes, controlling parenting behaviours are associated with more negative outcomes such as externalising behaviour (Bates, Pettit, Dodge, & Ridge, 1998). Theoretically, autonomy support encourages independence and allows young children to take an active role in their own problem solving. This may help them navigate the social world more effectively, resulting in positive social outcomes. Controlling behaviours, on the other hand, may have the opposite effect. Specifically, children who experience high levels of parental control may not have the opportunity to learn to navigate the social world on their own resulting in a less effective interaction style (i.e. more aggressive) and lower peer acceptance.

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Aims of the present study

Maternal parenting patterns are recognised to play an important role in child development and parenting patterns based on multiple dimensions are used to study the effects of parenting on social development (Gadeyne et al., 2004; Grolnick et al., 2007). Given the important role maternal parenting has on child development, the present study aims to illustrate the associations between maternal parenting patterns and child behaviour using a typological approach.

To achieve this, cluster analysis was used to identify patterns of parenting based on mothers' self-reported use of restrictive control and firm autonomy support in early childhood parent–child interactions. Because maternal reports of both parenting and child outcomes are affected by shared method variance, mother and teacher reports of child physical and relational aggression and personality as well as mother, teacher, and peer ratings of peer acceptance and peer ratings of rejection were examined. This allowed the authors to determine whether these relationships were consistent across reporters.

Parenting and aggression

There are reported links between parenting and early childhood behaviours, especially child aggression. Mothers' use of authoritarian and permissive parenting is associated with increased behaviour problems in children, while authoritative parenting is associated with fewer behaviour problems (Querido et al., 2002). Specifically, authoritarian parenting is positively associated with girls' use of relational aggression and permissive parenting is associated with relational and physical aggression for all children. But even these relationships have not proven to be consistent. For example, mother's use of authoritative parenting is linked with lower levels of physical aggression in girls, but not boys (Casas et al., 2006).

Parenting characterised by control may adversely affect early childhood development because the child may not have the opportunity to learn to make adaptive choices

on his or her own accord. For example, restrictive control, coercion, psychological control, and/or low emotionality are commonly associated with negative outcomes in early childhood; specifically, the high use of maternal restrictive control, harsh, or coercive parenting is associated with more externalising problems in children, including physical aggression (Brook et al., 2001; Chang, Schwartz, Dodge, & McBride-Chang, 2003; Gadeyne et al., 2004; Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998; Laible et al., 2004; Prinzie et al., 2004). Additionally, the use of psychological control to parent children is associated with higher relational and physical aggression among young children (Brook et al., 2001; Casas et al., 2006; Hart et al., 1998; Nelson et al., 2006) and overreactivity, laxness and negative affect expressed by parents are associated with increased relational aggression (Brown et al., 2007). In contrast, warm and responsive parenting is associated with lower levels of physical aggression (Brook et al., 2001; Hart et al., 1998) and higher levels of social competence (Laible et al., 2004) and positive affect displayed by mothers are predictive of lower levels of relational aggression (Brown et al., 2007). The present study will examine the relationships between maternal parenting patterns and both physical and relational aggression in early childhood.

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Parenting and peer acceptance

In addition to the relationships between parenting and aggression in early childhood, maternal parenting patterns may be associated with how well a child is received by his or her peers. Peer relationships are an important aspect of a child's development and predictive of current and future adjustment (Bagwell, Newcomb, & Bukowski, 1998; Bagwell et al., 2005; Crick & Ladd, 1993; Hoza, Molina, Bukowski, & Sippola, 1995; Ladd, 2006; Parker & Asher, 1987). Developmental research suggests that being liked by the peer group and having mutual friendships is commonly associated with positive outcomes, while being disliked is associated with negative outcomes (Hartup, 1996; cf. Hawley, 2003a). Given the importance of positive peer relationships for both current and future adjustment, it is important to explore the role parents play in a child's peer acceptance in early childhood as early interactions with parents may lay the groundwork for children to navigate the complex social world and set the stage for how a child will interact socially with his or her peers as he or she enters school, ultimately influencing peer acceptance in the long term.

Parenting characterised by autonomy support and warmth may support the development of adaptive and socially acceptable interaction patterns in early childhood. Additionally, positive parenting may foster the development of independence and assist the child in learning how to solve problems in the social world, which may positively affect peer acceptance. Specifically, strong and supportive parenting is associated with better peer outcomes. Connectedness, a component of which is warmth, and autonomy support are related to greater peer acceptance and friendship quality, and connectedness between mother and child is related to a greater number of friendships (Clark & Ladd, 2000). Other studies have found a positive link between maternal warmth and peer acceptance in boys, but not girls (Davidov & Grusec, 2006). Additionally, young children who experience little or no control in their interactions are at an increased risk for peer victimisation, whereas those who experience responsive parenting in which the child has a sense of control in interactions report less peer victimisation (Ladd & Kochenderfer Ladd, 1998). Last,

authoritarian parenting styles have been found to be negatively associated with peer acceptance (Pearson & Rao, 2003).

Parenting and personality

Although the links between parenting and aggression and peer acceptance are well documented, the relationship between parenting and child personality has received far less attention. Given that maternal parenting may have an effect on child's personality as well as the other social developmental outcomes in early childhood (Belsky, 1984), it warrants further exploration. One study that did address this relationship found that negative parenting was associated with children's personality when parents rated both their own parenting behaviours as well as their child's personality. Specifically, parent-rated parental overreactivity and laxness were negatively related to parent-rated extraversion, benevolence, conscientiousness, emotional stability and openness to experience in children. Additionally, parental use of coercion was negatively associated with benevolence and emotional stability in children (Prinzie et al., 2004). It is important to note, however, that this study was not exempt from problems of shared method variance as parents rated both parenting behaviours and child outcomes. The present study addresses this concern by including both mother and teacher ratings of child personality.

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Maternal vs. paternal parenting patterns

Although there are reported links between maternal and paternal parenting and early childhood behaviour, the associations among maternal parenting and child outcomes tend to be stronger and are more often reported. Furthermore, the associations between maternal and paternal parenting patterns and child behaviour may be altogether different. For example, differential effects of maternal and paternal parenting patterns have been found for peer acceptance as studies that have reported a link between maternal parenting and child's peer acceptance have reported no effects for paternal parenting on peer acceptance (Davidov & Grusec, 2006). Given these differential findings, the composition of the parent–child dyad is an important factor in elucidating the relationship between parenting and early childhood behaviour. Therefore, the present analyses will focus on the associations between maternal parenting patterns and behaviours and child behaviour and social reception.

Hypotheses of the present study

Using a typological approach to identify maternal parenting patterns, we hypothesise that meaningful clusters will emerge using the theoretically important variables of firm autonomy support and restrictive control. Second, we hypothesise that the parenting patterns derived from this cluster analysis will be associated with differential early childhood outcomes. Specifically, that parenting characterised by autonomy support and low restrictive control will be associated with positive child outcomes such as lower levels of aggression and higher levels of agreeableness, conscientiousness, extraversion, openness to experience and peer acceptance in early childhood. Conversely, we hypothesised that parenting characterised by low autonomy support and high restrictive control would be associated with higher levels of aggression, negative personality traits and lower levels of peer acceptance.

Method

Participants

Participants in the present analyses are part of a larger study that included 272 children aged three to six years old recruited from three preschools in Lawrence, KS and six preschools in New Haven, CT. A total of 13 classrooms with an average of 9 participating children per classroom participated in this study. Of this larger sample, 119 (43.7%) mothers completed a questionnaire regarding their own parenting behaviours as well as their child's physical and relational aggression, personality and peer acceptance. The participants in the present analyses did not differ from the larger sample in gender ($F(1, 270) = 1.50$; $p = .22$) or ethnicity ($F(1, 270) = .81$; $p = .37$). The sample in the present analyses did, however, differ from the larger sample on age ($F(1, 270) = 16.5$; $p < .0001$) such that participants in the present analyses were younger than the children in the larger sample ($M_{\text{present analyses}} = 4.34$, $M_{\text{larger sample}} = 4.76$).

Of the sample used in the present analyses, the average age of the children was 4.34 years ($sd = .75$). Chronological age was not significantly correlated with any variables used in the present study. Sixty-eight (57.14%) of the participants were female and 51 (42.86%) were male. Of this sample, 85 (71.43%) children were European-American, 23 (19.33%) were African or African-American, 6 (5.04%) were Asian or Asian-American, 4 (3.36%) were Hispanic, and 1 (.84%) participant was Native American. The average maternal age was 33.57 years ($sd = 6.40$). All procedures were approved by the University's institutional review boards, written parental consent was obtained for all participating children, parents, and teachers and child assent was obtained prior to the child interview. At least one teacher from each classroom participated.

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Procedure

Child outcomes. Participating mothers and teachers completed a multi-item questionnaire designed to assess aggression, personality and peer acceptance of the children. Mothers completed the questionnaire in relation to their child and teachers completed the questionnaire for each participating child. Mothers and teachers indicated how true certain behaviours were for each child on a seven-point Likert scale, ranging from hardly true (1) to mostly true (7). A multi-item aggression scale was designed to distinguish among the various forms (i.e. physical and relational) and functions (i.e. instrumental, dispositional, and reactive) of aggression (Little, Jones, Henrich, & Hawley, 2003; Little, Brauner, Jones, Nock, & Hawley, 2003). The two subscales identifying physical and relational aggression were utilised for the present work. Additionally, all forms and functions of aggression were combined to derive an overall aggression score.

Nine questions assessed *physical aggression* ($\alpha_{\text{Mother}} = .87$; $\alpha_{\text{Teacher}} = .95$). Examples include 'S/he starts fights to get what s/he wants' and 'S/he fights back when hurt by someone'. Nine questions assessed *relational aggression* ($\alpha_{\text{Mother}} = .79$; $\alpha_{\text{Teacher}} = .93$) some of which include 'S/he is the kind of person who ignores others or stops talking to them' and 'S/he keeps others from being in his/her group of friends if they have hurt him/her'. Last, the physical and relational aggression scales were combined to form a construct representing *overall aggression* ($\alpha_{\text{Mother}} = .88$; $\alpha_{\text{Teacher}} = .96$).

Additionally, mothers and teachers provided ratings of the children's personality as part of the multi-item questionnaire. *Extraversion* ($\alpha_{\text{Mother}} = .88$; $\alpha_{\text{Teacher}} = .96$)

included items such as 'S/he is extraverted/energetic'. *Openness to experience* (3 items; $\alpha_{\text{Mother}} = .65$; $\alpha_{\text{Teacher}} = .75$) included items such as 'S/he is open to experience/adventurous'. *Agreeableness* (3 items; $\alpha_{\text{Mother}} = .71$; $\alpha_{\text{Teacher}} = .76$) included items such as 'S/he is kind/agreeable'. *Conscientiousness* (4 items; $\alpha_{\text{Mother}} = .70$; $\alpha_{\text{Teacher}} = .83$) included items such as 'S/he is thorough/planful'. The personality dimension of neuroticism was dropped from the present analyses due to the low reliability of this construct in parent reports of their children's personalities.

Three items on the multi-item questionnaire completed by mothers and teachers assessed the child's *peer acceptance* ($\alpha_{\text{Mother}} = .59$; $\alpha_{\text{Teacher}} = .65$). Examples include 'S/he is accepted by others'. Peer-rated peer acceptance and peer rejection were obtained during the child interview using the standard sociometric nominations procedure described below. While among school-aged children, maternal ratings of peer acceptance are not appropriate, younger children (i.e. preschool/early childhood) spend a great deal of their time playing in the presence of parents and parents may closely monitor their peer interactions in early childhood. Therefore, maternal ratings of peer acceptance were deemed appropriate for this study. Additionally, maternal ratings of peer acceptance were highly correlated with teacher ($r = .25$, $p < .01$) and peer-rated ($r = .29$, $p < .01$) peer acceptance, further illustrating the utility of parent-rated acceptance in the present study.

Children were interviewed by trained research assistants two times, each interview lasting 15–20 minutes over a 3–4 week period. Tests included a standard sociometric procedure (e.g. Coie & Dodge, 1983; Hawley, 2003b) where children were presented black and white photographs of participating classmates and asked to nominate who they 'like to play with the most' and who they 'like to play with the least'. Children were asked these questions and instructed to point to the pictures of their classmates who best fit the description. Children were allowed up to 10 responses for each question. Nominations were then standardised within classroom to control for differences in classroom size.

Parenting patterns. In addition to the child outcomes, mothers reported their use of various parenting behaviours (Hawley, 2003b). These questions asked 'How do you usually/typically act in dealing with your child?' and items were rated on a five-point scale ranging from 'Not True' to '100% True'. Items directly related to the present analyses include those that focused on restrictiveness, nurturance, parental monitoring and autonomy support. An exploratory factor analysis using the maximum likelihood estimator and promax rotation was used to derive meaningful constructs from the parenting items. We selected to retain two factors based on the inspection of the scree plot as well as the interpretability of the solution. In the end, 14 items were used to represent two constructs[2] (see Appendix 1 for full factor pattern). The constructs include Firm Autonomy Support (9 items; $\alpha = .82$) and Restrictive Control (5 items; $\alpha = .75$). The *Firm Autonomy Support* (FAS) factor was composed of nine items focusing on warm, consistent parenting in which the autonomy of the child was supported. This factor comprised aspects of a nurturing parenting style, support for autonomy, structure and reverse-coded parental monitoring. *Restrictive Control* (RC) was composed of five items focusing on direct parental control. This factor included parenting items that focused on restrictive control and parental monitoring. These constructs were correlated .23 at the factor level. Rotated factor loadings representing these two factors are presented in Appendix 1.

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Analytic strategy

Data imputation. Less than 1% (total missing data points = .004%) of the data in the present sample were missing. SAS PROC MI was used to create a single complete dataset (SAS Institute Inc., 2000–2004).

K-means cluster analysis. A *k*-means cluster analysis was used to partition individuals into groups exhibiting similar patterns of parenting. We used R (R Development Core Team, 2005), a statistical software package, to run all *k*-means analyses. When using *k*-means clustering, it is always possible that the cluster solution found by the algorithm is not the best solution possible. This is known as the problem of local optima and is well documented in the *k*-means literature (Steinley, 2003). One way to avoid the problem of local optima is to run the *k*-means algorithm multiple times, each time with different randomly chosen cluster seeds. Subsequently, the best solution, based on the criterion of minimising within cluster variance, is chosen from the many solutions. While this procedure is not a guarantee against finding a local optima, it does make such a result much less likely.

We examined solutions for two, three and four clusters. As mentioned above, each analysis was based on the best cluster solution from 10,000 repetitions of the *k*-means algorithm, each with randomly chosen cluster seeds. Based on the criterion of producing meaningful clusters each with a reasonable sample size, we selected a three-group solution. The three groups are depicted in Figure 1 showing the means for FAS and RC for each cluster. Thirty-three mothers comprised the first cluster and endorse low levels of FAS and high levels of RC (low FAS; high RC). Forty mothers emerged in the second cluster (high FAS; low RC) and show high levels of FAS with low levels of RC. Finally, 46 mothers constituted the third cluster (high FAS; high RC) and demonstrate high levels of both FAS and RC.

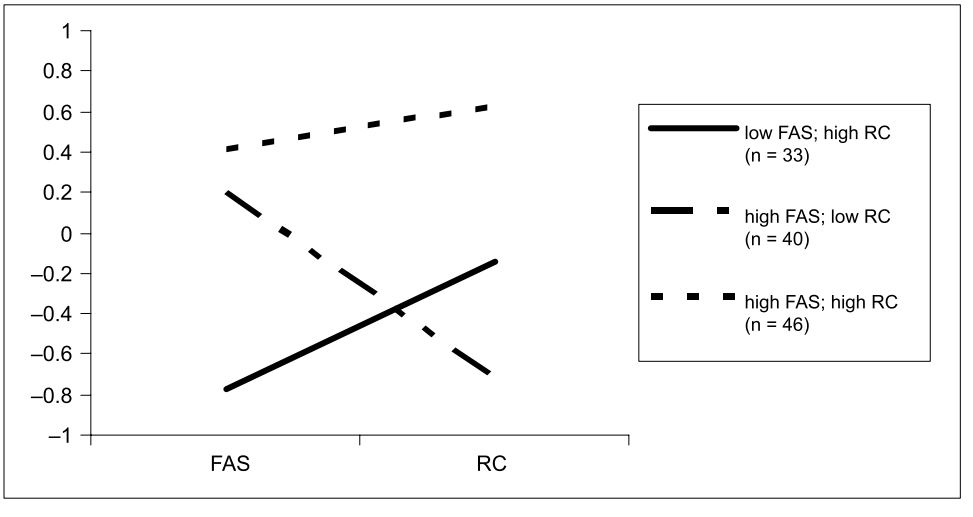

Figure 1. Standardised means for Firm Autonomy Support (FAS) and Restrictive Control (RC) for each parenting cluster. Note: FAS = Firm Autonomy Support and consisted of nine items focusing on warm, consistent parenting in which the autonomy of the child is supported. RC = Restrictive Control and comprised five items focusing on direct parental control of child behaviours.

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General linear model analysis. To examine the relationship between parenting cluster membership and the child's relational and physical aggression, personality, peer acceptance and peer rejection a series of analyses using cluster membership, in addition to a number of relevant control variables (i.e. gender, ethnicity, child's age, family income, mother's education level and mother's age) to predict these child outcomes were conducted. For those models that showed a significant relationship between parent cluster membership and child outcomes, we pursued post-hoc Bonferroni corrected tests to further describe the group differences.

Results

Physical, relational, and overall aggression

Using the typological approach, differences based on mother-report of relational ($F(2,116) = 4.50$; $p < .01$) and overall aggression ($F(2, 116) = 4.70$; $p < .01$) showed significant associations with cluster membership. Post-hoc Bonferroni corrected multiple comparisons revealed that children of parents in the low FAS; high RC cluster were reported as displaying significantly higher levels of relational and overall aggression than children of parents in the high FAS; low RC group. However, teacher reports of children's physical, relational and overall aggression did not reach significance. Means and 95% confidence intervals are presented in Table 1.

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Personality

The associations between maternal parenting and mother-report of child's agreeableness ($F(2, 116) = 8.70$; $p < .01$), conscientiousness ($F(2, 116) = 8.36$; $p < .01$) and extraversion ($F(2, 116) = 4.15$; $p < .05$) were significant. Post-hoc Bonferroni corrected multiple comparisons revealed that children of parents in the low FAS; high RC cluster were significantly less agreeable and less conscientious than children of parents in the high FAS; low RC cluster. Additionally, children of parents in the low FAS; high RC cluster were significantly less conscientious and extraverted than children of parents in the high FAS; high RC cluster. The association between self-reported maternal parenting patterns and child personality did not reach significance for teacher reports of children's agreeableness, conscientiousness, extraversion and openness to experience. Means and 95% confidence intervals are presented in Table 1.

Peer acceptance and rejection

The typological approach identified significant associations for mother ($F(2, 116) = 4.01$; $p < .05$) and teacher ($F(2, 116) = 3.14$; $p < .05$) reported peer acceptance. Post-hoc Bonferroni corrected multiple comparisons revealed that children of parents in the low FAS; high RC cluster were less well accepted by their peers than children in the high FAS; low RC cluster (see Table 1). Additionally, although the peer-rated acceptance did not reach significance ($p = .16$), the pattern demonstrated in the means is remarkably similar to that of mother-rated peer acceptance such that children of parents in the low FAS; high RC cluster were less accepted by their peers than the other two groups. Although peer-rated peer acceptance should be interpreted with caution, the pattern of means is consistent with the patterns of means of mother- and peer-rated peer acceptance such that children of parents in the low FAS; high RC group were least accepted by their classmates.

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Table 1. Typological approach analyses representing child outcome variables by parenting cluster.

Variables	Entire sample (n = 119)	Cluster 1 Low FAS; high RC (n = 33)	Cluster 2 High FAS; low RC (n = 40)	Cluster 3 High FAS; high RC (n = 46)	$F(2, 116)$	p
Aggression variables						
Mother-rated						
Physical	−.02 (−.19 to .15)	.26[a] (−.07 to .60)	.24[a] (−.55 to .06)	−.03[a] (−.32 to .26)	2.44	.09
Relational	.01 (−.17 to .19)	.38[a] (.02 to .72)	−.34[b] (−.66 to −.02)	.05[a,b] (−.25 to .35)	4.50	.01
Overall	−.01 (−.18 to .16)	.34[a] (.02 to .66)	−.33[b] (−.63 to −.04)	.03[a,b] (−.25 to .30)	4.70	.01
Teacher-rated						
Physical	−.02 (−.20 to .15)	−.06[a] (−.41 to .30)	−.02[a] (−.34 to .31)	.00[a] (−.31 to .30)	.03	.97
Relational	.04 (−.15 to .22)	−.13[a] (−.48 to .23)	.24[a] (−.08 to .57)	.02[a] (−.33 to .29)	1.23	.30
Overall	.04 (−.15 to .22)	.06[a] (−.31 to .43)	.05[a] (−.29 to .39)	.00[a] (−.31 to .33)	.02	.98
Personality variables						
Mother-rated						
Agreeableness	.05 (−.12 to .23)	−.47[a] (−.80 to −.14)	.47[b] (.17 to .78)	.06[a,b] (−.22 to .35)	8.70	.0003
Conscientiousness	.05 (−.13 to .23)	−.54[a] (−.88 to −.20)	.39[b] (.07 to .70)	.18[b] (−.11 to .48)	8.36	.0004
Extraversion	.07 (−.11 to .25)	−.24[a] (−.57 to .09)	−.04[a,b] (−.34 to .26)	.39[b] (.10 to .68)	4.15	.02
Openness	.08 (−.10 to .27)	−.17[a] (−.54 to .20)	.22[a] (−.12 to .56)	.14[a] (−.19 to .46)	1.25	.29

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Table 1. (*Continued*).

Variables	Entire sample (n = 119)	Cluster 1 Low FAS; high RC (n = 33)	Cluster 2 High FAS; low RC (n = 40)	Cluster 3 High FAS; high RC (n = 46)	$F(2, 116)$	p
Teacher-rated						
Agreeableness	−.06 (−.24 to .13)	−.26[a] (−.63 to .12)	.13[a] (−.21 to .48)	.08[a] (−.40 to .24)	1.17	.31
Conscientiousness	.03 (−.15 to .22)	−.10[a] (−.45 to .25)	.14[a] (−.19 to .46)	.04[a] (−.27 to .34)	.48	.62
Extraversion	.06 (−.12 to .23)	.02[a] (−.33 to .36)	.18[a] (−.14 to .50)	−.02[a] (−.33 to .28)	.44	.65
Openness	.13 (−.04 to .30)	.11[a] (−.22 to .45)	.35[a] (.04 to .65)	−.05[a] (−.34 to .23)	1.69	.19
Peer acceptance and rejection						
Mother-rated	.13 (−.05 to .27)	−.24[a] (−.54 to .05)	.31[b] (.04 to .59)	.20[a, b] (−.06 to .45)	4.01	.02
Teacher-rated	.03 (−.15 to .22)	−.22[a] (−.58 to .15)	.37[a] (.03 to .71)	−.08[a] (−.40 to .23)	3.14	.05
Peer-rated acceptance	.13 (−.06 to .31)	−.16[a] (−.51 to .18)	.25[a] (−.07 to .57)	.22[a] (−.08 to .53)	1.85	.16
Peer-rated rejection	.03 (−.15 to .20)	.09[a] (−.26 to .44)	.14[a] (−.18 to .46)	−.12[a] (−.42 to .18)	.82	.36

Note: FAS = Firm Autonomy Support and consisted of nine items focusing on warm, consistent parenting in which the autonomy of the child is supported. RC = Restrictive Control and comprised five items focusing on direct parental control of child behaviours. Ninety-five percent confidence intervals are displayed in parentheses below the standardised means for each cluster. Group values denoted with the same superscript (a or b) do not significantly differ from each other.

Discussion

The results of the present study are consistent with past research illustrating controlling parenting is associated with many consequences in the social domain in early childhood (e.g. Bates et al., 1998). Additionally, the general point that supporting a child's autonomy is beneficial to development (e.g. Grolnick et al., 2000) also was suggested in the present analyses. Similar to previous findings, results suggest that children of parents who use restrictive control without support for the child's autonomy to rear their children are more aggressive, display more negative personality traits such as less agreeableness, less conscientiousness and less extraversion according to parents, and are less accepted by their peers. The results suggest that children of parents who use high levels of restrictive control coupled with high levels of autonomy support do not experience the same negative developmental outcomes as children of parents who use high levels of restrictive control without support for autonomy. This finding suggests the importance of autonomy support in early childhood and the significant role it plays in child development. Specifically, negative affects associated with restrictive control to parent children may be ameliorated if the parent demonstrates some support for the child's autonomy as well.

Furthermore, these findings suggest that parents with less positive parenting patterns may perceive their children as displaying less positive social behaviours. This is in accord with a handful of studies showing that parental attributions affect parents' responses to child behaviour (e.g. Dix, Ruble, & Zambarano, 1989; Smith-Slep & O'Leary, 1998). However, it is important to note that the results cannot definitively show whether this relationship is due to the fact that parents with less positive parenting patterns tend to view their children in a negative light, or whether the difference between parent and teacher ratings is due to context specific behaviour on the part of the children.

The present study examined both mother and teacher reports of child outcomes in an attempt to escape problems of shared method variance associated with one rater rating both the independent and dependant variables. Although several links were found between parenting and maternal reports of aggression and personality, no significant relationships emerged between parenting and teacher reports of child aggression and personality. The discrepancy between mother and teacher ratings of aggression and personality has three implications. First, children may behave differently in a school context rather than in a family context. For example, even in preschool the school day can be quite structured. Time spent at home, on the other hand, may be less structured and the child may be free to behave in a more active and aggressive manner than when in the school setting.

Second, parents may perceive similar behaviours differently than teachers. The teachers observe multiple children on a daily basis whereas parents may only regularly observe their own children. For example, a parent may see his or her child as aggressive compared to his or her siblings, but the teacher may rate these same behaviours as less aggressive because other members of the classroom may be even more aggressive than that child. Although the behaviours exhibited in both contexts may be similar, the mother and teacher may be rating different things and they may have a different frame of reference upon which to compare the child.

Last, although the lack of concordance between mother and teacher ratings of child outcomes may be viewed simply as a methodological problem, the present authors see this as something far more interesting. It may be that mothers with a more negative

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perception of their child respond with less than ideal parenting. Therefore, the possibility of mothers' attitudes that are affecting maternal behaviour which clearly affect child behaviour cannot be ruled out and highlights the need for multiple reporters and longitudinal studies. Given the present data, we are unable to determine whether children's behaviour is different with parents present or whether parents who report less positive parenting practices also tend to view their children in a less positive way.

Furthermore, an interesting clinical question based on these findings concerns the possibility of screening for maternal attitudes in early childhood and targeting those characterised by low autonomy support and high control for intervention. The question remains, however, whether some children pull for a parenting style characterised by low support for autonomy and high restrictive control. Future studies assessing the bidirectionality of the mother–child relationship are needed to elucidate information regarding this idea. This type of study calls for longitudinal work and would contribute greatly to the present discussion.

Interestingly, despite the disagreement between teachers and parents on children's levels of aggression and children's personality characteristics, peer acceptance ratings showed similar patterns across raters. Specifically, children of parents who demonstrate little support for autonomy and high restrictive control are less well accepted by their peers. Because of the consistency in mean patterns across mother, teacher and peer reports of peer acceptance, it appears that the associations between maternal parenting and peer acceptance in early childhood are identifiable by multiple observers further suggesting the strong associations between maternal parenting and peer acceptance in early childhood.

Although the links between parenting and child aggression seem to be quite clear, the mechanism by which parenting style may influence child behaviour is less so. Some plausible explanations, however, include processes involving the formation of internal representations. Specifically, it has been hypothesised that children may construct internal representations or schemas of social interactions based on their early parent–child interactions. Additionally, these schemas may serve to guide the future social interactions with a child's peers. This hypothesis has been supported by findings showing links between warm parenting styles and the report of prosocial themes in narratives designed to serve as a proxy for representations of relationships. Conversely, harsh parenting predicted aggressive themes (Laible et al., 2004).

Limitations of current study

In addition to standard limitations of drawing causal conclusions from cross-sectional data, the present study is limited by the methods employed, especially perhaps for parent ratings of parenting behaviour and child outcomes. The less than desirable response rate of the parent questionnaire also may be viewed as a limitation. Additionally, due to the low number of fathers who completed the questionnaire (< 10%), the present analyses included mothers only. Previous research has shown differential associations for maternal and paternal parenting on child outcomes, which could aid in elucidating some of the relationships that were explored in the present study. From an ecological perspective, children are embedded in multiple contexts. One of these contexts is the family and within the family context the child is typically being parented by multiple people. Additionally, the combined parenting patterns of both parents may have differential associations with child outcomes and warrants future exploration. Finally, because observers may be influenced by stereotypes related to

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aggression (e.g. girls will be more relationally aggressive) there are limitations to drawing indices of different forms of aggression from observational ratings. Research shows, however, that women tend to be more accurate observers than men (Ostrov, Crick, & Keating, 2005) and the majority of teachers in the present study were women.

Despite these limitations, the present analyses add to the literature regarding maternal parenting patterns and child outcomes and provide many strong components. Specifically, the use of multiple raters of child behaviour suggests differential relationships between parenting patterns and child outcomes for aggression and personality, but all raters identified similar patterns in childrens' peer acceptance. Additionally, the present study used the typological approach and cluster analysis to identify parenting patterns. One advantage of this approach is that the effect of any particular parenting pattern is based on the interaction of a number of dimensions (rather than a single dimension) of parenting. Combining this approach with the dimensional approach may demonstrate a more complete picture of the complex associations between maternal parenting and child behaviour.

Because adaptation in one ecological domain of functioning is known to be embedded within larger domains of functioning, it is important to look at multiple contexts in which a child is functioning (Bronfenbrenner, 1986). Specifically, the present study demonstrated strong association between parenting and children's behaviour in peer contexts. Namely, the maternal parenting patterns derived in the present study were shown to be related to children's aggression, personality and peer acceptance. Because of the relationship that early parent–child interactions have on future child adjustment, it is important to elucidate parenting patterns that can affect social behaviour and acceptance. Additionally, this points to the importance of involving multiple contexts in interventions for young children experiencing difficulties in the social domain.

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Notes

1. A person-centred analysis is a pattern-oriented approach that focuses on behaviour and functioning in terms of patterns apparent in a set of theoretically important variables (e.g. Hawley et al., 2007). Methodologically, this approach identifies a group of variables, or a subsystem, which is theoretically relevant to the individuals being studied (Bergman & Trost, 2006) and asserts that these patterns of variables interact to affect behaviour through the influence that these behaviours have on the total functioning of the individual (Bates, 2000).
2. The *Firm Autonomy Support* factor included the following items: 'I make sure s/he knows that I appreciate what s/he tries to do', 'I show affection by hugging and kissing him/her', 'I allow him/her to do whatever s/he wants (reversed)', 'I give him/her choices', 'I give my child lots of opportunities to show what s/he can do or test his/her abilities', 'I let him/her know his/her ideas are valuable', 'I give him/her clear rules', 'I establish clear boundaries for him/her', and 'I enforce rules consistently'. The *Restrictive Control* factor included the following items: 'I teach my child that punishment will find him/her when s/he is bad', 'I

keep my child in line by warning him/her about the bad things that can happen to him/her', 'I give him/her a tough punishment when s/he does something wrong', 'I monitor him/her to make sure s/he does things right', and 'I tell him/her exactly how things should be done'.

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Appendix 1. Rotated factor patterns representing Firm Autonomy Support (FAS) and Restrictive Control (RC)

Variable	Factor I FAS	Factor II RC
I make sure s/he knows that I appreciate what s/he tries to do.	**0.98**	0.00
I show affection by hugging and kissing him/her.	**0.87**	–0.03
I allow him/her to do whatever s/he wants. (reversed)	**1.00**	0.00
I give him/her choices.	**0.94**	0.01
I give my child lots of opportunities to show what s/he can do or test his/her abilities.	**0.91**	0.02
I let him/her know his/her ideas are valuable.	**0.99**	0.00
I give him/her clear rules.	**0.92**	0.02
I establish clear boundaries for him/her.	**0.98**	0.00
I enforce rules consistently.	**0.90**	0.02
I teach my child that punishment will find him/her when s/he is bad.	0.00	**0.99**
I keep my child in line by warning him/her about the bad things that can happen to him/her.	–0.01	**0.92**
I give him/her a tough punishment when s/he does something wrong.	0.00	**1.00**
I monitor him/her to make sure s/he does things right.	0.14	**0.63**
I tell him/her exactly how things should be done.	0.14	**0.63**

	Factor I (FAS)	Factor II (RC)
Factor I (FAS)	1.00	
Factor II (RC)	0.23	1.00

Note: FAS = Firm Autonomy Support and consisted of nine items focusing on warm, consistent parenting in which the autonomy of the child is supported. RC = Restrictive Control and comprised five items focusing on direct parental control of child behaviours. A maximum likelihood estimator and promax rotation was used in this exploratory factor analysis to derive meaningful constructs from the parenting items. Factor loadings represented in boldface type denote the factor on which that particular item loaded.

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