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**PARENTING DURING TODDLERHOOD:
DETERMINANTS, STABILITY, AND CONSEQUENCES**

ACADEMISCH PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Universiteit van Amsterdam
op gezag van rector magnificus
prof. dr. D.C. van den Boom
ten overstaan van een door het college van promoties
ingestelde commissie,
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1 General Introduction

“Each day more than three-quarters of a million adults around the world experience the rewards and challenges as well as the joys and heartaches of becoming parents. Of course, everyone who has lived has had parents; the human race succeeds because of parenting. Parenting is a subject about which people hold strong opinions, but about which too little solid information or considered reflection exists. Parenting is, perhaps first and foremost, a functional status in the life cycle: Parents issue as well as protect, care for, and represent their progeny; indeed, parenthood is the “final common pathway” to childhood oversight and care giving. Parenthood is therefore a job whose primary object of attention and action is the child. But parenting also has consequences for parents themselves.”

Marc H. Bornstein (2007)

Most people become parents, and everyone who ever lived has had parents. Consequently, everybody has experienced parenting, either as a child or as a child and as a parent. The primary function of parenting is attention and action toward the child (Bornstein, 2005). Therefore, it is not strange that most research focused on how individual differences in childrearing are predictive of children’s developmental outcomes. However, parenting itself is a dynamic process that undergoes frequent adjustment as a consequence of variables residing in the parent, child, parent-child relationship, and context (Holden & Miller, 1999). In the current thesis, this dynamic process of parenting has been studied throughout a period that is marked by many challenges for children and their parents: toddlerhood.

1.1 Parenting during Toddlerhood

Toddlerhood is characterized by rapid physical, cognitive, motor, and emotional regulatory growth (Scaramella & Leve, 2004). The emergence of increasingly sophisticated verbal skills, self-awareness, and goal-oriented behavior contributes to a strong push for independence in children. Parents will find themselves coping with a more active child that can go places and do things that a few months ago, literally, were out of reach. Moreover, it has been argued that these developmental changes within the child seem likely to draw men more actively into parenting (Woodworth, Belsky, & Crnic, 1996).

In response to their children's increasing autonomy, and as a natural part of the socialization process, parents begin to increasingly impose more rules and limits. More frequent episodes of children's wilful non-compliance (Kochanska & Aksan, 1995), and episodes of undirected anger, negativity and oppositionality (Keenan & Wakschlag, 2000; Shaw & Bell, 1993), are the result of clashes between a child's self-assertions and parents' limit-setting efforts. The fact that these externalizing behaviors (e.g., temper tantrums, non-compliance, and aggression) are normative behaviors during toddlerhood makes it complex to determine the clinical significance of behavioral difficulties in young children (Keenan & Wakschlag, 2000). However, there is evidence from community-based samples that behavior problems exhibited as early as 2 years of age are predictive of continued problematic behavior (Keenan, Shaw, Delliquadri, Giovanelli, & Walsh, 1999). An emerging body of research shows that externalizing behaviors are stable from this early age on. More specifically, boys are found to be at elevated risk for later maladjustment when their parents reported high levels of externalizing behaviors when their son was a toddler (Alink et al., 2006; Campbell, Shaw, & Gilliom, 2000; Gilliom & Shaw, 2004; Mesman, Bongers, & Koot, 2001).

It is argued that one of the most important socialization tasks during the first years of life is to unlearn these externalizing behaviors. Very early in life, the social context (i.e., the family context) allows children to develop strategies that increase their capacity for emotional regulation and serve as adaptive alternatives to aggression. Toddlers who fail to develop age-appropriate strategies for regulating their externalizing behaviors are at high risk for subsequent chronic behavioral problems (Keenan, 2002). This points to the relevance of examining

the prevalence of externalizing behaviors, as well as its associations with parental behavior, as early as toddlerhood.

Parents indicate that one of the most difficult challenges during toddlerhood is to maintain the warmth and sensitivity of infancy, while using discipline, control, and limit setting (Kochanska, 1993; Shaw & Bell, 1993). Nevertheless, the balance between parental control and warmth, and the quality of parent-child relationships during this period has developmental significance because children learn strategies for interacting with others that set the pattern for future behavior and relationships (Scaramella & Leve, 2004). It is therefore important to investigate parenting during this period. What causes individual differences in childrearing behaviors? Does parenting develop over time? How are individual differences in parenting related to child behavior? And are there differences between mothers and fathers regarding their parental behaviors, and the determinants, stability and consequences of these behaviors? These issues were addressed in the current thesis.

1.2 Themes of Thesis: Theoretical Backgrounds

The present thesis is guided by four general themes: (1) the determinants of parenting, (2) the stability and change in parenting, (3) the links between parenting and children's externalizing behaviors, and (4) the comparison of mothers and fathers regarding these determinants, stability and links with the child's externalizing behavior.

1.2.1 Determinants of Parenting

Whereas great efforts have been expended studying the characteristics and consequences of parenting, much less attention has been devoted to what causes individual differences in parenting. Interest in the determinants of parenting has been stimulated by the development of an ecological perspective on family relationships (Bronfenbrenner, 1977) that suggests that the interaction between two members is influenced, at least partly, by relationships and events external to their own relationship. Applying this viewpoint to parenting, in 1984, Belsky proposed a process model of parenting. This model presumes that parenting is multiply determined by factors from three domains: characteristics of the parents, characteristics of the context in which the parent-child relationship is embedded,

and characteristics of the child. Central to this model is that these characteristics can be sources of support or of stress, which influence parenting behavior.

Parental characteristics are viewed as the most influential determinants of parenting, as they exert both a direct influence on parenting, as well as an indirect influence via the quality of the relationships that they maintain with their spouses, family, and friends. Parents may have personal resources that enable them to parent more effectively (Belsky, 1984) even when their children's behavior poses challenges. An important resource that may be effective in buffering the parent-child relationship from stress is the parent's personality.

Contextual characteristics are thought to be the second most influential determinants to parenting. For example, social support that parents receive may facilitate parenting by providing parents emotional support (i.e., love and interpersonal acceptance), instrumental assistance (i.e., provision of information and advice, help with child care), and by providing social expectations that can serve as a guideline about what is and is not appropriate behavior (Belsky, 1984). There are, however, also contextual characteristics that may undermine parental functioning, such as low SES and a large family size.

Compared to parental and contextual characteristics, the characteristics of the child are thought to be the least important predictors of parenting, because it is thought that parental and contextual resources of support can balance child-determined stress (Belsky, 1984). Most of the research examining the relationship between child characteristics and parenting has focused on children's temperamental features, or, in other words, biologically based individual differences in reactivity and self-regulation (Rothbart & Bates, 1998). An important way in which these child characteristics may affect parenting is through increased levels of parental stress, as the child's difficultness challenges parental resources.

Many parts of the model have been studied separately, but only few studies investigated the contributions of all three domains simultaneously (Woodworth, Belsky, & Crnic, 1996). However, because the characteristics of the parent, the context and the child are interrelated it is necessary to examine the contributions simultaneously to draw conclusions regarding the relative importance of these characteristics. It may be, for example, that the effect of a variable is spurious because of its associations with some other characteristic (e.g., the association between child's difficultness and parenting may be spurious as a result of the

association of both with marital dissatisfaction). Thus, the first main research-questions of this thesis were: *What causes individual differences in parenting and can we identify determinants that exert more influence on parenting than others?*

1.2.2 Stability and Change in Parenting

The fact that children are incessantly developing their cognitive, linguistic and motor skills, suggests that parents need to continuously adapt their parenting behavior to the developing child. However, empirical evidence regarding the development of parenting is scarce.

The question whether parental behavior changes over time is closely related to the issue of what determines or influences this behavior (Mischel, 1977). If parental behavior is determined by variables that are likely to be unchanging or have a persistent influence on parenting, parenting should be characterized more by stability than change. However, if parenting is subject to variables that undergo considerable change (i.e., child behavior) then a view of stability might not be tenable (Holden & Miller, 1999).

As suggested by Belsky's process model of parenting (Belsky, 1984), parenting is for the largest part determined by parental and contextual characteristics. Personal characteristics, such as personality, personal history, and childrearing beliefs (i.e., values, attitudes, perceptions, expectations, or ideas about children or child rearing behavior) are stable features of the parent. Some contextual characteristics, such as being a member of a social class, ethnic or religious group, are also fairly stable. Assuming that these parental and contextual characteristics exert a constant influence on parenting, it can be expected that parenting is stable as well. The theoretical model that assumes parenting to be stable across time is often referred to as the 'trait-like approach' (Holden & Miller, 1999).

However, it is also recognized that children influence their parents' rearing practices (Bell, 1977; Bell & Harper, 1977; Belsky, 1984). There are studies demonstrating that parenting is indeed influenced by characteristics such as the child's gender, behavior, appearance, and temperament (Anderson, Lytton, & Romney, 1986; Fagot, 1993). The 'child-effect approach' assumes that parenting is not an internal trait, but a reaction to children's characteristics and developmental stage (Holden & Miller, 1999). Thus, according to the child-effect approach, parenting should be viewed as a relational, rather than an individual

construct, and therefore parenting will vary along with the developmentally changing child.

As these two approaches have opposite expectations regarding the stability of parenting, the second main question of the current thesis is: *how stable is parenting during toddlerhood, a period in which children develop rapidly? And if parenting changes, to what extent can these changes be explained by children's externalizing behaviors?*

1.2.3 Links between Parenting and Children's Externalizing Behavior

One of the most investigated topics of developmental psychology is the influence of parenting on child's externalizing behaviors (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Maccoby, 2000). Despite the increasing knowledge, there are still gaps in our understanding of the role parenting plays in a child's problem behavior. One of these gaps is that most studies regarding the associations between parenting and children's externalizing behavior adopted a unidirectional point of view, in which parenting actively shapes the child's behavior and in which children are the passive recipients of parenting. A second gap is that we know little about the unique and interactive effects of diverse parenting dimensions on children's externalizing behavior.

Bidirectional parent-child relationship The ecological approach to development (Belsky, 1984; Bronfenbrenner, 1977) explicitly articulated the need to study both the parent and the child in the process of their emerging relationship, and it portrayed their relationship as representing joint contributions of both. In contrast, according to traditional views of the parent-child relationship, parents are conceptualized as the primary agents of socializing their children, and children are regarded as the passive recipients of this socialization (Perlman & Ross, 1997). In 1968, this unidirectional view of the parent-child relationship changed with Bell's seminal article in which he re-interpreted many of the findings on child socialization as potentially child -rather than parent- effects. In the current perspective, both parents and children are viewed as active agents, who co-create their emerging, bidirectional relationship (Collins, et al., 2000; Maccoby, 2000).

There are two models that are particularly applicable to the associations between parenting and children's externalizing behavior, which presume that both parent and child are active participants in their relationship. Patterson's coercion

model (Patterson, 1995; Patterson, Reid, & Dishion, 1998) proposes a four-step process. First, the parent commands the child to perform a behavior or reprimands the child for misbehavior. Subsequently, the child responds to the parent's request with an aversive behavior (e.g., whining, yelling). After this, two things can happen. One, the parent perseveres in the request and the child stops the aversive behavior. Or, two, the parent gives in, stops the request, and the child has escaped from the parent's request.

A second theory presuming that parents and children both actively shape their relationship is Bell's control system model (Bell, 1979; Bell & Chapman, 1986). According to this model, parents and children regulate each other in ways similar to a thermostat. When children's behavior gets too inappropriate, then parents respond with upper limit controls in reaction to which the child reduces or redirects his excess behavior. When children are too shy and withdrawn, then parents respond with lower limit controls to prime or stimulate appropriate behavior.

Despite these theoretical models, empirical evidence supporting this presupposed bidirectional relationship between parenting and children's externalizing behavior is scarce (especially during toddlerhood) and inconsistent. Moreover, only few studies have examined how the strength of this bidirectional relationship may change as children develop (Fite, Colder, Lochman, & Wells, 2006).

Interplay between differential parenting behaviors. Parenting encompasses a broad range of behaviors, such as responsiveness, involvement, and discipline. Many of these parental behaviors are thought to play a unique role in child development, as it appears from the different theories that have been formulated regarding the processes that underlie these parent-child associations. For example, high levels of parental psychological control is thought to be damaging by causing children to experience psychological pain, which limits the child's opportunities to develop a healthy awareness of the self (Barber, 1996; Straus & Field, 2003), whereas physical punishment is thought to be related to higher levels of problem behavior by teaching children aggressive and controlling strategies for solving problems (Gershoff, 2002). The majority of previous studies regarding the associations between parenting and children's externalizing behaviors has, however, examined only one parenting

behavior at the time, which limits the possibility to draw conclusions regarding the unique and interactive effects of parenting behaviors.

Parenting behaviors coexist and are interrelated. It is therefore necessary to simultaneously examine the effects of different parenting behaviors on children's externalizing behavior, as the association between a specific parental behavior and externalizing behavior may not be unique, but indirect (Caron, Weiss, Harris, & Catron, 2006). For example, it is possible that children of unsupportive parents show high levels of externalizing behavior. This association may, however, be the result of the fact that unsupportive parents generally display high levels of physical punishment, which causes these high levels of externalizing behaviors. Thus, the association between parental support and children's externalizing behavior might not be unique, but might be caused by the common associations of both parental support and children's externalizing behavior with physical punishment.

Furthermore, by studying the effect of only one parenting behavior it cannot be investigated how parenting behaviors interact in relation to children's externalizing behavior. It can be expected that the association between one parenting behavior and children's behavior is moderated by a second parenting behavior. For example, harsh disciplinary tactics could have different effects on child functioning when the parent is cold and distant, rather than warm and supportive (Goodman, 1997).

In sum, the following questions have been examined regarding the links between parenting and children's externalizing behavior: is the relation between parenting and children's externalizing behavior bidirectional, and is this relationship developing throughout toddlerhood? Are the associations between specific parental behaviors and children's externalizing behaviors unique, or are these associations influenced by other parental behaviors?

1.2.4 Mothering versus Fathering

The lion part of previous research that examined the associations between parenting and the development of children has focused on mothers only. It is not clear to what extent the results of these studies also apply to fathers. Fathers may play a distinct and complementary role in parenting with mothers. Bowlby posited a learner-teacher and play-partner system in addition to the attachment-caregiver system (Grossman, Kindler, & Strasser, 2003). In this view, father's involvement is more characterized by play, mentorship, and encouragement of the child rather than on nurturing interactions, which is more characteristic of mother's involvement. Indeed, some studies suggest that mothers are more responsive and warm in their parenting (Calzada, et al, 2004; Kendler et al., 1997), whereas fathers are more restrictive (Metsäpelto & Pulkinnen, 2003). In addition, children preferably seek mothers to comfort and sooth them (Lamb, 1976), but prefer fathers as playmates (Clark-Stewart, 1978). Thus, the role of mothering and fathering may be different and complementary.

Determinants of parenting. There is only a small number of studies that investigated the determinants in parenting for both mothers and fathers. The few studies that did examine the associations of parental, contextual, and child characteristics with parenting came to dissimilar conclusions. For the effects of parental characteristics on parenting, Kochanska, Friesenborg, Lange, and Martel (2004) showed that maternal behavior was affected by neuroticism, empathy, and conscientiousness, whereas paternal behavior was influenced by agreeableness, openness and extraversion. In contrast, Metsäpelto and Pulkinnen (2003) did not find evidence for these mother-father differences in the effects of parental characteristics. With regard to contextual characteristics, it was found that the quality of the marital relationship and the socioeconomic status of the family influenced paternal behavior, but not maternal behavior (Belsky, Youngblade, Rovine, & Volling, 1991; Grolnick, Weiss, McKenzie, & Wrightman, 1996). Children's characteristics had a different influence on certain parenting dimensions for mothers and fathers, whereas for other parenting dimensions these effects of child characteristics were similar (Kochanska, et al., 2004).

Stability and change of parenting. With regard to the stability and change of parenting, we could only find one study that compared the developmental patterns of mothering and fathering (Belsky, Gilstrap, & Rovine, 1984). From this study, it was concluded that mothers and fathers differed in their absolute levels of parenting (i.e., engagement, responsiveness, positive affect, care giving, and stimulation), but the developmental patterns of mothering and fathering were similar.

Links of parenting with the child's externalizing behavior. Results regarding the relative importance of mothering and fathering in the prediction of children's externalizing behavior is inconsistent. Two meta-analyses, that included different data sets, yield rather different conclusions regarding the relative contributions of maternal and paternal behavior to the development of externalizing behavior in early childhood. One of these meta-analyses focused on clinic-referred samples, and concluded that fathering has a stronger effect than mothering when it came to predicting conduct disorder and juvenile delinquency (Loeber & Stouthamer-Loeber, 1986). The other study focused on nonclinical samples and found mothering to be a better predictor of children's externalizing behavior than fathering (Rothbaum & Weisz, 1994).

However, the question is not only whether mothers and fathers differ in their relative importance. Parenting researchers have become increasingly aware that child development cannot be understood in terms of separate parent-child relationships and that these relationships should be studied within the context of the family (Feinberg, 2003). It is of interest whether the influences of mothering and fathering are unique (i.e., parenting of one parent contributes to child development above and beyond the contribution of parenting of the other parent), and whether the childrearing of one parent moderates the associations between children's behavior and the childrearing of the other parent.

To summarize, several questions arise when comparing maternal and paternal behavior. Is maternal and paternal behavior determined by similar factors? Is the developmental path of parenting similar for mothers and fathers? Are the (bidirectional) associations between parenting and children's behavior similar for mothers and fathers? Do mothering and fathering have a unique influence on child behavior? Does maternal behavior moderate the associations between fathering and child's behavior and vice versa? The fourth main question of this

thesis is therefore three-fold: *Do the determinants, stability, and links with children's externalizing behaviors of parenting differ for mothers and fathers?*

1.3 Considerations

1.3.1 Design of the Study

In order to examine mothering and fathering during toddlerhood, we followed intact two-parent families with their toddler son for a period of 1-½ years ($N = 111$), from the moment the children were 17 months old, up till they were 35 months old. Approximately half of the target children ($n = 54$) were firstborn children. In order to keep track with important changes that occur in toddlers, we decided to contact families every 6 months, across this 18-months period. We obtained data from these families when their child was approximately 17, 23, 29, and 35 months of age.

We exclusively focused on families with a son for several reasons. The data for the present studies were collected as part of a broader longitudinal project¹ concerning externalizing behaviors in children and family development. This broader longitudinal project also included observations of temperamental features of the child and of mother-child interactions (these observations are not reported in the current thesis). Due to these time-consuming observations, the sample size was limited. The inclusion of both boys and girls would have limited the power of statistical analyses, since empirical evidence shows that the child's gender influences the parent-child relationship (Lovas, 2005; Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003), and thus needs to be controlled for when studying mother-father differences. But why focus on boys and not girls? First, boys are likely to display higher levels of externalizing behaviors than girls (Webster-Stratton, 1996), which are to be expected to put pressure on the parent-child relationship. Moreover, early externalizing behaviors are better predictors for later maladjustment in toddler boys than in girls (Alink et al., 2006). Additionally, fathers are thought to be more involved with their sons than their

¹ The broader longitudinal project is entitled "The development of physical aggression and unintentional injuries in toddlerhood". Funding for this project was raised by Prof. dr. M. Junger. The University of Amsterdam and Utrecht University collaborated in conducting this project.

daughters (Lamb, 2000; Pleck, 1997; Woodworth, Belsky, & Crnic, 1996). For these reasons we decided to focus on families with a toddler son.

1.3.2 Parenting in Terms of Styles or Dimensions?

Parenting is often described in terms of styles, representing general patterns of child rearing, or a parent's typical way of responding to the child (Darling & Steinberg, 1993). The dominant conceptualization of parenting is the typology of parenting styles that vary along the dimensions of control and support (Baumrind, 1967). Parental support is defined as parental behavior that makes the child feel comfortable and includes behaviors such as acceptance, affection, warmth, nurturance on the one hand, and hostility, neglect, intrusiveness on the other hand. Parental control involves behavior of the parent with the intent of directing the behavior of the child, including behaviors such as induction, restrictiveness, coercion, physical punishment and psychological control. Parents who are high on warmth and control are called 'authoritative'. Parents who are high on support but low on control are 'permissive', and parents high on control and low on support are 'authoritarian'. In the last 25 years, many developmental scientists adopted this formation of parental typologies, and results consistently showed that authoritative parenting is the most advantageous style (Baumrind, 1978; Lamborn, Mounts, Steinberg, & Dornbusch, 1991). However, by combining diverse parental dimensions into typologies, the specificity in the relation between different parenting dimensions and child outcomes cannot be examined (O'Connor, 2002). Therefore, in this thesis we start from a multidimensional model of parenting.

We started from a parenting-model developed by Slater and Power (1987). They distinguished three dimensions of parenting: support, structure and control. All three dimensions appear to attribute to developmental outcomes of the child. *Support* refers to parental involvement in positive parent-child interactions and parental sensitivity and responsiveness towards the child's signals and needs. *Structure* concerns the parent's tendency to be stable and predictive in their parenting, for example, by being consistent in discipline and to not let their emotional state interfere with their interactions with their child. Both dimensions are found associated with positive functioning of the child (Frankel & Bates, 1990; Silverman & Ragusa, 1990; Stormshak, Bierman, McMahon, & Lengua, 2000). Regarding the dimension of control, it is important to distinguish different techniques that parents use to discipline their children, as these are conceptually

different and uniquely related to the child's behavior (Slater & Power, 1987). Three techniques have received much attention in research on child development: positive discipline, psychological control and physical punishment. *Positive discipline* includes parent's appraisal of the child's good behavior and the extent to which parents give explanations for why certain behavior is unwanted (i.e., induction). This parenting dimension is related to more compliance (Feldman & Klein, 2003; Silverman & Ragusa, 1990). *Psychological control* represents the extent to which parents raise their voice and take away their love and affection in response to children's misbehavior. *Physical punishment* refers to the parent's tendency to spank in order to let the child obey. Both dimensions of parenting are often linked with increased behavior problems (DeKlyen, Speltz, & Greenberg, 1998; Stormshak, Bierman, McMahon, & Lengua, 2000)

1.3.3 Measurement Methods

The data of this thesis were all obtained by self-reported questionnaires, and this decision was based on theoretical, empirical, and pragmatic reasons. Parents are the most obvious source of information about their own and their child's behavior because they have the widest observational base, as are in a unique position to report about these behaviors in a variety of situations (e.g., when the child is misbehaving, when they are playing with their child, when they are visiting other people with their child, when they are putting their child a sleep). Moreover, some parental behaviors that occur infrequently (such as physical punishment and psychological control) are very difficult to capture within other methods to obtain data, such as observations.

Empirically, self-reported questionnaires have paid off. The fact that an abundance of previous studies have repeatedly demonstrated significant effects of self-reported parenting behavior on children's developmental outcomes, are proof of the value of these questionnaires.

When conducting longitudinal studies, also pragmatic reasons play a great role in the decision to use self-reported questionnaires. Questionnaires are easy to fill out and less time consuming than observations or an interview. This is an important advantage for two reasons: first, to retain parents to participate throughout the study, and second, to be able to ask parents about a broad range of parental, contextual, and child characteristics and their parental behavior.

1.3.4 Analyses: Structural Equation Modeling

While addressing questions regarding mother-father differences, it is not sufficient to simply examine mothering and fathering in separate models and then compare these two models. Mothers and fathers are part of one and same family system, sharing a broad range of characteristics (e.g., raising the same child, family context, marital relation). As a family system approach suggests, elements in the system are presumed to be interdependent. Mothers' and fathers' parenting styles, practices and beliefs are capable of influencing and being influenced by the other partner (Gamble & Diaz, 2007). Results regarding separate mothering- and fathering-models, therefore, may be spurious, as the fathering measures are omitted from the mothering-model and the mothering measures are omitted from the fathering-model

Structural equation modeling makes it possible to examine both maternal and paternal behavior in one model to account for this interdependency and to statistically test whether the effects of mothering and fathering are significantly different. In Chapter 2-4 of this thesis, structural equation modeling was used to examine the contributors of parenting, the stability of parenting, and the parent-child relationship within a family system approach.

1.4 Outline of Thesis

In this thesis, four empirical studies are presented. Below, a short description of the questions that were examined in each study is given.

1.4.1 Parenting during Toddlerhood: Contributions of Parental, Contextual, and Child Characteristics

Little attention has been given to variables that contribute to individual differences in childrearing. According to Belsky's process model of parenting (1984), parenting is determined by parental, contextual, and child characteristics. In Chapter 2 we verified to what extent this process model applied to parenting during toddlerhood. In addition, we examined whether the gender of the parent is a moderator in the relationship between these parental, contextual and child characteristics on the one hand and parenting on the other hand.

1.4.2 .A Short-term Longitudinal Study of the Development of Parenting during Toddlerhood

Because empirical evidence regarding the development of parenting is scarce, in Chapter 3 we investigated the flexibility and dynamics of parenting during toddlerhood. Four distinct types of stability (factorial equivalence, mean-level stability, rank-order stability, and individual-level stability) were examined in a broad range of maternal and paternal behavior.

1.4.3 Parenting and Children's Externalizing Behavior: Bidirectionality during Toddlerhood

Although it has been suggested that both parents and children actively contribute to their emerging relationship, empirical evidence for these bidirectional processes is scarce and inconsistent. In Chapter 3, we examined the bidirectional associations between parenting and toddlers' externalizing behaviors across four measurement waves. It was examined (1) whether the relation between parenting and children's externalizing behaviors is bidirectional, (2) whether these parent-child associations change over time, and (3) whether these associations are similar for mothers and fathers.

1.4.3 Mothering, Fathering, and Toddlers' Externalizing Behavior

It has been well established that parental support, psychological control and physical punishment are associated with children's externalizing behaviors. However, little is known about the specificity of these associations, or to what extent these parenting dimensions interact in the prediction of children's problem behavior. In Chapter 4, we investigated the unique and interactive effects of maternal and paternal support, psychological control and physical punishment on children's externalizing behavior.

2 Parenting During Toddlerhood: Contributions of Parental, Contextual and Child Characteristics*

2.1 Abstract

The present study examined the contribution of parental, contextual and child characteristics to parenting behavior during toddlerhood in 111 two-parent families with a 17-month-old son ($M = 16.9$ months, $SD = .6$). Parenting was conceptualized in terms of five dimensions: support, structure, positive discipline, psychological control and physical punishment. In general, results indicate that the effects of parental, contextual, and child characteristics on parenting dimensions do not differ for mothers and fathers. The only uncovered difference concerns the effects of child's inhibitory control which was significant for maternal, but not for paternal, support. For both mothers and fathers, support, structure and the use of psychological control are mainly influenced by parental characteristics, whereas physical punishment is best predicted by contextual characteristics. For positive discipline the influence of parental, contextual, and child characteristics are equally strong. Overall, the contribution of child characteristics to parenting dimensions was moderate.

* Verhoeven, M., Junger, M., Van Aken, C., Deković, M., & Van Aken, M.A.G. (in press). *Journal of Family Issues*.

2.2 Introduction

The transition from infancy to toddlerhood is characterized by a number of changes in the behavioral repertoire of both child and parent. Besides an enlargement of the child's linguistic skills and mobility, there is also an increase in negativity and oppositionality during this period that heralds the onset of independence (Keenan & Wakschlag, 2000). Parents have to adjust their child rearing to these newly achieved behaviors and their parenting tasks broaden. Whereas during infancy the primary role of the parents was the providence of nurturance and care giving, parents now have to set limits and provide guidance as well. Many researchers noted that parenting during toddlerhood plays a unique and important role in the developmental outcomes of the child (Maccoby, 2000). Furthermore, research shows that parenting is quite stable at this very young age (Dallaire & Weinraub, 2005). These two points stress the importance of studying factors that account for variations in child rearing behavior throughout this developmental period. In the present study, we address this question by examining three groups of factors suggested by Belsky's (1984) ecological model of the determinants of parenting: parental personality, contextual features and characteristics of the child. Since the introduction of Belsky's process model of parenting in 1984, many parts of the model have been studied and some studies have confirmed the general model (Michalcio & Solomon, 2002). However, these previous studies are limited for three reasons.

The first limitation is that past work on the determinants of parenting during toddlerhood has examined only a restricted range of parental behavior, mainly the affective qualities of parenting, and has thus ignored the multi-dimensional nature of parenting (Darling & Steinberg, 1993). The present study examined the determinants of five parental dimensions, that is parental support, structure, positive discipline, psychological control and physical punishment. Support includes parental involvement in positive parent-child interactions and the extent to which parents are sensitive and responsive to the child's signals and needs. Structure concerns the parents' tendency to provide a structured environment by being consistent and predictable. Positive discipline refers to what extent parents praise the child's good behavior and provide explanation for why specific behavior is unwanted. Psychological control represents the extent to which parents raise their voice and take away affection or attention as a response to

child's disruptive behavior. The fifth dimension, physical punishment, refers to the parents' tendency to spank the child when it misbehaves.

A second limitation of former work on the determinants of parenting is that these studies have frequently investigated only one or two out of the three predicting domains that are expected to play a role in parenting. As a consequence less is known about the unique contributions of various parental, contextual and child characteristics to parenting. The present study examines all three predicting domains to determine their unique contributions. For each domain we selected, based on previous findings, those characteristics that appear to be especially important determinants of parenting.

Parental personality. Given that individual differences in personality manifest themselves in a wide range of behavioral domains, including social relationships, personality is expected to be a determinant of parenting (Belsky, 1984; Belsky & Barends, 2002). In fact, Belsky proposes that parental characteristics are probably the most important determinants of parenting behavior, because they act upon parenting both directly and indirectly, through their effect on social-contextual factors that impact parenting. Results from diverse studies confirm that parental characteristics are important contributors to parenting behavior. Studies using the Five Factor Model of personality show that high scores on positive personality traits (agreeableness, extraversion, openness and conscientiousness) are related to positive ambience, nurturance and adaptive parenting (Belsky & Barends, 2002; Clark, Kochanska, & Ready, 2000; Kochanska, Friesenborg, Lange, & Martel, 2004; Metsäpelto & Pulkkinen, 2003; Woodworth, Belsky, & Crnic, 1996), whereas high scores on neuroticism are related to low levels of parental supportiveness (Kochanska et al., 2004; Metsäpelto & Pulkkinen, 2003; Woodworth et al., 1996).

The current study extends the Big-Five personality-traits with self-control. Self-control is described as a stable aspect of personality (Baumeister, 2002) and is thought to be an important individual characteristic with regard to social behavior (Houck & LeCuyer-Maus, 2004). Surprisingly, self-control has, to our knowledge, not yet been investigated in relation to parenting behavior. Individuals with a low degree of self-control are characterized by self-centeredness, impulsivity and a tendency to satisfy desires immediately. Thus it can be expected that low self-control is incompatible with patient, warm and consequent parenting behavior.

Social contextual characteristics. Features from the broader social context in which the parent-child relationship is embedded, form the second determinant of parenting (Belsky, 1984). There is a body of evidence that the feeling of social support on the one hand and the experience of stress on the other hand, are likely to promote or undermine parental competence. The present study examines three features from the social context: marital satisfaction, socio-economic status and family size.

Belsky (1981) claimed that the marital relationship serves as the principal support system for parents. Difficult child behavior, which is common during toddlerhood, is a stress to this marital relationship (Calzada, Eyberg, Rich, & Querido, 2004). Therefore, we consider marital satisfaction as an important predictor of parenting during this developmental period. Several studies showed that parents who feel supported by their spouse and experience a moderate to high satisfaction with their marriage show more skilful parenting behavior (Kendler, Sham, & MacLean, 1997; Van Bakel & Riksen-Walraven, 2002). Marital dissatisfaction, in contrast, is related to more parental negativity and rejection (Belsky, Youngblade, Rovine, & Volling, 1991; Hetherington & Clingempeel, 1992), and a more lax and inconsistent discipline-style (Mann & MacKenzie, 1996).

The socioeconomic status (SES) is hypothesized to influence parenting behavior in two ways. First, it is thought that parents' occupational and social status predicts differences in parental values and goals, which lead to differences in child-rearing behaviors (Kohn, 1963). Secondly, economic hardship exposes parents low on SES to additional stressors that undermine skilful parenting (McLoyd, 1990). In fact, low SES is found related to more harsh parent-child interactions, while parents high on SES are more warm and responsive and use more appropriate and consistent discipline-techniques (Pinderhughes, Nix, Foster, & Jones, 2001; Van Bakel & Riksen-Walraven, 2002).

Family size is also considered to be an important predictor of parenting. When there are more children present in the family, parents have to divide their attention and parenting resources are challenged. Indeed, in a study with school-aged children, Pinderhughes and colleagues (2001) found that parents tend to be more consistent and less harsh in their discipline-behavior, when fewer children were present in a family. An other study showed that children with more siblings were less overprotected and less controlled by their parents (Kendler et al., 1997).

Child characteristics. Belsky (1984) also draws attention to the role of the child as a contributor to parenting behavior. A growing body of evidence suggests that parents adjust their behavior to the characteristics of their child. Difficult children invoke harsh, problem-inducing parenting, whereas child's positive emotionality elicits positive, adapted parenting (Kochanska et al., 2004; Neitzel & Stright, 2004).

Up till now, temperamental features of the child have received most attention in terms of influencing parental behavior. However, there are other characteristics worth considering, such as the language abilities of the child. During toddlerhood, children make major transitions in their linguistic skills. By using speech a child is able to express what it wants or needs, which makes it easier for parents to react in a responsive manner. A study that examined this relationship showed a positive relation between parental warmth and toddlers' language skills (Fuligni, Han, & Brooks-Gunn, 2004).

The third limitation of studies on determinants of parenting is the exclusive focus on mothers. Despite the growing acknowledgement that fathers play an important role in child development, still little research is done on paternal behavior. Studies that did examine differences between maternal and paternal behavior showed that mothers are more responsive and warm in their parenting than fathers (Calzada et al., 2004; Kendler et al., 1997), whereas fathers are more restrictive (Metsäpelto & Pulkkinen, 2003). Thus, mothers and fathers differ from each other with regard to their parental behavior. But whether parental, contextual and child characteristics play different roles in parenting of mothers and fathers is unclear, since studies that focused on the determinants of both mothering and fathering are scarce and results are contradictory. With regard to the relatedness between parents' personality and parenting behavior, Belsky, Crnic and Woodworth (1995) established that mothering was more consistently predicted by personality than fathering, with extraversion playing a larger role in fathering and agreeableness being more important for mothering. Kochanska and colleagues (2004) cautiously concluded that parental agreeableness and openness had differential effects on maternal and paternal positive affect. However, the effects of personality on responsiveness and monitoring were similar for mothers and fathers. In addition, Metsäpelto and Pulkkinen (2003) observed that parental personality traits influenced maternal and paternal nurturance, restrictiveness and knowledge (awareness of child's friends and activities) in similar ways.

In reference to contextual features, a longitudinal study on the interrelations of marital and parent-child relationships (Belsky, Youngblade et al., 1991) found that paternal behavior was more influenced by a deteriorating quality of marriage than maternal behavior was. Additionally, Grolnick and colleagues (1996) showed that higher SES fathers tended to be more involved and provided more structure, whereas for maternal behavior no significant relations were found with SES.

Concerning the effects of child characteristics, Kochanska and colleagues (2004) found that child's fearfulness, activity level and joy had different effects on maternal and paternal positive affect and responsiveness. For parental monitoring, however, the child's temperament had similar effects for mothers and fathers.

The results of these former studies are not only inconsistent; they are also limited by a lack of evidence supporting cross-gender comparability of measures used to assess parental behavior. To examine differences in maternal and paternal behavior it is critical that the measures of these behaviors have similar meaning for mothers and fathers. If measures are not equivalent for mothers and fathers, then the findings of a between-group difference cannot be unambiguously interpreted (Cheung & Rensvold, 2002), since these differences may simply mean that different phenomena were measured. In this study, preliminary to examine mother-father comparisons, the comparability of the measures of parenting dimensions for mothers and fathers is investigated.

To summarize, the present study tries to expand the existing knowledge on the determinants of parenting by a) examining the determinants of a broad range of parenting dimensions, b) studying the unique effects of parental, contextual and child characteristics on parenting dimensions, and c) examining these effects on both maternal and paternal dimensions.

2.3 Method

2.3.1 Participants and Procedure

The data used in the present study were collected as part of the first wave of a longitudinal project on the development of physical aggression in toddlerhood. Within this project, only boys were included since it is thought that physical aggression is more common among boys than girls. The boys are followed from the time they were 17 months old, because that is the age of ‘onset’ of aggressive behavior (Tremblay et al., 1999).

Participants were 111 two-parent families, each with a 17-month-old infant boy ($M = 16.9$ months, $SD = .6$). About half of the boys ($n = 57$) were firstborn children. The age of the mothers ranged from 22 to 44 years ($M = 32.8$ years, $SD = 4.0$) and from 22 to 48 years ($M = 34.7$ years, $SD = 4.7$) for the fathers. The level of education ranged from low (elementary school) to high (college degree or more). The recruitment of these families was based on the records of Infant Wellcare Clinics in three cities situated in the middle of the Netherlands. A recruitment letter, which explained the goals of the project, was sent to 192 families followed up by a telephone-call. Of these 192 families, 117 families volunteered. A lack of time was the most prevalent reason for refusal of participation. In four families, mothers and fathers lived separately. These families were excluded from the current study. In addition, two families were excluded because of missing data.

Both mothers and fathers completed questionnaires about their parental behavior and personal characteristics. Only mothers filled in questionnaires about their toddlers’ characteristics. The return rate of the questionnaires was 100%, as these questionnaires were collected at home.

2.3.2 Instruments

All instruments that were originally produced in English and for which no standard Dutch translation was available were translated by means of a double translation procedure. Since the children in this study are 17 months of age, several items were not age-appropriate and had to be revised or left out. Scores for the parenting dimensions were assigned by computing mean-scores of the scales that these dimensions consist of. With regard to lack of structure, the scales that measured this parenting dimension had to be standardized first since they had different rating scales. For parental, contextual and child characteristics, scores

were assigned by computing mean-scores of all items the scales consist of. For all scales, a high score indicates that the behavior or characteristic is highly represented within the individual.

Parenting

Support. Two scales represented the parenting dimension support. The first scale, responsiveness ($N = 4$ items), reflects the degree to which parents adequately and responsively react to the needs, signals and conditions of the child (Gerris et al., 1993). A sample item is “I know very well what my child feels or needs”. Parents rated the frequency of their parenting behavior on a 5-point scale ranging from 1 = *never* to 5 = *always*. The second scale, positive interactions ($N = 5$ items), measures the degree to which a parent is involved in positive interactions with the child (Strayhorn & Weidman, 1988). The frequency of positive parent-child interactions was measured on a 5-point scale (e.g., “How often do you and your child laugh together?”), ranging from 1 = *never* to 5 = *many times each day*. The internal reliability was .77 for mothers and .80 for fathers

Lack of structure. Three scales that assess the degree to which parents provide a structured environment for their child represent the dimension of lack of structure. The first two scales are from the shortened version of the Parenting Scale (Irvine, Biglan, Smolkowski, & Ary, 1999). The first scale, laxness ($N = 6$ items), describes a parent who is permissive and inconsistent when providing discipline. The second scale, overreaction ($N = 4$ items), measures the parental tendency to react on child’s misbehavior in an unstructured, exaggerated manner. For both laxness and overreaction, the items present a specific parental situation followed by two options that act as opposite anchor points for a 7-point scale. A high score indicates that parents are respectively lax or overreactive in their parenting. A sample item for laxness is “If my child gets upset when I say ‘no’: I stick to what I said -or the opposite- I back down and give in to my child”. For overreaction, “When my child misbehaves: I handle without getting upset -or the opposite- I get so frustrated that my child can see I’m upset”. The third scale, inconsistency, was assessed by five items from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996) that measure parental inconsistency in applying discipline. Parents rated themselves on a 5-point

Lickert-scale, ranging from 1 = *never* to 5 = *always*. A sample item is “You threaten to punish your child and then do not actually punish him”. Internal reliability was .82 and .78 for mothers and fathers respectively.

Positive discipline. Two indicators of positive discipline were assessed. Parental reinforcement of good behavior was measured by 6 items derived from the Alabama Parenting Questionnaire (Shelton et al., 1996). Parents had to indicate how often they praised their child’s good behavior (i.e., “You praise your child when he behaves well”). The second indicator, induction, was measured with four items (Gerris et al., 1993). Parents reported how often they point out the consequences of the child’s misbehavior. A sample item is “When my child does not listen to me, I explain to him that it annoys me”. Both scales are measured on a 5-point scale, ranging from 1 = *never* to 5 = *always*. The internal reliability was .76 for mothers and .75 for fathers.

Psychological control. To assess positive control two scales were used. Four items measured love withdrawal (Gerris et al., 1993). Parents reported how often they used withdrawal of attention and/or affection as a technique to discipline their child (e.g. “When my child misbehaves, I don’t listen to what he says”) The second scale, verbal punishment, was measured with ten items derived from the Discipline-scale of the Parent Behavior Checklist (Fox, 1994), and assessed the parental tendency to raise their voice as a response to their child’s misbehavior (e.g., “I yell at my child for being too noisy at home”). Both scales are measured on a 5-point scale (1 = *never* to 5 = *always*). Internal reliability was .72 for both mothers and fathers.

Physical punishment. Two scales assessed parental use of physical punishment. Five items were drawn from the Discipline-scale of the Parental Behavior Checklist (Fox, 1994), and five items were from the Alabama Parenting Questionnaire (Shelton et al., 1996). The items measured the frequency in which parents use physical punishment as a manner to discipline their child. On a 5-point scale parents had to indicate how often they use spanking as a discipline-technique, ranging from 1 = *never* to 5 = *always*. Sample items are “When my child has a temper tantrum, I spank him”, and “You spank your child with your hand when he has done something wrong”. The internal reliability of this parenting dimension was .76 for mothers and .78 for fathers.

Parental Characteristics

Parental personality. Parents described their own personality using a Dutch adaptation (Gerris et al., 1998) of 30 adjective Big Five personality markers selected from Goldberg (1992). Extraversion taps the extent to which a person is sociable, fun loving and optimistic. Persons who are Agreeable are friendly, helpful and straightforward. A high score on the dimension Openness to Experience indicates that a person tends to enjoy new experiences, has broad interests and is very imaginative. Conscientiousness reflects the extent to which a person is well organized and has high standards. Emotional Stability measures the degree to which a person is nervous, anxious and irritable. Parents indicated on a 7-point scale (1 = *very untrue for me* to 7 = *very true for me*) the degree to which a trait adequately described their personality. Each personality dimension was measured by 6 items. The reliabilities for fathers and mothers ranged from .81 to .91.

Parental self-control. Self-control was assessed by 24 items developed by Grasmick, Title, Bursik and Arneklev (1993). The parents rated themselves on a 4 point scale, ranging from 1 = *strongly disagree* to 4 = *strongly agree*. A sample item is "I often act on the spur of the moment". Persons scoring low on self-control are impulsive, prefer simple tasks, have a high risk-seeking potential, favor physical (as opposed to mental) activities, are self-centred and possess volatile tempers. The internal consistencies were .81 for the mothers and .80 for the fathers.

Contextual Characteristics

Marital satisfaction. Mother and father assessed the quality of their relationship separately with six items coming from the ELDEQ-study in Quebec (ÉLDEQ, 2000). The 6 items (i.e., "In general, how often do you think that things between you and your partner are going well?") had to be rated on a 6-point scale, ranging from 1 = *all the time* to 6 = *never*. The internal consistencies were .70 for mothers and .67 for fathers.

Family size. Mothers were asked to indicate the number of children living in the home.

SES. To classify the family's socioeconomic status the education and occupation of both parents are used according to the four-factor index developed by Brandis and Henderson (1970).

Child Characteristics

Temperament. Five temperamental features were measured by the Early Childhood Behavior Questionnaire (Putnam, Gartstein, & Rothbart, 2006). Mothers were asked to report on a five-point scale to what extent each item applied to their child (1 = *never* to 7 = *always*). Inhibitory control ($N = 14$ items) refers to the ability of the child to stop, moderate or suppress a behavior under instruction (e.g., "When told 'no', how often did your child stop the activity immediately?"). Soothability ($N = 14$ items) refers to the rate of recovery from peak stress, excitement, or general arousal (e.g., "Following an exciting event, how often did your child calm down quickly?"). The scale Frustration ($N = 9$ items), measures how often a child shows signs of anger in situations involving conflicts with the mother or another child (e.g. "When it was time for bed and your child did not want to go, how often did he physically resist or struggle?"). Shyness ($N = 11$) indicates how often a child shows inhibition, distress or signs of shyness in novel or uncertainty provoking situations (e.g., "When he saw other children while in the park or playground, how often did your child approach and immediately join in the play?"). Activity Level ($N = 7$ items), refers to the level of gross motor activity (e.g., "How often during the last two weeks did your child play games which involved running around, banging, or dumping out toys?"). The internal reliabilities for these temperamental features were .90, .85, .72, .75 and .68 respectively.

Language development. Seven items, selected from various sources, measured to what extent the child is able to express himself with words (Brouwers-de Jong, Burgmeijer, & Laurent de Angulo, 1996; Bunge et al., 2005). Each item consists of a statement about the verbal capacities of the child. Sample items are "Has your child ever spoken a partial sentence of 3 words or more?", "Does your child know words or has own words for objects/events other than mammy and daddy, such as ball, car, eating, go to sleep?", "Has your child difficulties by clarifying its needs by means of words?" Mother had to indicate if the statement was 1 = *true*, or 2 = *false*, for her son. The internal reliability was .71.

2.4 Results

2.4.1 Factor Structure of Parenting

In order to examine whether the 11 parenting scales that were measured in the present study represent the 5 parental dimensions (support, lack of structure, positive discipline, psychological control and physical punishment) and to verify if these 5 parental dimensions have similar meanings (i.e. are measurement invariant) for both mothers and fathers, a confirmatory factor analysis was conducted, using structural equation modeling (LISREL; Jöreskog & Sörbom, 2003). Since the mothers and fathers in the present study come from the same family -and as a consequence cannot be considered as independent- a factor model was construed in which maternal and paternal dimensions were assessed simultaneously. The model specified ten factors (five for maternal and five for paternal dimensions) as separate but correlated parenting dimensions (Figure 2.1). The loading of a single scale on each factor was constrained to 1.0 to establish a metric for the latent factors. Factor variances and correlations between the factors were free to vary. Furthermore, the model required that maternal scales only loaded on maternal dimensions of parenting and paternal scales only on paternal dimensions. The test for gender differences involved the comparison of a model in which the loadings of maternal scales on the maternal dimensions were allowed

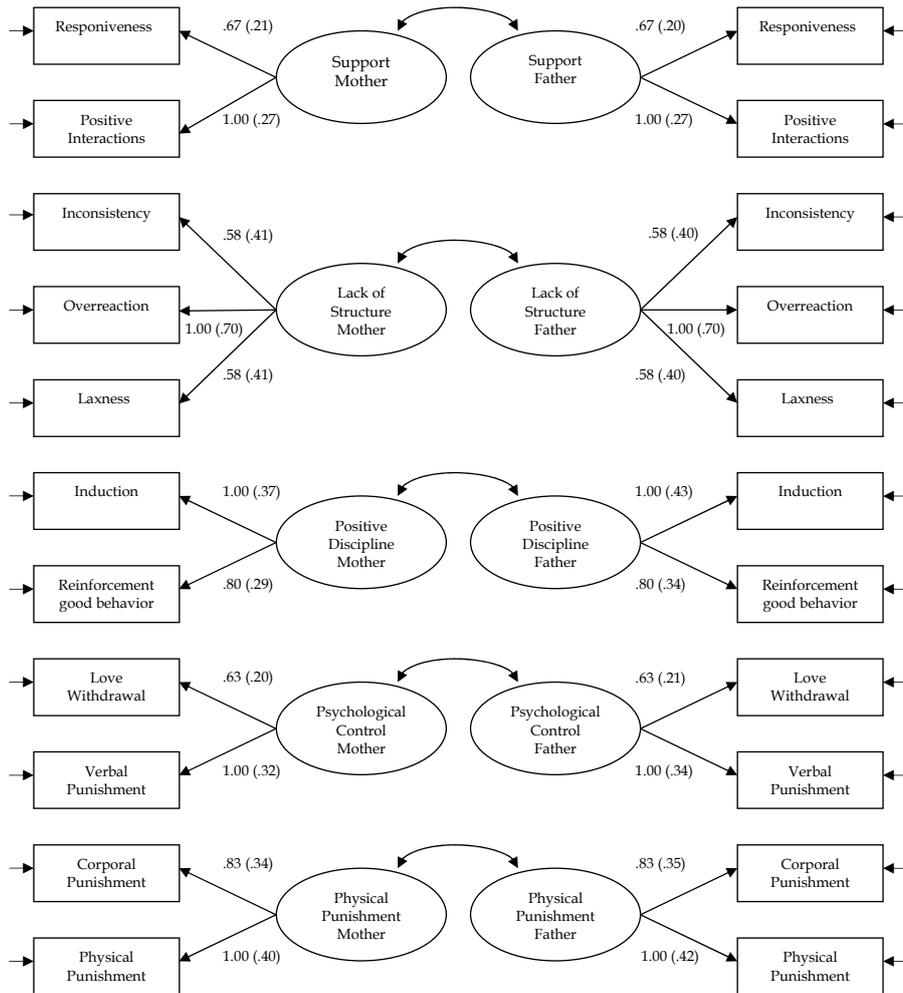


Figure 2.1 Factor Structure of Parenting for Maternal and Paternal Behavior.

Coefficients in front of parentheses are unstandardized loadings, the coefficients within parentheses are standardized loadings. All factor-loadings are significant at $p < .001$ level.

to be different from the loadings of paternal scales on the paternal dimensions (unconstrained model) to a model in which these loadings were constrained to be equal across gender (constrained model).

A significant difference between these two models would indicate that there are significant differences in the factor structure of maternal and paternal behavior. The constrained model produced an adequate fit: $\chi^2(166) = 205.91$, RMSEA = .04, NNFI = .93, CFI = .96. The factor analysis in which the factor loadings of maternal and paternal dimensions were unconstrained, showed no significant difference in chi-square compared to the constrained model, $\Delta df = 6$, and $\Delta \chi^2 = 9.40$, $p > .05$. This indicates that the factor structure is consistent across gender and that the parenting dimensions are measured invariant for mothers and fathers.

2.4.2 Descriptive Statistics and Correlation Analysis

Table 2.1 shows that there are no differences in the reports of mothers and fathers on the levels of lack of structure, positive discipline, psychological control and physical punishment. However, mothers reported more support than fathers. Mothers scored also higher on extraversion and self-control than fathers. Fathers reported higher scores on emotional stability than mothers.

To assess the degree of relatedness within and between the three blocks of predictors (personal, contextual and child characteristics), bivariate correlations were computed for mothers and fathers separately (Table 2.2). Within the block of maternal personality, 5 out of 15 correlations were significant, with a mean correlation of $r = .16$, ranging from $r = .02$ and $r = -.50$. For paternal personality 8 out of 15 correlations were significant, with a mean correlation of $r = .21$, ranging from $r = .02$ to $r = .43$. None of the contextual variables were interrelated. Within the block of child characteristics, 3 out of 15 correlations were significant. The mean correlation was $r = .14$ (minimum $r = .02$, maximum $r = .39$).

With regard to independency of the predictor-variables between the three blocks of predictors, the highest correlation was found between maternal extraversion and soothability of the child, $r = .37$, $p < .001$. Overall, these relatively low mean correlations suggested moderate to high levels of independency of the predictor-variables within and between the three blocks.

Contributions of Parental, Contextual and Child Characteristics

Table 2.1 Means, Standard Deviations and Differences Between Mothers and Fathers

	Mothers		Fathers		t-value (Paired)
	M	SD	M	SD	
Parenting					
Support	4.41	.34	4.14	.40	6.49***
Lack of Structure ¹	-.05	.79	.04	.78	-.95
Positive Discipline	3.73	.58	3.62	.59	1.59
Psychological Control	1.49	.38	1.58	.44	-1.93
Physical Punishment	1.40	.43	1.44	.42	-.92
Parental Characteristics					
Extraversion	5.32	1.07	4.86	1.08	3.47***
Agreeableness	5.74	.55	5.72	.65	.18
Conscientiousness	5.00	1.09	4.87	1.10	.95
Emotional Stability	4.73	1.01	5.07	.96	-2.62*
Openness	4.74	1.01	4.94	.96	-1.66
Self Control	3.07	.30	2.94	.31	3.18**
Contextual Characteristics					
Marital Satisfaction	4.89	.50	4.83	.52	1.45
SES	11.06	2.01			
Family Size	1.71	.93			
Child Characteristics					
Inhibitory control	3.68	.93			
Soothability	5.84	.64			
Activity level	3.91	.92			
Frustration	3.40	.87			
Shyness	3.30	.82			
Language abilities	1.42	.25			

Note. ¹ Standardized scores, * $p < .05$; ** $p < .01$; *** $p < .001$

Table 2.2 Intercorrelations Among Determinants of Parenting

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Extraversion		.35***	-.08	.28**	.24*	.12	.19*	-.03	.11	.12	-.04	-.04	-.07	-.28	.18
2. Agreeableness	.27**		.11	.33***	.43***	.25**	.17	-.19*	.00	.19*	.01	-.11	-.10	-.13	.09
3. Conscientiousness	-.05	.02		.13	.02	.28**	.01	-.13	.11	.19	.05	-.01	.04	.02	.15
4. Emotional Stability	.50***	.20*	-.15		.08	.23*	.33***	-.09	.25**	.12	.08	.04	-.07	-.08	.28**
5. Openness	.18	.09	-.06	.07		.17	.10	.08	.09	.22*	.06	-.04	-.05	-.08	.03
6. Self Control	.03	.22*	.28**	.16	-.18		.30**	-.11	.13	.22*	-.08	-.12	-.04	-.16	.29**
7. Marital Satisfaction	.17	.13	.07	.23*	.21*	.11		-.04	.15	.09	-.02	.02	-.02	-.09	.18
8. Family Size	.06	-.03	.04	.01	.03	-.07	-.03								
9. SES	.18	.05	.15	.12	.10	.12	.13	.09							
10. Inhibitory Control	.01	.11	.18	.14	.06	.30**	.26**	-.08	.06						
11. Soothability	.37***	.28**	.13	.24*	.06	.17	.08	.03	.21*	.10					
12. Activity Level	-.01	-.00	-.13	-.10	.12	.01	-.03	.01	-.06	-.15	-.11				
13. Frustration	-.19*	-.07	-.01	-.31**	-.02	-.21*	-.05	.22*	.02	-.32**	-.39***	.18			
14. Shyness	-.19*	-.06	.07	-.31**	.04	-.10	-.01	.05	.10	-.19	-.04	.02	.23*		
15. Language Abilities	.07	-.16	-.07	.15	.24*	-.14	.13	-.16	.15	.06	-.04	.07	-.05	.08	

* $p < .05$; ** $p < .01$; *** $p < .001$

Correlations among predictor variables and parenting behavior are shown in Table 2.3. Each predictor, with exception of children's shyness, was related to at least one dimension of parenting. The pattern of correlations between parental characteristics and parenting dimensions is partly comparable for mothers and fathers. Parents high on emotional stability and parents high on self-control reported higher scores on support and structure and lower scores on psychological control. Mothers and fathers high on agreeableness indicated higher scores on support, structure and positive discipline. For maternal characteristics, 5 more significant correlations were found with her reported parenting. That is, extraverted mothers reported more support, agreeable mothers and mothers high on self-control indicated to use physical punishment less often, and emotional stable mothers reported more positive discipline. With regard to paternal characteristics, fathers high on openness indicated to be more supportive and structured in their parenting.

With regard to social contextual features, Table 2.3 shows that parents who are satisfied with their marriage reported more support and less lack of structure. Mothers who scored high on marital satisfaction reported more positive discipline. The socio-economic status was negatively related with the use of physical punishment in both mothers and fathers. Family size was related to lower scores of paternal support and paternal positive discipline.

As for child characteristics, only few correlations were found significant. Maternal support was related to higher levels of child's inhibitory control and soothability and lower levels of frustration. Paternal support was only positively related to the language abilities of the child. Lack of structure in maternal behavior was related to lower levels of inhibitory control. Mothers' use of psychological control was positively related with high activity level.

Overall, the predictors appear to be more strongly related to support, lack of structure and positive discipline, than to psychological control and physical punishment. Child characteristics show a weak and inconsistent relationship to parenting and seem to correlate more strongly with maternal than with paternal parenting.

Table 2.3 Correlations Among Predictor Variables and Parenting Dimensions

	Support		Lack of Structure		Positive Discipline		Psychological Control		Physical Punishment	
	M	F	M	F	M	F	M	F	M	F
1. Personal characteristics										
Extraversion	.26**	.08	-.17	-.17	.14	.05	-.08	-.02	-.17	-.05
Agreeableness	.27**	.35***	-.24*	-.22*	.23*	.24*	-.12	-.06	-.24*	.04
Conscientiousness	.09	.07	-.20*	-.13	-.08	.02	-.08	.00	-.11	-.02
Emotional stability	.28**	.29**	-.31**	-.39***	.21*	-.01	-.23*	-.26	-.11	-.15
Openness	.16	.38**	.00	-.21*	.08	.12	.09	-.09	-.02	-.06
Self-control	.22*	.22**	-.31**	-.23*	.08	.01	-.39***	-.34***	-.21*	-.10
2. Contextual characteristics										
Marital satisfaction	.35***	.22**	-.31**	-.21*	.30**	.15	-.04	-.11	.05	-.04
Family size	-.02	-.28**	.13	.17	-.17	-.19*	-.03	.17	.12	.14
SES	.06	.06	.08	.00	.09	-.09	-.07	.03	-.27**	-.27**
3. Child characteristics										
Inhibitory control	.36***	-.01	-.28**	-.12	.09	-.02	-.17	-.01	-.08	.11
Soothability	.24*	.08	-.09	-.15	.04	-.05	-.18	-.08	-.09	-.06
Activity level	-.15	.01	.17	.07	-.06	-.02	.31**	.07	-.03	-.04
Frustration	-.23*	-.09	.09	.05	.02	.08	.18	.06	.06	.00
Shyness	-.17	-.08	.12	.18	-.05	.00	.03	.10	-.08	.13
Language abilities	.13	.26**	-.01	.01	.23*	.13	.08	.01	.04	-.05

Note. M = Mother, F = Father. * $p < .05$; ** $p < .01$; *** $p < .001$

2.4.3 Effects of Personal, Contextual and Child Characteristic on Parenting Behavior

To test more rigorously whether parental, contextual and child characteristics had significantly different effects on maternal and paternal behavior, model-fitting analyses were carried out using structural equation modeling (LISREL 8; Jöreskog & Sörbom, 2003). Each of the five parenting dimensions were analyzed separately, as the number of participants per parameter in a full model containing all five parental behaviors would exceed the appropriate ratio (at least 5 to 1). The small sample size also did not allow us to test a regression model in which all 6 parental characteristics, 3 contextual features, and 6 child characteristics were entered simultaneously (Bentler, 1990). Therefore, in order to examine the unique contributions of the characteristics from the three domains, the regression analyses were carried out in two steps. In both steps, regression-models were construed in which maternal and paternal behavior were assessed simultaneously. In the first step, for all five parenting dimensions three regression-models were carried out, one for each domain of predictors. Subsequently, within these three models the characteristics that contributed significantly to the specific parenting dimension were identified. By comparing a model in which the regression-coefficients were constrained to be equal for mothers and fathers with a model in which these constraints were released, mother-father differences were examined. In the second step, a final model was construed in which the parental, contextual and child characteristics that contributed significantly in the first step were entered simultaneously to examine the unique contributions of the three predicting domains and the various characteristics. Again, the fit of the constrained and unconstrained models were compared in order to examine if characteristics had similar effects on maternal and paternal behavior. Results of the final models are given in Table 2.4.

Support. The regression model in which the effects of parental characteristics on support are constrained to be equal for mothers and fathers, showed a good fit, $\chi^2(18) = 15.27$, RMSEA = .00, NFI = .95, CFI = 1.00. Releasing constraints did not significantly improve the fit, $\Delta \chi^2(6) = 2.32$, $p > .05$. The model showed that agreeableness, emotional stability and openness are positively related to support. The constrained model of the social contextual characteristics was also acceptable, $\chi^2(5) = 8.79$, RMSEA = .08, NFI = .89, CFI = .94. The regression

model in which the effect sizes of contextual features were unconstrained across mothers and fathers showed no significant difference in chi-square compared to the constrained models, $\Delta \chi^2 (3) = 7.06, p > .05$. For contextual features, marital satisfaction was positively related to both maternal and paternal support.

For the constrained model of child characteristics, fit-measures were not in acceptable range, $\chi^2 (6) = 12.91$, RMSEA = .11, NFI = .86, CFI = .89. The difference in chi-square between the constrained and unconstrained model was significant, $\Delta \chi^2 (6) = 12.91, p < .05$, suggesting that there are different effects of child characteristics on maternal and paternal behavior. To determine which of the child characteristics had this different effect, the constrained model was tested again, and the equality constraints were removed one at the time. The results showed that only the effect of inhibitory control on support was significantly different for mothers and fathers. Removal of this equality constraint led to a model with adequate fit, $\chi^2 (5) = 4.23$, RMSEA = .00, NFI = .96, CFI = 1.00, which was not significantly different in chi-square from the unconstrained model, $\Delta \chi^2 (5) = 4.23, p > .05$. This model showed that child's soothability and language abilities are positively related to maternal and paternal support, and that the inhibitory control of the child only influenced maternal support.

The final model, in which all significant predictors from the three blocks of predictors were entered simultaneously (with inhibitory control of the child only having an effect on maternal support), showed good fit, $\chi^2 (15) = 10.35$, RMSEA = .00, NFI = .97, CFI = 1.00. The difference in chi-square between the unconstrained and constrained model was not significant, $\Delta \chi^2 (6) = 3.05, p > .05$, indicating that also in this final model the effects of parental, contextual and child characteristics were similar for mothers and fathers. The constrained model revealed that only the effects of agreeableness, emotional stability, marital satisfaction and inhibitory control were unique (Table 2.4). Higher levels of support were reported by parents who are agreeable and emotionally stable, parents who are satisfied with their marriage and by mothers of children who are high on inhibitory control.

Lack of structure. For lack of structure, the constrained model of parental characteristics, $\chi^2 (18) = 14.70$, RMSEA = .00, NFI = .95, CFI = 1.00, the constrained model in which the effects of social contextual features were tested, $\chi^2 (5) = 7.31$, RMSEA = .06, NFI = .90, CFI = .96, and the constrained model of child characteristics, $\chi^2 (6) = 3.75$, RMSEA = .00, NFI = .95, CFI = 1.00, all showed acceptable to good fit. The differences in chi-square between the constrained and unconstrained models were not significant, $\Delta \chi^2 (6, 3, \text{ and } 6) = 6.33, 1.05, \text{ and } 3.75; p > .05$. The three models showed significant effects for conscientiousness, emotional stability, marital satisfaction, and child's inhibitory control.

The final model showed adequate fit, $\chi^2 (10) = 12.09$, RMSEA = .05, NFI = .92, CFI = .98. The difference in chi-square between the unconstrained and constrained model was not significant, $\Delta \chi^2 (4) = 3.67, p > .05$, indicating that in this final model the effects of the predictors were similar for mothers and fathers. Within this final model all effects remained significant, except for inhibitory control. Thus, parents who are highly conscientious and emotionally stable, and parents who are satisfied with their marriage report to be more structured.

Positive discipline. With regard to positive discipline, the constrained model of parental characteristics, $\chi^2 (18) = 18.12$, RMSEA = .01, NFI = .92, CFI = .99, the constrained model of social contextual features were tested, $\chi^2 (5) = 4.32$, RMSEA = .00, NFI = .94, CFI = 1.00, and the constrained model of child characteristics, $\chi^2 (6) = 1.98$, RMSEA = .00, NFI = .97, CFI = 1.00, all showed good fit. The differences in chi-square between the constrained and unconstrained models were not significant, $\Delta \chi^2 (6, 3, \text{ and } 6) = 4.85, 3.69, \text{ and } 1.98; p > .05$. Results from these three models indicated agreeableness, marital satisfaction, family size and language abilities to have significant effects on parental report of positive discipline.

The final model showed a good fit, $\chi^2 (8) = 5.52$, RMSEA = .00, NFI = .95, CFI = 1.00. Comparison between the unconstrained and the constrained model did not show significant difference in chi-square, $\Delta \chi^2 (4) = 3.74, p > .05$. In this final model only the effect of family size was not significant any more. Positive discipline is reported more frequently by parents who are agreeable, parents who are satisfied with their marriage, and by parents of children with better language skills.

Table 2. 4. Standardized Gamma-coefficients in Multiple Regressions of Parental Distinct Sets of Predictors (Estimated Simultaneously)

	Support		Lack of Structure		Positive Discipline		Psych. Control		Phys. Punishment	
	M	F	M	F	M	F	M	F	M	F
1. Personal characteristics										
Extraversion					.20**	.22**				
Agreeableness	.19**	.20**								
Conscientiousness			-.15*	-.14*						
Emotional stability	.14**	.12**	-.32***	-.29***			-.20**	-.16**		
Openness	.10	.09**								
Self-control							-.33***	-.29***	-.14*	-.15*
ΔR^2	.15***	.15***	.14***	.17***	.05**	.07**	.18***	.14***	.03*	.03*
2. Contextual characteristics										
Marital satisfaction	.17*	.16**	-.19**	-.19**	.16*	.16*				
Family size					-.13	-.12			.13	.14
SES									-.26***	-.26***
ΔR^2	.05*	.03*	.05**	.04**	.05**	.05**			.08***	.09***
3. Child characteristics										
Inhibitory control	.30***	-	-.10	-.10						
Soothability	.10	.09								
Activity level							.21**	.17**		
Frustration										
Shyness										
Language abilities	.12	.11			.15*	.14*				
ΔR^2	.13**	.01	.02	.00	.02*	.03*	.05**	.03**		
R^2	.33***	.19***	.21***	.21***	.12*	.15*	.23***	.17***	.11***	.11***

Note. M = Mother, F = Father. Psych. Control = Psychological Control; Phys. Punishment = Physical Punishment * $p < .05$; ** $p < .01$; *** $p < .001$

Psychological control. The constrained models that tested the effects on psychological control, showed adequate fit for parental characteristics, $\chi^2(18) = 15.82$, RMSEA = .00, NFI = .94, CFI = 1.00, social contextual features, $\chi^2(5) = 6.79$, RMSEA = .06, NFI = .87, CFI = .99, and child characteristics, $\chi^2(6) = 5.31$, RMSEA = .00, NFI = .93, CFI = 1.00. The differences in chi-square between the constrained and unconstrained models were not significant, $\Delta \chi^2(6, 3, \text{ and } 6) = 1.38, 4.34, \text{ and } 5.31$; $p > .05$. Parental emotional stability and self-control, and child's activity level had significant effects on psychological control. For contextual characteristics, no significant effects were found.

The final model, in which the effects of these 3 characteristics were examined simultaneously, showed acceptable fit, $\chi^2(7) = 10.95$, RMSEA = .07, NFI = .85, CFI = .92. Comparison between the unconstrained and the constrained model did not show significant difference in chi-square, $\Delta \chi^2(3) = 4.53$, $p > .05$. Parents who are emotionally unstable and lack self-control, and parents of highly active children report to use psychological control more frequently.

Physical punishment. With regard to physical punishment, the constrained models that tested the effects of parental characteristics, $\chi^2(18) = 15.55$, RMSEA = .00, NFI = .94, CFI = 1.00, social contextual features, $\chi^2(5) = 0.64$, RMSEA = .00, NFI = .99, CFI = 1.00, and for the constrained model of child characteristics, $\chi^2(6) = 9.70$, RMSEA = .08, NFI = .85, CFI = .90, showed acceptable to good fit. The differences in chi-square between the constrained and unconstrained models were not significant, $\Delta \chi^2(6, 3, \text{ and } 6) = 8.52, 0.43, \text{ and } 9.70$; $p > .05$. These constrained models showed significant effects for self-control, family size and SES. No significant effects were found for child characteristics.

The final model showed acceptable fit, $\chi^2(5) = 3.51$, RMSEA = .00, NFI = .93, CFI = 1.00. Comparison between the unconstrained and the constrained model did not show significant difference in chi-square, $\Delta \chi^2(3) = 0.63$, $p > .05$, indicating that also in this final model effects of these characteristics are similar for mothers and fathers. Parents who lack self-control and parents low on SES report to use physical punishment more frequently.

2.5 Discussion

The purpose of this study was to expand the knowledge with regard to maternal and paternal behavior during toddlerhood and their determinants. Whereas the focal point of past work on the contributors of parenting during this developmental period was frequently restricted to parental responsiveness, the current study conveys a multidimensional approach of parenting and focused on five parental dimensions that are central during toddlerhood: support, (lack of) structure, positive discipline, psychological control and physical punishment. Results from the confirmatory factor analysis supported these five parenting dimensions as metric invariant across mothers and fathers. This finding indicates that mother-father comparisons can be made.

By adopting Belsky's (1984) process model, it was examined to which extent these parenting dimensions are determined by parental, contextual and child characteristics. Additionally, it was tested whether the effects of these characteristics were different for mothers and fathers. Results showed that the three predicting domains indeed contributed to parenting behavior. Parental characteristics proved to be the most powerful contributors to all five parental dimensions. With regard to contextual characteristics, significant contributions were found for all parenting dimensions with exception of psychological control. For the use of physical punishment, contextual characteristics appeared to be the most important predictors. The contribution of child characteristics to parenting was fairly limited. Unique effects of this domain were relatively small and only found significant for maternal support and maternal and paternal lack of structure. In general, these results support Belsky's (1984) model, proposing that parental characteristics are the most important determinants of parenting behavior, followed by contextual characteristics and child characteristics being the least important contributors.

The unique effects of the parental, contextual and child characteristics found in this study are affirmative of former findings on the determinants of parenting. Results showed that parental agreeableness, emotional stability and conscientiousness are important contributors to parental dimensions, as was found by many others (Belsky & Barends, 2002; Clark et al., 2000; Kendler et al., 1997; Metsäpelto & Pulkkinen, 2003; Pinderhughes et al., 2001; Van Bakel & Riksen-Walraven, 2002; Woodworth et al., 1996). Parents who were agreeable, who were

emotionally stable, and who were conscientious reported higher scores on support and positive discipline and lower levels of lack of structure and psychological control. Parental self-control added to the explained variance in two parenting behaviors: psychological control and physical punishment. Parents low on self-control, that is, parents who are self-centred and prone to act on impulse, reported a more frequent use of psychological control and physical punishment. Thus, parental self-control was associated with two harsh discipline techniques. This finding argues that in future studies on determinants of parenting the personality domain should be expanded to include self-control, especially since these two harsh discipline techniques have repeatedly been associated with developmental problems in children (Barber, 1996; DeKlyen, Speltz, & Greenberg, 1998).

The findings of the present study that marital satisfaction and SES are influencing parenting behavior, are also in line with previous studies (Belsky, Youngblade et al., 1991; Kendler et al., 1997; Mann & MacKenzie, 1996; Pinderhughes et al., 2001; Van Bakel & Riksen-Walraven, 2002). Parents who were satisfied with their marriage reported higher levels of support and positive discipline and lower levels of lack of structure. It seems that the support these parents get from their spouses promote their parental competence. With regard to the family's socio-economical status, results showed that parents low on SES reported higher levels of physical punishment. Remarkably, this socio-economical status contributed more to physical punishment than any other parental, contextual or child characteristic. It is argued that this negative relationship between SES and harsh discipline is mediated by parental beliefs about spanking (Kohn, 1963). This mediating role of parental values between social class and parental behavior was also suggested for Dutch families (Gerris, Deković, & Janssens, 1997). It is also possible that parents low on SES experience more stress that undermines adaptive parenting (McLoyd, 1990).

The contribution of child characteristics to parenting was fairly limited. Child characteristics only explained a unique proportion of variance in maternal support and maternal and paternal lack of structure. As for the child's temperamental features, only inhibitory control and activity level influenced parenting. That is, mothers reported more support when their child had higher levels of inhibitory control and both parents indicated higher scores on psychological control when their child was highly active. The finding that, in general, the temperamental features of the child were not strongly predictive of parenting is in line with

previous studies. Former studies found that child's emotionality was not predictive of maternal or paternal behavior (Clark et al., 2000; Woodworth et al., 1996). Van Bakel and Riksen-Walraven (2002) only found child's social fearfulness related to the quality of parenting.

The language abilities of the child exerted positive influence on the parental report of using positive discipline. One explanation is, that in this study positive discipline is composed of two discipline techniques in which the use of speech is central: praising the child and explaining what the consequences of specific behavior are. It can be assumed that when children are more communicative in interactions with their parents, and thus showing that they understand language, parents are more likely to use speech to discipline their child.

In general, two conclusions can be drawn from the results with regard to the unique effects of parental, contextual and child characteristics on parenting behavior. First, the findings emphasize the importance of considering predictors from different domains simultaneously. This is shown by the fact that some predictors that were significant when analyzed separately per domain, had no significant effects once we controlled for predictors from other domains (e.g. child's soothability and family size). Second, conceptualization of parenting as multidimensional seems to be important, as the five parenting dimensions were predicted by somewhat different sets of variables.

2.5.1 Mother-Father Comparisons

One of the major issues addressed in this study, was the comparison of the determinants of maternal and paternal dimensions. The exclusive focus on maternal behavior in previous studies undermined the important role of paternal behavior. In general, mothers and fathers were mainly similar in their reported parenting. Both mothers and fathers reported relatively high levels of positive discipline and low levels of psychological control and physical punishment. The only difference between mothers and fathers was in the level of their reported support, with mothers rating themselves slightly higher on this dimension than fathers did. These results are in accordance with previous studies in which differences were found for responsiveness or warmth, but not for other parental behavior (Calzada et al., 2004; Kendler et al., 1997).

In addition, the present study showed that parental, contextual and child characteristics have similar influence on both maternal and paternal behavior. In

contrast, the few previous studies that focused on the determinants of maternal and paternal behavior showed small but significant differences between mothers and fathers (Belsky, Youngblade et al., 1991; Kochanska et al., 2004). The present study uncovered that only one characteristic had different effects for mothers and fathers. That is, child's inhibitory control did added to maternal, but not to paternal report of support. This suggests that mothers are more sensitive to their child's ability to inhibit behavior than fathers.

There are two possible explanations for the fact that the present study found no differences in the effects of parental, contextual and child characteristics for mothers and fathers whereas other studies did. The first explanation lies in the analyses that were used. The studies that did find differences in determinants of maternal and paternal behavior (Belsky et al., 1995; Belsky, Youngblade et al., 1991; Grolnick et al., 1996) based their results on comparisons of correlation- or regression coefficients, without statistically testing these differences. The present study used a more rigorously, statistically test to compare the effects of mothers and fathers. Two other studies that statistically tested the effects of determinants on maternal and paternal behavior also failed to find significant differences between the effects on mothering and fathering (Metsäpelto & Pulkkinen, 2003), or emphasized that caution is needed with regard to these mother-father differences, as these are small and need to be replicated (Kochanska et al., 2004).

Secondly, the present study took into consideration the concept of metric invariance. As clarified in the introduction, to examine differences in maternal and paternal behavior it is critical that the measures of these behaviors have similar meaning for mothers and fathers. If the assumption of measurement invariance has not been established, then the findings of between-group differences may simply mean that different behaviors were measured (Cheung & Rensvold, 2002). Thus, when measurement invariance is not accounted for, the interpretation of between-differences may be biased. In this study, the parental dimensions that were considered were metric invariant. This gives us greater confidence that the results with regard to similarities and differences in the effects of determinants on parenting can be interpreted by that means, and are not a consequence of measuring different behaviors for mothers and fathers.

2.5.2 Limitations and Conclusions

There are some limitations within the present study. First, it should be noted that the results are based on cross-sectional data and thus no causal relationships can be drawn. Following Belsky's model (1984), in the present study we assumed that parental, contextual and child characteristics influence parenting behavior. Parental characteristics are known to exhibit considerable continuity over time, and it is likely that they precede and influence parenting behavior (McCrae & Costa, 1994). For the associations between child characteristics and parenting, however, the direction of the effects is less clear. Belsky, Fish and Isabella (1991), for example, have found that the characteristics of the child are influenced by parental behavior. Longitudinal research is needed to confirm the direction of the paths between parental, contextual and child characteristics and parenting behavior.

A second limitation of this study is that only parental self-reports were used, which are likely to suffer from social desirability effects (Nederhof, 1985). It should be noted that parenting reports and not actual parenting behavior was measured. It can be thought that the reported parental behavior is different from the behavior these parents actually show. However, there are some studies that addressed to this and concluded that what parents report gives a good indication of what parents actually do (Johnston, Scoular, & Ohan, 2004; Vereijken, Hanta, & Van Lieshout, 1997). Furthermore, because both the determinants of parenting and the parenting behavior itself were based on parental report, the independence of these measures may be doubtful. Therefore, the results need to be interpreted carefully. However, parental, contextual and child characteristics were found only moderately related. Moreover, the multiple regression analyses showed that parental, contextual and child characteristics independently explained unique percentages of variance in parenting behavior.

Fourth, only mother reported the characteristics of the child. This may lead to informant bias. However, the finding that the effects of child characteristics are generally similar for mothers and fathers indicates that this bias did not affect the results significantly.

The present study is based on boys of 17 months of age. It is possible that the results would have been different for girls. However, two previous studies on the determinants of parenting that included both boys and girls found no effect of child's gender (Kochanska et al., 2004; Neitzel & Stright, 2004). It is also

possible that the same study on older children would lead to different results. Although the results of the present study with regard to the effects of personality and the social contextual features on parenting resemble that of previous work, the effects of child characteristics were very limited. One of the reasons may be the child's age. It is possible that the child characteristics have more impact on their parent's behavior, as the children grow older (Van Bakel & Riksen-Walraven, 2002).

Despite these methodological limitations, the present study expands existing literature on maternal and paternal behavior in several ways. First, it was shown that various parenting dimensions that are comparable for mothers and fathers can conceptualize parenting. Secondly, this study provides evidence that mothers and fathers are fairly similar in parenting behavior and that these behaviors are influenced by parental, contextual and child characteristics in similar ways. Third, in addition to confirming determinants of parenting found in earlier studies, the present study identified also some important new ones, such as parental self-control and child's language abilities, that should receive more attention in future research.

3 A Short-Term Longitudinal Study of the Development of Parenting During Toddlerhood*

3.1 Abstract

This study examined four types of stability (factorial equivalence over time, mean-level stability, rank-order stability, and individual-level stability) in five parenting dimensions (support, structure, positive discipline, psychological control, and physical punishment) during toddlerhood, for both mothers and fathers. Mothers and fathers from 108 intact Dutch families with a toddler-son reported about their parenting behavior in three measurement waves when the child was 17, 23, and 29 months of age. Confirmatory factor analyses showed that all five parenting dimensions were measured invariant over time and across mothers and fathers (factorial equivalence). Support, structure, and physical punishment displayed high mean-level stability and rank-order stability. Although the mean-levels of positive discipline and psychological control increased, these parenting dimensions showed high levels of rank-order stability. Mothers and fathers reported similar levels of parenting behavior and similar patterns of change. Person oriented analyses showed there are differences in individual patterns of change in parenting, suggesting that although parenting is stable at the group-level some individual parents report changes in parenting. Examination of the characteristics that might account for these changes is an important next step in future research.

3.2 Introduction

Previous research has indicated that parenting, particularly during early childhood, is an important factor influencing a child's developmental outcomes (Maccoby, 2000; Sroufe, 2000). To be beneficial to the child's well being, it is essential that parenting is adjusted to the child's developmental stage (Holden &

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Miller, 1999). The toddler period is a time of rapid growth in cognitive, communicative, and motor abilities. Given these rapid developmental changes within the child, toddlerhood is an ideal period to gain more empirical knowledge about the flexibility and dynamics of parenting. Examining the stability of parenting over relatively short periods of time can provide particularly detailed information about how sensitive parenting is to changes within the child.

The current study examined the short-term development of parenting across 12 months with a 6 months interval. Four issues were addressed. First, following the recent conceptualization of parenting as multifaceted (Darling & Steinberg, 1993; Grusec & Davidov, 2007; O'Connor, 2002), we examined whether developmental patterns in parenting are global, or whether they are limited to particular parenting dimensions. Second, we investigated several forms of stability at both the population level and the individual level, as these represent different aspects of development (Roberts & DelVecchio, 2000). Third, we examined whether maternal and paternal dimensions display similar patterns of change. Fourth, we investigated if individual changes in one parenting dimension go together with individual changes in other parenting dimensions, both within each parent and between mothers and fathers.

3.2.1 Dimensions of Parenting

Parenting is complex in at least two ways: its conceptualization and its development. With regard to the conceptualization of parenting, it has been recognized that parenting is multifaceted as it encompasses many different behaviors. Maccoby and Martin (1983) and Rollins and Thomas (1979) stated that this multitude of different parental behaviors can be encapsulated in terms of two broad dimensions: support/warmth and control. Nowadays, these two dimensions of parenting are still used to conceptualize parenting (Darling & Steinberg, 1993; Grusec & Davidov, 2007; O'Connor, 2002). The support dimension includes parental behaviors that make the child feel comfortable and accepted as a person, such as responsiveness, sensitivity and involvement in positive parent-child interactions. The control dimension involves parental behaviors that attempt to control or redirect the behavior of the child. In addition to these two dimensions, Slater and Power (1987) distinguished a third dimension of parenting: structure. This dimension comprises parental behaviors that create a predictable and

organized environment for the child, for example by being consistent in discipline and by reacting in an appropriate and predictable manner to the child's behavior.

Previous studies have shown that high levels of warmth and structure are associated with positive developmental outcomes of the child (Frankel & Bates, 1990; Silverman & Ragusa, 1990; Stormshak et al., 2000; Wahler & Dumas, 1986). Regarding the dimension of parental control, it is important to distinguish different techniques that parents use to discipline their children, as these are conceptually different and uniquely related to children's behavior (Slater & Power, 1987). Three dimensions of parental control have received considerable attention in past research: positive discipline, psychological control, and physical punishment. High levels of positive discipline (e.g., inductive reasoning, reinforcement of good behavior) are related to positive child outcomes (Feldman & Klein, 2003). In contrast, high levels of psychological control (i.e., parental behaviors that constrain, invalidate, and manipulate a child's psychological and emotional experiences, such as verbal punishment and withdrawal of love) and physical punishment (i.e., spanking or slapping in order to discipline the child) are often linked with increased behavior problems (DeKlyen et al., 1998; Stormshak et al., 2000).

3.2.2 Development of Parenting

Two expectations can be formulated regarding the development of parenting, one based on a trait-approach and the other one based on a child-effect approach (Holden & Miller, 1999). The trait-approach assumes that parenting behaviors are trait-like and thus enduring and consistent (Forehand & Jones, 2002; Holden & Miller, 1999). In contrast to the trait approach, the child-effect approach presumes that parenting is influenced by child characteristics such as age, gender and temperamental features (Holden & Miller, 1999). According to this approach, parenting is not a stable internal trait, but a reaction to children's characteristics and developmental level, and thus changeable.

Previous studies have investigated the long-term development of a wide range of parental behaviors. For example, Dallaire and Weinraub (2005) found that maternal sensitivity and stimulating behavior increased from 6 months to 6 years. In contrast, Forehand and Jones (2002) established that the levels of maternal monitoring and warmth declined from 8 to 12 years. Loeber and colleagues (2000) found that absolute levels of physical punishment decreased, whereas

those of supervision and positive discipline increased from 6 to 18 years. In addition, McNally, Eisenberg and Harris (1991) established that maternal negative affect and control increased from age 7 to age 16.

Despite these developmental changes in parenting, these studies consistently demonstrated high levels of rank-order stability for parental behaviors in question (Dallaire & Weinraub, 2005; Forehand & Jones, 2002; Holden & Miller, 1999; Loeber et al., 2000; McNally et al., 1991). Parents tend to maintain their ordering relative to one another: those who showed high levels of a particular behavior at a certain point in time, compared to other parents, also showed high levels of this behavior at a later time point, compared to other parents. Thus, parenting is both changing and stable at the same time. Or, in other words, parents' rearing behaviors do change over time, but they do so to the same extent, so that individual differences remain the same.

3.2.3 Different Forms of Stability

When studying the stability of behavior, it is therefore important to note that different forms of stability can be distinguished which are statistically and conceptually unrelated (Roberts & DelVecchio, 2000). Four different forms of stability are distinguished in the current study: factorial equivalence over time, mean-level stability, rank-order stability, and individual-level stability.

Factorial Equivalence. Factorial equivalence over time concerns the degree to which a construct is measured similarly across points of time. It might be that when parental behavior changes, the underlying dimensions of parenting are organized differently at different points of time. When the contents of a construct change across time, longitudinal findings are difficult to interpret (Cheung & Rensvold, 2002; Corwyn & Bradley, 2002). For example, when the child grows older, the frequency with which parents cuddle their child might become a less salient indicator of the construct 'parental warmth' than on early ages. If this is the case, the content of 'parental warmth' changes over time, and longitudinal comparisons are difficult to interpret. Factorial equivalence across time is examined by testing the comparability of the form and the values of parameters within a measurement model across different points in time. Different grades of equivalence are discerned from weak (i.e., equal number of factors, with the same

indicators associated with each factor) to strict (i.e., equal factor loadings, intercepts and residuals across different time points).

Mean-level and rank-order stability. Mean-level stability and rank-order stability rely on population indexes to examine whether a construct develops over time. Mean-level stability refers to the stability in the average level of a particular behavior across time and informs us about the normative developmental course of a construct (Holden & Miller, 1999; Roberts & DelVecchio, 2000). For example, it is possible that parents as a group become less warm over time. Rank-order stability indicates to what degree the individuals within a population retain the same rank-ordering over time on a particular behavior and informs us about the variation in a construct (Holden & Miller, 1999; Roberts & DelVecchio, 2000). For instance, even though all parents might become less warm, their relative position to one another might stay the same: parents who showed more warmth at an earlier age may still show more warmth than other parents as the child grows older. These two forms of stability (mean-level, and rank-order stability) represent a variable approach, predicated on the assumption that the population is homogenous and that individuals within that population display a similar pattern of development (Laursen & Hoff, 2006).

Individual-level stability. Individual-level stability relies on individual level indexes to determine whether an individual displays similar levels of behavior over time. This form of stability represents a person approach that describes differences among individuals, assuming that the population is heterogeneous (Laursen & Hoff, 2006). Thus, individual-level stability indicates for each individual parent whether her or she changed in his or her levels of parental warmth. The distinction between individual-level stability and rank-order stability is that rank-order stability is concerned with the rank ordering of persons at different points in time, whereas individual-level stability refers to individual changes in absolute levels of parenting. One method to assess individual-level stability is by means of the Reliable Change Index (Jacobson & Truax, 1991). By computing difference scores separately for each individual, this statistical approach allows us to draw conclusions about individual patterns of development.

These four different forms of stability address different aspects of development, and the existence of one form of stability does not rule out the existence of other forms of stability (Roberts & DelVecchio, 2000). Factorial stability over time explores if the constitutions of behavior are stable over time. By examining increases or decreases in the frequencies of behaviors aggregated over the population, mean-level stability studies the development of behavior at the population level. However, mean-level stability does not allow conclusions to be drawn about the changes in parenting at the individual-level (Von Eye & Bergman, 2003). For example, no change at group level may be the result of two extreme subgroups showing either a substantial increase or a substantial decrease. Rank-order stability investigates if the rank-ordering of individuals within a population is similar across different points in time, but does not tell us to what extent these individuals change in their childrearing behavior (Von Eye & Bergman, 2003). That is, moderate to high correlation coefficients do not indicate that parenting is stable, but that when parents change, they do so to the same extent. To get a fuller picture of the developmental character, it is therefore important to investigate these different forms of stability in a single study.

3.2.4 Mothering and Fathering

There is a growing interest in the role that fathers play in children's development. It has been suggested that children preferably seek mothers to comfort and sooth them (Lamb, 1976), but prefer fathers as playmates (Clark-Stewart, 1978). In addition, studies that have compared levels of maternal and paternal behaviors have found that mothers are more responsive and warm in their parenting than fathers (Calzada, Eyberg, Rich, & Querido, 2004; Kendler, Sham, & MacLean, 1997), whereas fathers are more restrictive (Metsäpelto & Pulkkinen, 2003). It has been suggested that the developmental patterns of maternal and paternal behavior also may differ. According to Sroufe (2000), it is not until after toddlerhood that paternal involvement deepens, and so stable father-child patterns begin to crystallize at a relatively older age than mother-child patterns. However, Belsky, Gilstrap, and Rovine (1984) found that, although mothers and fathers differ in the absolute levels of their parenting (i.e., engagement, responsiveness, positive affect, care giving, and stimulation), the developmental patterns of these behaviors are similar.

Before comparing maternal and paternal behavior, we examined whether the five parenting dimensions were measured invariant across mothers and fathers. Like factorial equivalence across time is a requirement for interpreting longitudinal findings, factorial equivalence across gender is a requirement for interpreting potential differences between mothering and fathering. In addition, to permit examination of differences between mothers and fathers it was desirable to maximize the homogeneity of the children. As the literature suggests, the child's gender is linked to the parent-child relationship (Lovas, 2005; Paquette, Carbonneau, Dubeau, Bigras, & Tremblay, 2003). Given our sample size, the power of our study would have been limited if gender differences in children also had to be examined. Boys are more likely to display externalizing problems than girls (Alink et al., 2006; Webster-Stratton, 1996), which are likely to put pressure on the parent-child relationship. In addition, some scholars suggest that fathers are more involved with their sons than their daughters (Lamb, 2000; Pleck, 1997; Woodworth, Belsky, & Crnic, 1996). We therefore decided, to exclusively focus on parent-son relationships.

3.2.5 Overview of This Study

The current study investigated the stability in self-reported parenting during toddlerhood in intact families with a son. Factorial equivalence tested whether the contents of the parenting dimensions were invariant across time and across mothers and fathers, and was considered as a requirement for further longitudinal and gender comparisons. Mean-level and rank-order stability investigated the general patterns of development in parenting. Regarding mean-level stability, we expected the three control dimensions (positive discipline, psychological control, and physical punishment) to increase during this 1-year period as a reaction on the increasing levels of the child's oppositional behavior and disobedience (Keenan & Wakschlag, 2000; Nagin & Tremblay, 1999; Shaw, Gilliom, Ingoldsby, & Nagin, 2003). In contrast, we expected no changes in mean-levels for support and structure, as these two parenting dimensions are thought to be more located in the parent (Holden & Miller, 1999). Based on the consistent results of previous studies, all five parenting dimensions were expected to show high levels of rank-order stability. Individual-level stability examined how the developmental patterns of individuals differ from those of others. We expected to find a number of parents who display divergent patterns of development for all

five parenting dimensions. We did not expect to find any differences between mothers and fathers regarding the developmental patterns of their parenting dimensions. As parenting dimensions are interrelated within the parent and between mothers and fathers, it was anticipated that changes in one parenting dimension would be accompanied by changes in other parenting dimensions.

3.3 Method

3.3.1 Participants and Procedure

Data for the present study were collected as part of a broader longitudinal project concerning externalizing problems in children and family development. A total of 108 mothers and fathers provided complete data at 17, 23 and 29 months. Mothers and fathers in this study were all from two-parent families and were primarily Dutch (95.4%) and college educated (63.9% of the mothers and 76.7% of the fathers having a college degree or more). Based on the education and occupation of both parents, the families were predominantly classified as middle class. In the first wave, the target children (all boys) were 17 months of age ($M = 16.9$, $SD = .57$), the age of the mothers ranged from 22 to 44 years ($M = 32.8$ years, $SD = 3.98$), and the age of fathers from 22 to 48 years ($M = 34.7$ years, $SD = 4.72$). For 57% of the families, the target child was the first-born child, and the average number of children in the participating families was 1.69 ($SD = .91$) at T1 and 1.92 ($SD = .90$) at T3.

The recruitment of these families was based on the records of infant welfare clinics in three cities situated in the central region of the Netherlands. A recruitment letter explaining the goals of the project was sent to 192 families and followed up with a telephone call. There was a financial incentive of € 50,- to participate in the study. Of 192 families, 117 families volunteered. Lack of time was the most prevalent reason for refusing to participate. Three self-report inventories were administered by mail to all participants when the children were 17, 23 and 29 months of age. At T1, within 2 weeks the questionnaires were collected during home visits. At T2 and T3, parents were asked to return the completed questionnaires by mail within 2 weeks. Only two families dropped out, because of relocation. In seven families, parents lived separately. These families were excluded from the current study.

3.3.2 Instrument

We used 11 scales from existing valid and reliable instruments that represent the five parenting dimensions. All scales that were originally produced in English, and for which no standard Dutch translation was available, were translated by means of a double translation procedure. Because the children in this study are 17 to 29 months of age, several items were not age-appropriate and had to be revised or left out. In a previous study including the same sample when the children were 17 months old, this five-fold classification of parenting dimensions was evaluated and confirmed by a confirmatory factor analyses. The five parenting dimensions had satisfactory internal consistency and good concurrent validity (Verhoeven, Junger, Van Aken, Deković, & Van Aken, 2007).

Support. Two scales represented the parenting dimension support. The first scale, responsiveness ($N = 4$ items), reflects the degree to which parents adequately and responsively react to the needs, signals and state of the child (Gerris et al., 1993). A sample item is “I know very well what my child feels or needs”. Parents rated the frequency of their parenting behavior on a 5-point scale ranging from 1 = *never* to 5 = *always*. The second scale, positive interactions ($N = 5$ items), measures the degree to which a parent is involved in positive interactions with the child (Strayhorn & Weidman, 1988). The frequency of positive parent-child interactions was measured on a 5-point scale (e.g., “How often do you and your child laugh together?”), ranging from 1 = *never* to 5 = *many times each day*. Cronbach’s alphas of these two parenting scales were .71, .61, and .57 for maternal responsiveness and .79, .74, and .72 for maternal positive interactions. Cronbach’s alphas for paternal responsiveness were .61, .59, and .68, and for paternal positive interactions they were .87, .82, and .80. The internal reliability of this parenting dimension across the three measurement waves was .78, .65, and .63 for mothers, and .80, .79, and .80 for fathers.

Lack of structure. Three scales that assess the degree to which parents provide a structured environment for their child were used to represent the dimension of structure. The first two scales are from the shortened version of the Parenting Scale (Irvine, Biglan, Smolkowski, & Ary, 1999). The first scale, laxness ($N = 6$ items), describes a parent who is permissive and inconsistent when providing discipline. The second scale, overreaction ($N = 4$ items), measures the parental

tendency to react to a child's misbehavior in an unstructured, exaggerated manner. For both laxness and overreaction, the items present a specific parental situation followed by two options that act as opposite anchor points for a 7-point scale. A high score indicates that parents are, respectively, lax or overreactive in their parenting. A sample item for laxness is "If my child gets upset when I say 'no', I stick to what I said -or the opposite- I back down and give in to my child." A sample item for overreaction is "When my child misbehaves, I respond without getting upset -or the opposite- I get so frustrated that my child can see I'm upset". The third scale, inconsistency, was assessed by five items from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996) that measure parental inconsistency in applying discipline. Parents rated themselves on a 5-point Likert scale, ranging from 1 = *never* to 5 = *always*. A sample item is "You threaten to punish your child and then do not actually punish him".

Cronbach's alphas of these three parenting scales were .73, .79, .80 and for maternal laxness, .61, .67, .71 and for maternal overreaction, .60, .36, and .42 for maternal inconsistency, .73, .75, and .80 for paternal laxness, .60, .67, and .72 for paternal overreaction, and .59, .58, and .68 for paternal inconsistency. The internal reliability of this parenting dimension across the three measurement waves was .81, .78, and .82 for mothers, and .78, .82, and .86 for fathers.

Positive discipline. Two indicators of positive discipline were assessed. Parental reinforcement of good behavior was measured by 6 items derived from the Alabama Parenting Questionnaire (Shelton et al., 1996). Parents had to indicate how often they praised their child's good behavior (i.e., "You praise your child when he behaves well"). The second indicator, induction, was measured by four items (Gerris et al., 1993). Parents reported how often they point out the consequences of the child's misbehavior. A sample item is "When my child does not listen to me, I explain to him that it annoys me". Both scales are measured on a 5-point scale, ranging from 1 = *never* to 5 = *always*. Cronbachs' alphas of these two parenting scales were .71, .74, and .76 for maternal reinforcement of good behavior, .81, .76, and .80 for maternal induction, .60, .68, and .78 for paternal reinforcement of good behavior, and .77, .76 and .71 for paternal induction. The internal reliability of this parenting dimension across the three measurement waves was .75, .74, and .75 for mothers, and .75, .77, .75 for fathers.

Psychological control. To assess psychological control two scales were used. Four items measured withdrawal of love (Gerris et al., 1993). Parents reported how often they used withdrawal of attention and/or affection as a disciplinary technique (e.g. “When my child misbehaves, I don’t listen to what he says”) The second scale, verbal punishment, was measured by five items derived from the Discipline Scale of the Parent Behavior Checklist (Fox, 1994), and assessed the parent’s tendency to raise their voice as a response to their child’s misbehavior (e.g., “I yell at my child for being too noisy at home”). Both scales are measured on a 5-point scale (1 = *never* to 5 = *always*). Cronbach’s alphas of these two parenting scales were .64, .68, and .62 for maternal love withdrawal, .72, .76, and .77 for maternal verbal punishment, .67, .48, and .64 for paternal love withdrawal, and .78, .80, and .83 for paternal verbal punishment. The internal reliability of this parenting dimension across the three measurement waves was .70, .72, and .70 for mothers, and .73, .74, and .80 for fathers.

Physical punishment. Two scales assessed parental use of physical punishment. Five items were drawn from the Discipline Scale of the Parental Behavior Checklist (Fox, 1994), and three items from the Alabama Parenting Questionnaire (Shelton et al., 1996). The items measured the frequency with which parents use physical punishment as a way of disciplining their child. On a 5-point scale parents had to indicate how often they use spanking as a disciplinary technique, ranging from 1 = *never* to 5 = *always*. Sample items are “When my child has a temper tantrum, I spank him”, and “You spank your child with your hand when he has done something wrong”. Cronbach’s alphas of these two parenting scales were .48, .62, and .57 for maternal corporal punishment, .59, .64, and .69 for maternal physical punishment, .54, .59, and .60 for paternal corporal punishment, and .65, .69, and .69 for paternal physical punishment. The internal reliability of this parenting dimension across the three measurement waves was .75, .80, and .81 for mothers, and .78, .80, and .80 for fathers.

3.3.3 Analytic Strategy

Structural equation modeling (Jöreskog & Sörbom, 2003) with latent variables was employed to investigate factorial equivalence, mean-level stability and rank-order stability. Each of the five parenting dimensions was investigated separately because of the relatively small sample size. As mothers and fathers come from the

same families, and as a consequence are dependent, models were construed in which maternal and paternal dimensions of parenting were assessed simultaneously and allowed to correlate. In Figure 3.1 the model for the dimension Support is depicted. Similar models were tested for the other dimensions of parenting.

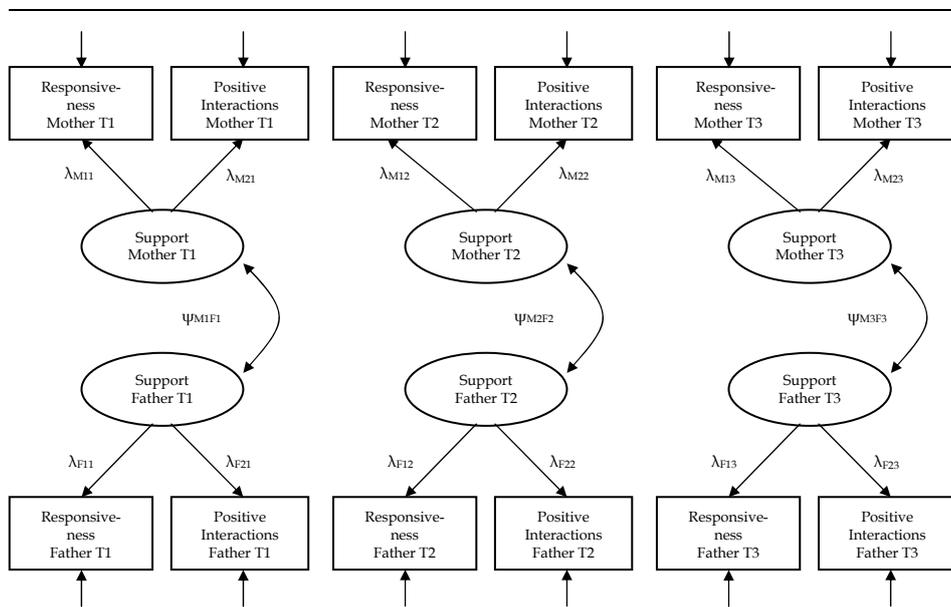


Figure 3.1 Latent Means Model for Maternal and Paternal Support.

Note. Correlations among measurement errors and the correlations between all 6 parenting dimensions are not illustrated to decrease the complexity of the figure.

A sequence of nested models ranged from an unconstrained model with the parameters freely estimated across time and across mothers and fathers, to more parsimoniously nested models that included different levels of equality constraints in order to examine factorial equivalence. Latent constructs were scaled by fixing the best indicator for each construct to 1.00 in the pattern matrix (LY). The same item was used to scale each latent construct across time and for

both mothers and fathers. These latent constructs were allowed to correlate with each other. The measurement errors of the same scales at different time points were allowed to correlate with each other if this led to significantly improved overall fit (Cole & Maxwell, 2003).

Factorial Stability. Four hypotheses regarding factorial equivalence were tested. First, by modeling a similar factor structure across time and across mothers and fathers, the hypothesis of configurable equivalence was tested. In the second model, the factor loadings were constrained to be equal across time and across mothers and fathers to test the hypothesis of weak factorial equivalence. In the third model, by constraining factor loadings and factor intercepts to be equal, the hypothesis of strong factorial equivalence was tested. Finally, in the fourth model, by constraining factor loadings, factor intercepts and residual variances of the indicators to be equal, the hypothesis of strict factorial equivalence was tested. The tests of these four hypotheses consisted of a comparison of the nested models, using the difference in model chi-square (Dayton, 1998). Because of the large number of parameters estimated in the models, a chi-square difference that was significant beyond the 0.01% level of confidence was regarded as a significant decrease in model fit.

Mean-level and rank-order stability. Mean-level stability and rank-order stability both refer to the latent construct level. Therefore, the most parsimonious model (i.e. the model with the strictest level of factorial equivalence) that does not differ significantly from the unrestricted model is examined by studying rank-order and mean-level stability. Mean-level stability was tested as a repeated measure factor model. By fixing one indicator intercept to zero, latent means are assessed in the pattern matrix (AL). To examine changes in the parenting dimensions across time, the latent means were constrained to be equal at different time points. Additionally, latent means were constrained to be equal for mothers and fathers to investigate differences between parents. Deterioration of the models' fit indicates that the restrictions are not tenable and that the latent means significantly differ across time, or across mothers and fathers. To assess rank-order stability, autoregressive paths from T1 to T2 and from T2 to T3 were estimated in the model. These autoregressive paths were constrained to be equal across time to evaluate differences in stability across the three measurement

waves. In addition, autoregressive paths were constrained to be equal across mothers and fathers to investigate whether mothers and fathers display similar levels of stability. Deterioration of the models' fit indicates that the restrictions are not tenable and that the autoregressive paths are significantly different across time, or across mothers and fathers.

Individual stability. Individual-level stability was assessed by means of the Reliability Change Index (Jacobson & Truax, 1991) to indicate whether there were reliable individual changes in parenting. Jacobson and Truax's (1991) method measures change by subtracting a pre-test score from a post-test score. The number is then divided by the standard error of difference (Sdiff) between the two test scores. The Sdiff is derived from the standard error of measurement (SE) using the following formula: $Sdiff = \sqrt{2(SE)^2}$. The result estimates the expected spread of the distribution of change scores if no actual change occurred. RCI scores smaller than -1.96 or larger than 1.96 are unlikely to occur without true change and are thus considered reliable.

3.4 Results

3.4.1 Factorial Equivalence

Model fit indices of the models that tested the four hypotheses of factorial equivalence are shown in Table 3.1. For each of the five parental dimensions, all factor loadings were significant, $p < .05$. The generally acceptable fit of the constrained models and non-significant differences between the nested models (Table 3.1) show that there is strict factorial equivalence across time and between mothers and fathers for lack of structure, positive discipline, psychological control, and physical punishment. The only exception was the model in which the factorial equivalence of support was tested. The significant chi-square difference revealed that the hypothesis of strong factorial equivalence was not tenable. By running the constrained model again and removing constraints of the intercepts one at a time, only the intercept of paternal support at T1 appeared significantly different from the other intercepts. Despite this, the strict factorial model of support showed acceptable fit, $\chi^2(47) = 82.43$, RMSEA = .09, NNFI = .91, CFI = .94. In addition, some researchers state that the requirements of strict factorial equivalence can be relaxed and that partial measurement equivalence (i.e., a

model in which some of the requirements of strict equivalence have been relaxed) is a sufficient requirement (Meredith & Horn, 2001). Following this line of thinking, it can be concluded that the parenting dimension of support was invariant across time and gender. To summarize, the five childrearing constructs have the same meaning for mothers and fathers, and this meaning is invariant across time. Thus, cross-gender and longitudinal comparisons can be made.

Table 3.1 Test of Time and Gender Equivalence of Parenting

	Fit of Model					$\Delta\chi^2$	Δdf	p
	χ^2	df	RMSEA	NNFI	CFI			
1. Support								
Configural Equivalence	37.80	27	.06	.95	.98	8.68	5	>.01
Weak Factorial Equivalence	46.48	32	.07	.95	.98	20.65	5	<.01
Strong Factorial Equivalence	67.13	37	.09	.90	.95	15.30	10	>.01
Strict Factorial Equivalence	82.43	47	.09	.91	.94			
2. Lack of Structure								
Configural Equivalence	114.86	105	.03	.99	.99	5.96	10	>.01
Weak Factorial Equivalence	120.82	115	.02	.99	.99	20.07	10	>.01
Strong Factorial Equivalence	140.89	125	.04	.99	.99	13.29	15	>.01
Strict Factorial Equivalence	154.18	140	.03	.98	.99			
3. Positive Discipline								
Configural Equivalence	31.15	31	.01	.99	1.00	9.49	5	>.01
Weak Factorial Equivalence	40.64	36	.04	.97	.98	14.20	5	>.01
Strong Factorial Equivalence	54.84	41	.06	.93	.95	6.46	10	>.01
Strict Factorial Equivalence	61.30	51	.05	.94	.96			
4. Psychological Control								
Configural Equivalence	29.22	29	.01	.99	.99	4.48	5	>.01
Weak Factorial Equivalence	33.70	34	.00	.98	.99	11.87	5	>.01
Strong Factorial Equivalence	45.57	39	.04	.95	.97	16.39	10	>.01
Strict Factorial Equivalence	61.96	49	.05	.95	.97			
5. Physical Punishment								
Configural Equivalence	48.13	31	.07	.97	.99	6.24	5	>.01
Weak Factorial Equivalence	54.37	36	.07	.98	.99	7.88	5	>.01
Strong Factorial Equivalence	62.25	41	.07	.98	.99	14.16	10	>.01
Strict Factorial Equivalence	76.41	51	.07	.98	.98	8.68	5	>.01

3.4.2 Mean-Level Stability

As can be seen in Table 3.2, the mean-levels of positive discipline significantly increased from T1 to T3 for both parents. The levels of maternal and paternal psychological control increased from T1 to T2, but were stable from T2 to T3. However, it should be note that these changes are relatively small, as can be seen in Figure 3.2.a and 3.2.b. Maternal and paternal support, lack of structure and physical punishment were stable across all three measurement waves. Maternal and paternal support, lack of structure, and physical punishment were stable across all three measurement waves.

The only differences found between mothers and fathers were for the mean-levels of support and positive discipline (Table 3.2). Fathers reported less support than mothers at all three assessments. At T2, mothers reported less positive discipline than fathers. However, this difference in level of positive discipline disappeared at T3. The patterns of change in mean-levels were similar for mothers and fathers.

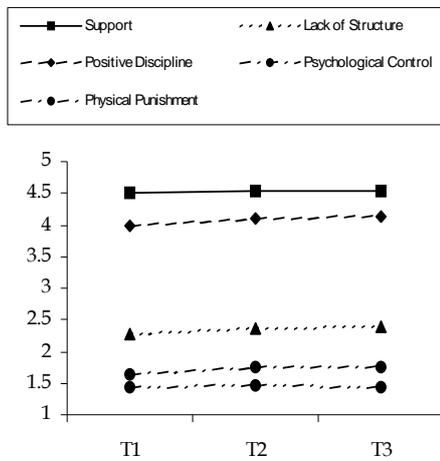


Figure 3.2.a Mean-level Stability of Maternal Parenting Dimensions.

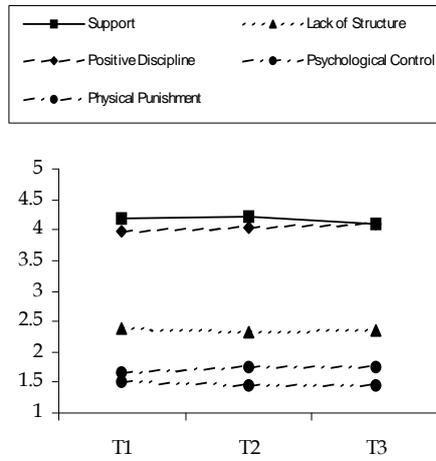


Figure 3.2.b Mean-level Stability of Paternal Parenting Dimensions.

Table 3.2 Mean-Level Stability in Means (and Standard Errors) of the Latent Constructs of Parenting

	Maternal Behavior			Paternal Behavior		
	T1	T2	T3	T1	T2	T3
Support	4.52 (.05)	4.54 (.04)	4.53 (.04)	4.20 ^c (.06)	4.22 ^c (.06)	4.11 ^c (.06)
Lack of Structure	2.27 (.06)	2.35 (.06)	2.38 (.06)	2.39 (.06)	2.33 (.06)	2.35 (.07)
Positive Discipline	3.99 (.03)	4.10 ^a (.03)	4.14 ^b (.03)	3.97 (.03)	4.04 ^a (.03)	4.09 ^b (.03)
Psychological Control	1.65 (.04)	1.74 ^a (.03)	1.75 ^a (.03)	1.66 (.04)	1.75 ^a (.04)	1.76 ^a (.04)
Physical Punishment	1.44 (.04)	1.47 (.05)	1.43 (.04)	1.50 (.04)	1.46 (.04)	1.44 (.04)

Note. Results of the unconstrained models are presented.

^a= different from mean-level at T1 within same gender; ^b= different from T2 within same gender;

^c= different from mean-level of maternal behavior at same point in time.

3.4.3 Rank-order Stability

In each of the five strict factorial models, autoregressive paths estimated the stability of maternal and paternal behavior across the three measurement waves. The results are shown in Table 3.3. Autoregressive paths ranged from $\beta = .41$ to $\beta = 1.29$, all significant at the $p < .001$ level, indicating that there is high rank-order stability in both maternal and paternal behavior.

The rank-order stability of maternal positive discipline was significantly higher from T2 to T3 than from T1 to T2. For paternal psychological control, a significantly higher stability coefficient was found from T1 to T2 than from T2 to T3. For support, lack of structure, and physical punishment, the stability coefficients for both mothers and fathers were similar across time. Additional analyses, in which the autoregressive paths from T1 to T3 were estimated (the autoregressive paths from T1 to T2 and from T2 to T3 were constrained to zero), also showed relatively high levels of rank-order stability across this 1-year interval for support ($\beta_{\text{Mother}} = .76, p < .001$; $\beta_{\text{Father}} = .67, p < .001$), lack of structure ($\beta_{\text{Mother}} = .76, p < .001$; $\beta_{\text{Father}} = 1.00, p < .001$), positive discipline ($\beta_{\text{Mother}} = .37, p < .001$; $\beta_{\text{Father}} = .35, p < .001$), psychological control ($\beta_{\text{Mother}} = .88, p < .01$; $\beta_{\text{Father}} = .78, p < .001$), and physical punishment ($\beta_{\text{Mother}} = .86, p < .001$; $\beta_{\text{Father}} = .83, p < .001$).

Table 3.3 Rank-order Stability of Parenting from 17 Months to 29 Months

	Mother		Father	
	T1- T2	T2- T3	T1- T2	T2- T3
Support	.76	1.02	.84	.82
Lack of Structure	.76	.94	.98	1.00
Positive Discipline	.41	.89 ^a	.73 ^c	.47 ^c
Psychological Control	1.29	.87	1.27	.67 ^a
Physical Punishment	.96	.82	.80	1.00

Note. Betas of the unconstrained models are presented. All betas are significant at the $p < .001$ level. ^a= different from rank-order stability from T1-T2 within same gender; ^c= different from rank-order stability of maternal behavior across same points in time.

Table 3.3 shows that only the levels of stability for positive discipline differed between mothers and fathers. Fathers showed a significantly higher level of rank-order stability from T1 to T2 than mothers during this period. In contrast, maternal rank-order stability was higher than that of fathers from T2 to T3. For support, lack of structure, and physical punishment, no differences in rank-order stability according to gender were found. Fathers displayed a significantly higher level of stability in lack of structure than did mothers ($\beta = 1.00$ versus $\beta = .76$) from T1 to T3. For support, positive discipline, psychological control, and physical punishment, equal levels of rank-order stability from T1 to T3 were found for both parents.

3.4.4 Individual level stability

To indicate whether there are reliable individual changes in parenting, the Reliable Change Index (Jacobson & Truax, 1991) was calculated for each parent from T1 to T3. The percentages of reliable increases and decreases are presented in Table 3.4. A chi-square test was conducted to test whether the distribution of individuals who increased, decreased or were stable in their parenting differed significantly from the random-change pattern.

Table 3.4 Individual-Level Change from T1 to T3; Percentages of Reliable Changers on Parenting

	Mother				Father			
	I	S	D	χ^2	I	S	D	χ^2
Support	1.9	97.2	-	.18	2.8	91.6	5.6	4.30
Lack of Structure	6.5	93.5	-	7.02**	1.9	98.1	-	.16
Positive Discipline	10.2	88.9	0.9	27.98***	6.5	92.6	0.9	7.98*
Psychological Control	13.9	85.2	0.9	58.20***	12.1	86.0	1.9	40.94***
Physical Punishment	6.5	89.8	3.7	7.78*	0.9	90.7	8.3	15.80***

Note. I = Increase, S = Stable, D = Decrease. For all chi-square tests, N ranged from 106 to 108; *df* ranged from 1 to 2. * $p < .05$; ** $p < .01$; *** $p < .001$

The majority of mothers (85.2%- 97.2%) and fathers (86%-98.1%) showed no changes in parenting during this 1-year period (Table 3.4). However, the chi-square statistics showed that the distribution of parents who increased, who were stable and who decreased in their behavior differed significantly from the random-change pattern for four dimensions of maternal and three dimensions of paternal behavior. For mothers, there were significantly more increases in lack of structure, positive discipline, psychological control, and physical punishment than would be expected from the random-change pattern. Fathers followed a similar pattern (more increases) for positive discipline and psychological control. However, there were more decreases than increases in paternal physical punishment. Chi-square statistics showed that only the distributions of changes in maternal and paternal support, $\chi^2(2) = 6.44, p < .05$, and physical punishment, $\chi^2(2) = 6.43, p < .05$, were significantly different. It seems that more fathers than mothers reported a decrease in support. For physical punishment, more mothers increased, whereas more fathers decreased.

3.4.5 Associations among Changes in Parenting Dimensions within Parents

Table 3.5 shows correlations among individual RCI scores. For both mothers and fathers, changes in support were positively correlated with changes in positive discipline, $r = .25, p < .01$; $r = .25, p < .01$, indicating that when parental support increased or decreased, the use of positive discipline was likely to change in the same direction. In addition, changes in lack of structure positively correlated with changes in psychological control in both mothers, $r = .30, p < .01$, and fathers, $r = .24, p < .05$. Thus, parents who report an increase or decrease in lack of structure are also more likely to change in their level of psychological control in similar direction. In addition, a significant correlation between changes in maternal support and maternal lack of structure was found, $r = -.26, p < .01$, which indicates that mothers who show an increase (or decrease) in support are more likely to change in terms of lack of structure in the opposite direction.

Parenting during Toddlerhood

Table 3.5 Correlations of Inter and Intra-individual Changes From T1 to T3 between Parenting Dimensions

	Maternal Parenting					Paternal Parenting			
	1.	2.	3.	4.	5.	1.	2.	3.	4.
Maternal Parenting									
1. Support									
2. Lack of Structure	-.26**								
3. Positive Discipline	.25**	-.12							
4. Psychological Control	-.18	.30**	.07						
5. Physical Punishment	.05	.07	.10	.10					
Paternal Parenting									
1. Support	.26**								
2. Lack of Structure	-.02	.21*				-.06			
3. Positive Discipline	.07	-.02	.08			.25**	.06		
4. Psychological Control	-.02	.27**	.00	.06		-.17	.24*	.08	
5. Physical Punishment	.03	.06	.01	.03	.31*	.14	.14	.09	.16

* $p < .05$; ** $p < .01$; *** $p < .001$

3.4.6 Associations among Changes in Parenting Dimensions between Parents.

Changes in maternal support, lack of structure, and physical punishment were found related to changes in the same paternal behaviors. All correlations were positive, indicating that an increase or decrease in the behavior of one parent is related to a change in a similar direction of the other parent. Additionally, a significant correlation was found between the maternal RCI of lack of structure and the paternal RCI of psychological control, $r = .27$, $p < .01$. Thus, an increase (or decrease) in maternal lack of structure is likely to accompany an increase (or decrease) in paternal psychological control.

3.4.7 Similarity in Parenting within Couples

The intra-class correlations in Table 3.6 show that the self-reported parenting of mothers and fathers within the same family were moderately similar. To test whether inter-parent parenting becomes more similar across time, the intra-class correlations at different time points were compared using Fisher-Z tests. The

results showed no significant differences in the magnitude of associations across time. Thus, mothers and fathers within the same family did not become more similar in their self-reported parenting across the 12-months period.

Table 3.6 Similarities in Parenting Within Couples Across T1, T2, and T3

	Intra-class correlations		
	T1	T2	T3
Support	.27**	.19*	.11
Lack of Structure	.30**	.37***	.47***
Positive Discipline	.20*	.18*	.19*
Psychological Control	.21*	.26**	.22*
Physical Punishment	.37***	.48***	.50***

* $p < .05$; ** $p < .01$; *** $p < .001$

3.5 Discussion

The purpose of the current study was to broaden existing knowledge concerning the developmental patterns of parenting by examining various forms of stability in five dimensions of maternal and paternal behavior during a 1-year period. Results of four forms of stability (factorial equivalence, mean-level stability, rank-order stability, and individual-level stability) converged and indicated that parents who are rearing a toddler boy are stable in their self-reported parenting (support, structure, positive discipline, psychological control, and physical punishment) from 17 to 29 months.

It is important to bear in mind, of course, that the information on parental behaviors was obtained by self-reports and not through observations of parent-child interactions. Thus, one cannot draw conclusions regarding the stability of the actual parenting behaviors these parents displayed. Despite the weaknesses of self reports -like the bias towards socially desirable responses (O'Connor, 2002)- we had good reasons to use self-reported information on parenting. First, parents are in the unique position to report on a variety of behaviors across a wide range of situations, some of which are not readily amenable to direct observations. For

example, parenting behaviors that occur during sporadic adverse events, such as physical punishment and psychological control, are hard to capture using observational methodology. Second, self-reports can provide valuable and unique information regarding the parent's own subjective experiences. Additionally, a large body of research indicates that parental self reports are in fact of predictive validity for children's developmental outcomes, suggesting that parent's self perceptions play an active role in shaping their parenting behavior (Lagace-Seguin & d'Entremont, 2006; Papp, Cummings, & Goeke-Morey, 2005; Stormshak, Bierman, McMahon, & Lengua, 2000).

3.5.1 Different Forms of Stability

The four methods used to assess development provided evidence for stability rather than change. First, factorial equivalence over time showed that the content of the five self-reported parenting dimensions remained similar over time and that longitudinal comparisons are permitted (Cheung & Rensvold, 2002; Corwyn & Bradley, 2002). Second, the degree of mean-level stability was high: the mean-levels of the parenting dimensions showed only small changes. Third, the levels of rank-order stability were also relatively high during this period for all five parenting dimensions, indicating that parents rearing sons remain relatively stable in their self-reported parenting. Fourth, high levels of individual-level stability indicated that it was much more common for individual parents to report no significant changes in parenting: 85.2% to 98.1% of the parents reported stable levels of parenting. This suggests that the percentage of parents of boys who remain the same in their reported parenting is very large, and the probability that parents change a great deal during this 1-year period is small. However, this does not imply that there is no change in parenting at all. On each of the five parenting dimensions, a minority of parents did demonstrate some level of reliable change. Consistent with previous studies, this study indicates thus that self reported parenting of parents with a toddler boy is stable and developing at the same time (Dallaire & Weinraub, 2005; Holden & Miller, 1999; McNally, et al., 1991). Therefore, these findings support both the trait-like approach and the child-effect approach. The question whether parenting is develops over time is closely related to the issue of what determines or influences this behaviour (Mischel, 1977). According to Belsky's process model of parenting (Belsky, 1984), parenting is mainly influenced by parental characteristics. Characteristics of the child are

thought to contribute only moderately to parenting. As parental characteristics (i.e., personality and personal history) are stable features and the most important determinants of parenting, it is not surprising that generally high levels of stability in parenting were found. The changing child characteristics contribute only moderately to parenting, explaining the small changes in parenting.

3.5.2 Dimensions of Parenting

Holden and Miller (1999) theorized that some parenting constructs are more reflective of parental characteristics whereas others are more a function of the child. These latter parenting constructs are more likely to change over time, as they are more sensitive to the child's behavior. Results showed that there were only normative changes in the mean-levels of positive discipline and psychological control. During the 1-year period, both mothers and fathers reported a significant increase in these parenting dimensions. These increased levels of parental control might represent responses to developmental changes in their toddler son. As children start to display more misbehavior during the "terrible twos" (Keenan & Wakschlag, 2000; Nagin & Tremblay, 1999; Shaw, Gilliom, Ingoldsby, & Nagin, 2003), parents have to exert discipline more frequently. Similar high levels of stability were also found for parental support, structure, and physical punishment. These three dimensions seem to depend more on parental values, personalities and culture than on the developmental level of the child (Bornstein & Cheah, 2006; Holden & Miller, 1999; Luster, Rhoades, & Haas, 1989).

3.5.3 Maternal versus Paternal Behavior

The third aim of the present study was to compare the developmental patterns of self-reported mothering and fathering. By assessing factorial equivalence across gender, we found that the content of the five self-reported parenting dimensions were similar for mothers and fathers, thus permitting cross-gender comparisons of parenting behaviour (Cheung & Rensvold, 2002; Corwyn & Bradley, 2002). Regarding the levels of parenting, the parents in our sample reported to display positive behaviors (i.e., support and positive discipline) more often than negative parenting behaviors (i.e., structure, psychological control and physical punishment). Mothers and fathers of boys reported similar levels of structure, positive discipline, psychological control and physical punishment, indicating that

boys experience comparable parenting from their mothers and fathers. However, mothers reported more support than fathers. This is consistent with the review of Lewis and Lamb (2003), who noted that mothers and fathers have similar parenting styles, but mothers are more sensitive than fathers.

With regard to changes in parenting, the developmental patterns of parenting were also shown to be comparable for mothers and fathers. Similar patterns of mean-level stability were demonstrated for mothering and fathering. Self-reports of support, structure and physical punishment were stable across time for both mothers and fathers. The use of positive discipline and psychological control increased in both parents. In addition, equal levels of rank-order stability were found for mothers and fathers. Though it seems that the distributions of parents' individual changes in support and physical punishment were slightly different for mothers and fathers, in general, the pattern of percentages of reliable changes in self-reported parenting did not differ between mothers and fathers of boys. Taken together, these findings show that there are identical developmental trajectories for maternal and paternal behavior, as was found two decades ago (Belsky, et al., 1984).

3.5.4 Interrelatedness of Changes in Parenting Dimensions

The five dimensions of parenting are interrelated within each parent, and changes in one dimension are likely to be accompanied by changes in other dimensions. Significant relations were found between the developmental patterns of the five parenting dimensions. Mothers of boys who reported an increase (or decrease) in support also displayed more (or less) positive discipline and became more (or less) structured in their parenting. In addition, an increase in maternal structure corresponded with an increase in maternal psychological control. Similar correlations were found for paternal behavior. Moreover in fathers of boys, an increase in the level of support was associated with an increase in positive discipline. Underlying parenting styles may cause this intrapersonal coherence of change across several parenting dimensions (Darling & Steinberg, 1993).

Changes in parenting were also interrelated between mothers and fathers of boys. If one parent reported changes in support, structure or physical punishment, it was likely that the other parent also changed in these behaviors in similar ways. This is in line with results of other studies that found that fathers influence maternal behavior, just as mothers influence paternal behavior (Lamb & Lewis,

2004). The first explanation is simply that mothers and fathers are rearing the same boy, who elicits similar behaviors of his parents. It is also possible that parents discuss their rearing techniques together and decide to adjust their parenting. This does not hold for all parenting behaviors, however, as results show that changes in maternal and paternal positive discipline and psychological control are unrelated. Changes (or stability) in these parenting behaviors might depend more on individual parent characteristics, such as personality and their own history of parenting, than on the partner's behavior. Moreover, although changes in some parenting dimensions are interrelated, mothers and fathers from the same family do not become more alike in their self-reported parenting.

3.5.5 Limitations and Conclusions

Although children are assumed to go through major transitions in their behavioral, cognitive, and communicative abilities during the period under investigation, results of the current study indicate that such development on the part of the child does not go together with changes in the self-reported behavior of parents who are rearing boys. However, as noted before, these results do not indicate that parents do not change in their actual behavior. As Holden and Miller (1999) found in their meta-analysis, observed measures of parental behaviors are more likely to develop than self-reported measures of parenting. Another reason for finding these relatively high levels of stability might be that we measured dimensions of parenting. Several researchers have mentioned that it is important to note the distinction between parenting practices and the underlying parenting dimensions (Darling & Steinberg, 1993; Holden & Miller, 1999). Parenting practices involve surface-level behaviors (for example kissing, hugging, and cuddling) that are thought to be more dependent on the child's developmental stage. Underlying parenting dimensions (in this example support), on the other hand, are constellations of these behaviors and are thought to demonstrate stability over time.

Furthermore, the short time frame used in the current study, with measurement waves only 6 months apart from each other, might have led to an overestimation of stability as well. In addition, the size of the sample is also a limitation. Although a sample size of at least 100 is considered sufficient for structural equation modelling, this is a minimum and the power of statistical tests may have been limited (Kline, 2005). The use of a relatively homogeneous sample

consisting of Dutch intact, middle-class families rearing a toddler boy limits the generalizability of findings of the current study. Future studies should address these issues by using other methods to assess parenting over a longer period in a more heterogeneous sample including parent-daughter relationships, single parent, stepparents and parents of other ethnicities and SES.

Notwithstanding these limitations, the present study added to existing knowledge on the dynamics of parenting. By studying self-reported parenting as a multifaceted construct and investigating different aspects of development, the current study provided a fuller picture of the developmental pattern of parenting of toddler boys. At the population level, the mean-levels of self-reported support, structure and physical punishment did not change and the rank-ordering of parents remained stable over time for all five parenting dimensions. However, individual-level stability showed that despite this stability at the population level, there are subgroups of individuals who report distinct and reliable patterns of change. It is important to examine both the determinants (why do some parents change and others not) and the consequences of these developmental patterns of parenting with regard to the child's developmental outcomes.

4 Parenting and Children's Externalizing Behavior: Bidirectionality during Toddlerhood*

4.1 Abstract

This study examined the bidirectional relationship between parenting and children's externalizing behaviors in a four-waves longitudinal study of toddlers. Participants were 108 intact two-parent families with their toddler son. When their son was 17, 23, 29, and 35 months of age, mothers and fathers reported about a broad range of parenting dimensions (support, lack of structure, positive discipline, psychological control, and physical punishment). In addition, mothers reported about their child's externalizing behaviors. Structural equation models showed that at 23, 29, and 35 months boy's externalizing behavior influenced their parents' support, lack of structure, psychological control and physical punishment. Mothering and fathering did not affect boy's externalizing behaviors. Additional analyses indicated that these child-effects were equally strong across time and across mothers and fathers. Implications of these findings are discussed.

4.2 Introduction

Theoretical models and empirical evidence posit a close relationship between parenting and children's externalizing behavior (Lengua, 2006; Maccoby, 2000; Prinzie, Onghena, & Hellinckx, 2006). During the past few decades, these associations between parenting and children's behavior are increasingly being viewed as bidirectional (Bell & Harper, 1977; Conger & Simons, 1997; Pettit & Lollis, 1997; Sameroff, 1975). However, empirical evidence for this bidirectionality between parenting and children's externalizing behavior is limited to school-aged children and adolescents, and, moreover, inconsistent. The current study investigated the bidirectional relation between parental behaviors and boy's externalizing behaviors during toddlerhood, using caregiver reported measures at

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four points in time from 17 to 35 months. A broad range of parenting dimensions for both mothers and fathers was investigated in order to examine (1) whether parenting is bidirectionally related to children's externalizing behaviors, (2) whether the strength of these parent-child associations changes over time, and (3) whether these associations are different for mothers and fathers.

A long history of research on parent-child relationships has been premised on the assumption that parents socialize their children to a greater extent than children socialize their parents (Pettit & Lollis, 1997). Nowadays, theories of socialization and child development emphasize the contribution of both the child and the parent via bidirectional processes (Bell, 1977; Bell & Harper, 1977; Conger & Simons, 1997; Pettit & Lollis, 1997; Sameroff, 1975). The existence of bidirectional relationships between parenting and children's externalizing behaviors is reported in some studies that focused on school-aged children and adolescents. For school-aged children it was found that children's attention problems led to higher levels of parental control, which, in turn, led to higher levels of children's attention problems (Gadeyne, Ghesquiere, & Onghena, 2004). Vuchinich, Banks, and Patterson (1992) found that preadolescent antisocial behavior in boys had a negative effect on parental positive discipline (including behaviors such as reasoning, limit setting, being consistent over time). At the same time, parental positive discipline had a tempering effect on these boy's antisocial behaviors. For adolescents, a bidirectional relationship between externalizing behavior and parent-child attachment was found (Buist, Deković, Meeus, & Van Aken, 2004). Attachment predicted lower levels of children's externalizing behaviors. In turn, adolescent's externalizing behavior had a negative effect on parent-child attachment.

In contrast to these aforementioned studies, Reitz, Deković, Meijer, and Engels (2006) did not find support for a bidirectional relationship between adolescent externalizing behavior and parenting (including responsiveness, quality of parent-child relationship, and parental knowledge). Although externalizing behavior of 13 year-olds had a negative effect on parenting one year later, parenting had no long-term effect on children's externalizing behavior. Likewise, Fite, Colder, Lochman, and Wells (2006) found that from 4th to 8th grade, boys' externalizing behavior led to poor parental monitoring and inconsistent discipline, but these parental behaviors did not affect the child's externalizing behavior.

One of the issues that need to be considered when examining bidirectionality is the time frame in which parenting and child behavior are expected to influence each other. The previously mentioned studies on the bidirectional relationship between parenting and children's externalizing behaviors investigated cross-lagged (long-term) reciprocal effects, suggesting that parenting (or child behavior) will have an effect on child behavior (or parenting) at a later time point (in these aforementioned studies 1 or 2 years later). However, it can be expected that bidirectional effects between parenting and children's externalizing behavior are the results of mechanisms that take place within a short period of time, and that bidirectional influences are more visible within a single measurement (cross-sectional/short-term effects) rather than across waves. For example, in a study on the bidirectional relations between parenting and children's externalizing behaviors at school age, Fite and colleagues (2006) found parent-child associations within, but not across measurement waves. Similarly, Vuchinich, Banks, and Patterson (1992) established short-term (within the same measurement wave), but not long-term (across measurement-waves) bidirectional effects between parenting and preadolescent antisocial behavior.

Theories are ambiguous regarding the time frame in which effects between parenting and children's externalizing behavior occur. Moreover, there is empirical evidence for both short-term (Fite et al., 2006; Vuchinich et al., 1992) and long-term effects (Buist et al., 2004; Gadeyne et al., 2004; Reitz et al., 2006). Therefore, we decided to examine bidirectional effects both within and across 6-months periods.

Another important issue concerns the developmental changes of bidirectionality (Dunn, 1997; Fite et al., 2006). As both parents and children develop throughout time (Dallaire & Weinraub, 2005; Gilliom & Shaw, 2004), it can be expected that the bidirectional relationship between children and their parents will change as well. In a meta-analysis that examined the concurrent links between parenting and children's externalizing behavior in different age groups, stronger parent-child associations links were found for older (schoolage children and adolescents) than for younger children (Rothbaum & Weisz, 1994). Rothbaum and Weisz suggested that this finding may be the result of a cumulative bidirectional model of the parent-child relationship in which parenting and children's behavior are continually influencing one another and, over time, these behaviors become increasingly interwoven.

The only study we know of that examined changes in bidirectional associations between child behavior and parenting over time, however, did not find an increase in the effects between parenting and child behavior across a period of 5 years (4th grade- 8th grade) (Fite et al., 2006). They found that boy's externalizing behavior led to higher levels of inconsistent discipline, but the strength of this effect did not change over time. Another result of the same study was that boy's externalizing behavior elicited to higher levels of parental monitoring at 6th and 7th grade, but not at 5th and 8th grade (Fite et al., 2006), indicating that the associations between specific parenting behaviors and children's externalizing behavior are different during different developmental periods (Darling & Steinberg, 1993).

Building on existing theoretical models and empirical evidence, the current study investigated the bidirectional relationship between parenting and children's externalizing behaviors during toddlerhood, across four points in time (17, 23, 29, and 35 months). While reviewing the literature concerning the bidirectional relationship between parenting and children's externalizing behavior, we were not able to find a study addressing this issue in early childhood. This is a notable omission, given the fact that recent studies show that externalizing behaviors originate in toddlerhood (Keenan & Wakschlag, 2000), and this period might be the set-off point for this bidirectional relationship between these child behaviors and parenting. Bidirectional relations between parenting and toddlers' externalizing behavior were tested both within and across measurement waves. The inclusion of multiple measurement waves gave us the opportunity to also examine the stability or change in the strength of these associations over time.

The present study focused on five broad parenting dimensions: support, lack of structure, positive discipline, psychological control and physical punishment. Support includes parental involvement in positive parent-child interactions and the extent to which parents are sensitive and responsive to the child's signals and needs. Lack of Structure concerns the parents' tendency to provide an unstructured environment by being inconsistent and unpredictable. Positive discipline refers to the extent to which parents praise the child's good behavior and provide explanations of why specific behavior is unwanted. Psychological control represents the extent to which parents raise their voice and withdraw affection or attention as a response to disruptive behavior. Physical punishment refers to the parents' tendency to spank the child when he or she misbehaves.

Former studies found that low levels of support, structure and positive discipline and high levels of psychological control and physical punishment are related to externalizing behaviors in children (Brook, Zheng, Whiteman, & Brook, 2001; Feldman & Klein, 2003; O'Leary, Smith Slep, & Reid, 1999; Stormshak, Bierman, McMahon, & Lengua, 2000). We investigated the associations between these five parenting dimensions and children's externalizing behaviors for both mothers and fathers.

Despite the growing acknowledgement that fathers play an important role in children's development, research that involves both mother-child and father-child relationships is still scarce. The few studies that did compare these relationships have led to inconsistent results. Some studies found that mothers and fathers affect their child in similar ways and to similar degrees (Caron, Weiss, Harris, & Catron, 2006; Davidov & Grusec, 2006), whereas others stated that maternal behavior is of greater influence than paternal behavior (Aunola & Nurmi, 2005; Brook et al., 2001) or even that paternal behavior affects the child's behavior in the opposite direction to maternal behavior (Casas et al., 2006). To illustrate, Davidov and Grusec (Davidov & Grusec, 2006) found similar effects of parental support on child's externalizing behavior for mothers and fathers, whereas other studies reported that only maternal support affected children's externalizing problems (Aunola & Nurmi, 2005; Belsky, Hsieh, & Crnic, 1998; Brook et al., 2001). Brook and colleagues (2001) found that maternal, but not paternal psychological control was positively related to more aggression in toddlers. A study on aggression in preschool children, however, showed a positive relationship between maternal psychological control and physical aggression in boys, whereas in contrast paternal psychological control was negatively associated with this aggressive behavior (Casas et al., 2006).

To summarize, the present longitudinal study tries to expand the existing knowledge on the bidirectional relationship between children's externalizing behavior and parenting by (a) exploring this relationship during an understudied period: toddlerhood, (b) examining this bidirectionality for a broad range of parenting dimensions, (c) studying the development of these bidirectional relations across time, and (d) comparing these bidirectional relations for mothers and fathers. Based on previous research, we postulated that children's externalizing behavior will evoke higher levels of psychological control and

physical punishment, lower levels of support and positive discipline and will lead to unstructured parenting. High levels of psychological control and physical punishment and a lack of structure, on their part, will lead to more externalizing behaviors within the child, as will lower levels of support and positive discipline. Because children are developing rapidly during early childhood, the strength of these associations might change across the four measurement waves. We had no expectations regarding differences between mother-child and father-child relationships, given that empirical evidence regarding this topic is scarce and inconsistent. As there is reason to expect that parenting and child behavior are influencing each other both within and across measurement waves, we used path analysis to examine both cross-sectional (short-term) effects and cross-lagged (long-term) effects, based on the analytical strategies of Fite and colleagues (2006), and Vuchinch and colleagues (1992).

4.3 Method

4.3.1 Participants

Participants were mothers and fathers of intact families with a toddler son. Only boys were included in this project as externalizing behaviors are more common among boys than girls (Alink et al., 2006; Webster-Stratton, 1996). A total of 108 mothers and fathers provided complete data at 17, 23, 29, and 35 months. Mothers and fathers in this study were primarily Dutch (95.4%) and college educated (63.9% of the mothers and 76.7% of the fathers having a college degree or more). In the first wave the target children were 17 months of age ($M = 16.9$, $SD = .6$). The age of the mothers ranged from 22 to 44 years ($M = 32.8$ years, $SD = 4.0$) and the age of fathers from 22 to 48 years ($M = 34.7$ years, $SD = 4.7$). For 57% of the families, the target child was the first-born child, and the average number of children in the participating families was 1.7 ($SD = .9$) at T1 and 2.02 ($SD = .90$) at T4.

4.3.2 Procedure

The recruitment of these families was based on the records of infant welfare clinics in three cities situated in the central region of the Netherlands. A recruitment letter explaining the goals of the project was sent to 192 families and

followed up with a telephone call. Of these 192 families, 117 families volunteered. Lack of time was the most prevalent reason for refusing to participate. Four self-report inventories were administered by mail to all subjects when the children were 17, 23 and 29 months of age. At T1 and T4, within two weeks the questionnaires were collected during home visits. At T2 and T3, parents were asked to return the completed questionnaires by mail within two weeks. Only two families dropped out, because of relocation. In seven families, parents lived separately. These families were excluded from the current study.

4.3.3 Instruments

Though the five parenting dimensions discussed in the introduction have been the focus of much research, there is no single instrument to assess all five dimensions in early childhood. Therefore, we used 11 scales from existing valid and reliable instruments that represent the five parenting dimensions. All scales that were originally produced in English, and for which no standard Dutch translation was available, were translated by means of a double translation procedure. Since the children in this study are 17 to 35 months of age, several items were not age-appropriate and had to be revised or left out. In a previous study including the same sample when the children were 17 months old, this five-fold classification of parenting dimensions was evaluated and confirmed by a confirmatory factor analyses. The five parenting dimensions had satisfactory internal consistency and good concurrent validity (Verhoeven, Junger, Van Aken, Deković, & Van Aken, 2007).

Parenting

Support. Two scales represented parental support. The first scale, responsiveness ($N = 4$ items), reflects the degree to which parents adequately and responsively react to the needs, signals and state of the child (Gerris et al., 1993). A sample item is “When my child is upset, I am able to comfort him”. Parents rated the frequency of their parenting behavior on a 5-point scale ranging from 1 = *never* to 5 = *always*. The second scale, positive interactions ($N = 5$ items), measures parental involvement in positive interactions with the child (Strayhorn & Weidman, 1988). Positive parent-child interactions were measured on a 5-point scale (e.g. “How often do you do something special with your child that he

enjoys?”), ranging from 1 = *never* to 5 = *many times each day*. The internal reliabilities across the four measurement waves ranged from .65 to .77 ($M = .70$) for mothers, and from .79 to .81 ($M = .80$) for fathers.

Lack of structure. Three scales represent the dimension of lack of structure. The first two scales are from the shortened version of the Parenting Scale (Irvine, Biglan, Smolkowski, & Ary, 1999). The first scale, laxness ($N = 6$ items), describes permissive and inconsistent discipline. The second scale, overreaction ($N = 4$ items), measures the tendency to react to a child's misbehavior in an unstructured, exaggerated manner. For both laxness and overreaction, the items present a specific parental situation followed by two options that act as opposite anchor points for a 7-point scale. A high score indicates that parents are respectively lax or overreactive in their parenting. A sample item for laxness is “If my child gets upset when I say ‘no’, I stick to what I said -or the opposite- I back down and give in to my child”. A sample item for overreaction is “When my child misbehaves, I handle without getting upset -or the opposite- I get so frustrated that my child can see I'm upset”. The third scale, inconsistency, was assessed by five items from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996) that measure inconsistency in applying discipline. Parents rated themselves on a 5-point scale, ranging from 1 = *never* to 5 = *always*. A sample item is “You threaten to punish your child and then do not actually punish him.” The internal reliabilities across the four measurement waves ranged from .80 to .83 ($M = .82$) for mothers, and from .78 to .88 ($M = .83$) for fathers.

Positive discipline. Two indicators assessed positive discipline. Parental reinforcement of good behavior was measured by 6 items derived from the Alabama Parenting Questionnaire (Shelton et al., 1996). Parents indicated how often they praised their child's good behavior (i.e. “You praise your child when he behaves well”). The second indicator, induction, was measured by four items (Gerris et al., 1993). Parents reported how often they point out the consequences of the child's misbehavior. A sample item is “When my child does not listen to me, I explain to him that it annoys me” Both scales are measured on a 5-point scale, ranging from 1 = *never* to 5 = *always*. The internal reliabilities across the four measurement waves ranged from .69 to .75 ($M = .73$) for mothers, and from .75 to .79 ($M = .77$) for fathers.

Psychological control. To assess psychological control two scales were used. Four items measured love withdrawal (Gerris et al., 1993). Parents reported how often they used withdrawal of attention and/or affection as a disciplinary technique (e.g. “When my child misbehaves, I stop talking to him until he pleases me again”) The second scale, verbal punishment, was measured by five items derived from the Discipline Scale of the Parent Behavior Checklist (Fox, 1994), and assessed the parental tendency to raise their voice as a response to their child’s misbehavior (e.g. “I yell at my child for being too noisy at home”). Both scales are measured on a 5-point scale (1 = *never* to 5 = *always*). The internal reliabilities across the four measurement waves ranged from .71 to .75 ($M = .73$) for mothers, and from .72 to .80 ($M = .75$) for fathers.

Physical punishment. Two scales assessed parental use of physical punishment. Five items were drawn from the Discipline Scale of the Parental Behavior Checklist (Fox, 1994), and three items come from the Alabama Parenting Questionnaire (Shelton et al., 1996). The items measured the frequency with which parents use physical punishment as a way of disciplining their child. On a 5-point scale parents had to indicate how often they use spanking as a disciplinary technique, ranging from 1 = *never* to 5 = *always*. Sample items are “When my child has a temper tantrum, I spank him”, and “You spank your child with your hand when he has done something wrong” The internal reliabilities across the four measurement waves ranged from .75 to .82 ($M = .79$) for mothers, and from .77 to .80 ($M = .79$) for fathers.

Child Behavior

Externalizing behavior. The Child Behavior Checklist 1 ½ -5 (Achenbach & Rescorla, 2000) was used to measure the child’s externalizing behavior. The broad externalizing scale consisted of two subscales: attention problems (5 items) and aggressive behavior (19 items). Mothers responded on a 3-point scale - ranging from 0 = *never* to 2 = *often*- as to whether specific behaviors were indicative of their child’s behavior. Raw scores were used to indicate the child’s level of Externalizing Behavior. The internal reliability of this scale was .90

According to these maternal reports, approximately 19% scored above the borderline clinical range of externalizing behaviors across the four measurement

waves. A study by Koot (1993) described the prevalence of behavioral and emotional problems in a nationally representative sample of Dutch parents, and reported that 17.2 % of the 2-3 year-old boys scored above the borderline clinical range. Based on these results, the prevalence of externalizing behaviors found in the present study seems to be representative of the Dutch population.

4.3.4 Statistical Analyses

Bidirectional relations between parenting and children's externalizing behavior were examined by testing nonrecursive path models (Jöreskog & Sörbom, 2003), with covariance matrices as input (available on request for the first author). Separate models were evaluated for each of the five parenting dimensions, because of concerns about the large number of parameters being estimated when all parenting dimensions are included in the same model. Since mothers and fathers in the present study come from the same family -and as a result their behaviors are interrelated- the reciprocal relations between mothering and child behavior and between fathering and child behavior were examined simultaneously in the same model.

For each of the five parenting dimensions, two non-recursive path models were tested and reported separately in the result-section: The first model examined the short-term bidirectional effects, and second model tested the long-term bidirectional effects. In both models, stability paths ($T1 \rightarrow T2$, $T2 \rightarrow T3$, and $T3 \rightarrow T4$) were included. Additional stability-paths from $T1$ to $T3$ or $T4$ and from $T2$ to $T4$ were added only if doing so improved the model's fit, and did not change the stability and reciprocal paths. Correlations were estimated between maternal and paternal behavior within each measurement wave because of the interdependence between mothers and fathers. Additional stability paths and the correlations between mothering and fathering are not depicted in the Figures 4.1-4.4, in order to reduce the complexity of the figures.

Besides these stability paths and correlations among maternal and paternal behavior, the model that tested the short-term bidirectional effects included cross-sectional paths between mother and child, and between father and child at $T2$, $T3$, and $T4$. That is, mothering and fathering were allowed to affect child behavior within the same measurement wave. In turn, child behavior was allowed to influence parenting within the same measurement wave. At $T1$, parenting and child behavior were exogenous, meaning that no variables were predicting them

and therefore short-term reciprocal paths could not be estimated at this point in time. Thus, at T1 we estimated correlations between mothering and child behavior and fathering and child behavior instead of causal paths.

The model that tested long-term bidirectional effects included cross-lagged paths between mothering and child behavior and between fathering and child behavior from T1 to T2, from T2 to T3, and from T3 to T4. In this second model, correlations were estimated between mothering and child behavior and fathering and child behavior within similar measurement waves.

For both the short-term effect models and the long-term effect models we tested whether the bidirectional relationship between parenting and children's externalizing behaviors (1) changed over time, and (2) was different for mothers and fathers. First, a baseline model was identified in which all paths were free to vary across time and across maternal and paternal behavior. Then, for each sort of effect (child-effect on mother, child-effect on father, mother-effect on child, and father-effect on child) a model was run in which these effects were constrained to be equal across time. This constrained model was then compared to the baseline-model. If constraining paths to be equal across time did not lead to a deterioration of the model's fit, the paths coefficients are not significantly different across time, indicating that there was no development. This procedure was repeated four times: once for the child effects on mothering, once for the child-effects on fathering, once for the effects of mothering on child behavior, and once for the effects of fathering on child behavior. If constraints were tenable (i.e., did not lead to a decrement in the model's fit), these were maintained in the final path models.

A similar procedure was used to examine mother-father differences. Three constrained models were each compared with the baseline model: one model in which the child effects were constrained to be equal for mothers and fathers, one model in which the effects of parenting were constrained to be equal across mothers and fathers, and one model in which the correlations between the initial levels of parenting and the child's behavior were constrained to be equal across mothers and fathers. Constraints that were tenable were maintained in the final path models.

Table 4.1. Means, Standard Deviations and Differences Between Mothers and Fathers

	Mother		Father		t-value (paired)
	M	SD	M	SD	
<i>Wave 1</i>					
Externalizing Behavior	.62	.32			
Support	4.41	.35	4.14	.40	6.20***
Lack of Structure ¹	-.09	.79	.00	.78	-.93
Positive Discipline	3.81	.51	3.68	.51	2.14*
Psychological Control	1.50	.38	1.59	.44	-1.87
Physical Punishment	1.35	.39	1.42	.41	-1.42
<i>Wave 2</i>					
Externalizing Behavior	.61	.29			
Support	4.45	.28	4.19	.42	5.81***
Lack of Structure ¹	.04	.72	-.07	.80	1.32
Positive Discipline	4.15	.42	3.89	.47	4.64***
Psychological Control	1.70	.41	1.76	.45	-1.23
Physical Punishment	1.37	.40	1.38	.40	-.40
<i>Wave 3</i>					
Externalizing Behavior	.63	.34			
Support	4.46	.28	4.12	.43	7.16***
Lack of Structure ¹	.05	.77	-.03	.87	.97
Positive Discipline	4.20	.41	3.98	.40	4.31***
Psychological Control	1.76	.42	1.82	.49	-1.06
Physical Punishment	1.35	.40	1.36	.41	-.24
<i>Wave 4</i>					
Externalizing Behavior	.64	.30			
Support	4.41	.32	4.16	.43	5.32***
Lack of Structure ¹	.06	.72	.01	.88	.65
Positive Discipline	4.26	.35	4.06	.42	3.76***
Psychological Control	1.87	.43	1.89	.49	.14
Physical Punishment	1.31	.37	1.37	.43	-1.32

Note. ¹ standardized scores, *** p<.001; ** p<.01; * p<.05

4.4 Results

4.4.1 Descriptive Statistics

Table 4.1 presents the means, minimum and maximum scores, standard deviations, and intercorrelations for the measures of externalizing behavior and parental behavior. Analysis of skewness (ranging from -.99 to 1.59) and kurtosis (ranging from -.80 to 2.71) indicated that the variables were normally distributed and that no transformations were necessary (Field, 2005). Paired t-test showed that mothers and fathers significantly differed from each other in their levels of support and positive discipline. At all four measurement times, mothers reported slightly higher levels of support than Fathers. With regard to positive discipline, at T2, T3 and T4 mothers reported to use these discipline-techniques more often than fathers did.

Repeated measure analyses indicated that the levels of maternal lack of structure, $F(100) = 3.40, p < .05$, maternal positive discipline, $F(100) = 24.93, p < .001$, and maternal psychological control, $F(98) = 30.96, p < .001$, increased significantly across time. In addition, levels of paternal positive discipline, $F(99) = 22.42, p < .001$, and paternal psychological control, $F(98) = 18.99, p < .001$, also increased significantly over time. Parents did not change in their levels of support and physical punishment. Likewise, the levels of children's externalizing behaviors did not significantly change over time.

Support. The model that tested the short-term bidirectional effects between parental support and children's externalizing behavior showed a good fit, $\chi^2(44) = 49.33, CFI = .99, NNFI = .99$, and $RMSEA = .04$ (Figure 4.1.). The correlations among the initial levels of support and children's externalizing behavior differed significantly between mothers and fathers ($\Delta \chi^2(1) = 5.14, p < .05$). A significantly, negative association was found between the initial levels of maternal, but not paternal, support and children's externalizing behavior. Cross-sectional paths between children's externalizing behavior and parental support were found at T2, T3 and T4. At all three measurement waves, children's externalizing behavior had a negative effect on both maternal and paternal support, above and beyond previous levels of support. These effects were equally strong across time ($\Delta \chi^2(2) = 1.06, p > .05$ for mothers, and $\Delta \chi^2(2) = 4.22, p >$

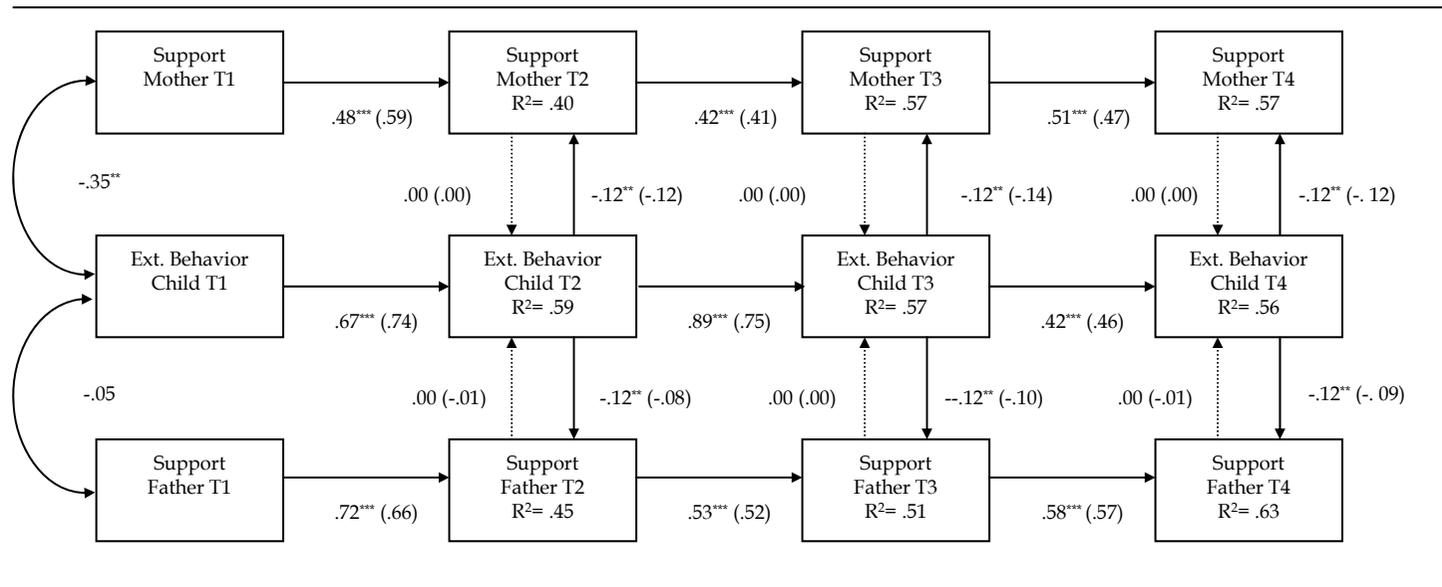


Figure 4.1. The Final Model for the Bidirectional Relationship between Parental Support and Children's Externalizing Behavior.

Note: Unstandardized beta's are reported outside parentheses and standardized beta's are reported inside parentheses; ** $p < .01$; *** $p < .001$.

.05 for fathers) and across mothers and fathers ($\Delta \chi^2 (3) = 0.24, p > .05$). Parental support did not significantly affect children's externalizing behavior.

The model that tested the long-term bidirectional effects between parental support and children's externalizing behavior showed that these longitudinal effects did not reach significance.

Lack of structure. The model that tested the short-term bidirectional effects for lack of structure is depicted in Figure 4.2, and showed an acceptable fit to the data, $\chi^2 (42) = 61.95$, CFI = .98, NNFI = .97, and RMSEA = .07. The initial levels of maternal lack of structure and children's externalizing behaviors were significantly related to each other, whereas the initial level of paternal lack of structure was unrelated to the child's externalizing behavior. This difference in correlations between the initial levels children's externalizing behavior on the one hand, and mothering and fathering on the other hand, was significant, $\Delta \chi^2 (1) = 4.66, p < .05$. At T2, T3, and T4, cross-sectional effects of children's externalizing behavior on maternal and paternal lack of structure were found. Children's externalizing behavior had a positive effect on maternal and paternal lack of structure, above and beyond the previous levels of these behaviors. These child-effects were equally strong across time ($\Delta \chi^2 (2) = 0.71, p > .05$ for mothers, and $\Delta \chi^2 (2) = 3.49, p > .05$ for fathers) and across mothers and fathers ($\Delta \chi^2 (3) = 2.00, p > .05$). The effect of parental lack of structure on child behavior did not reach significance.

The model that tested the long-term bidirectional effects between children's externalizing behavior and parental lack of structure showed no significant cross-lagged effects.

Positive discipline. For positive discipline, both models that tested the short-term ($\chi^2 (47) = 52.59$, CFI = .99, NNFI = .98, and RMSEA = .03) and long-term bidirectional effects ($\chi^2 (41) = 42.28$, CFI = .99, NNFI = .99, and RMSEA = .02) failed to find significant effects between children's externalizing behavior and parental positive discipline. Also the initial levels of children's externalizing behaviors and parental positive discipline were unrelated for both mothers and fathers.

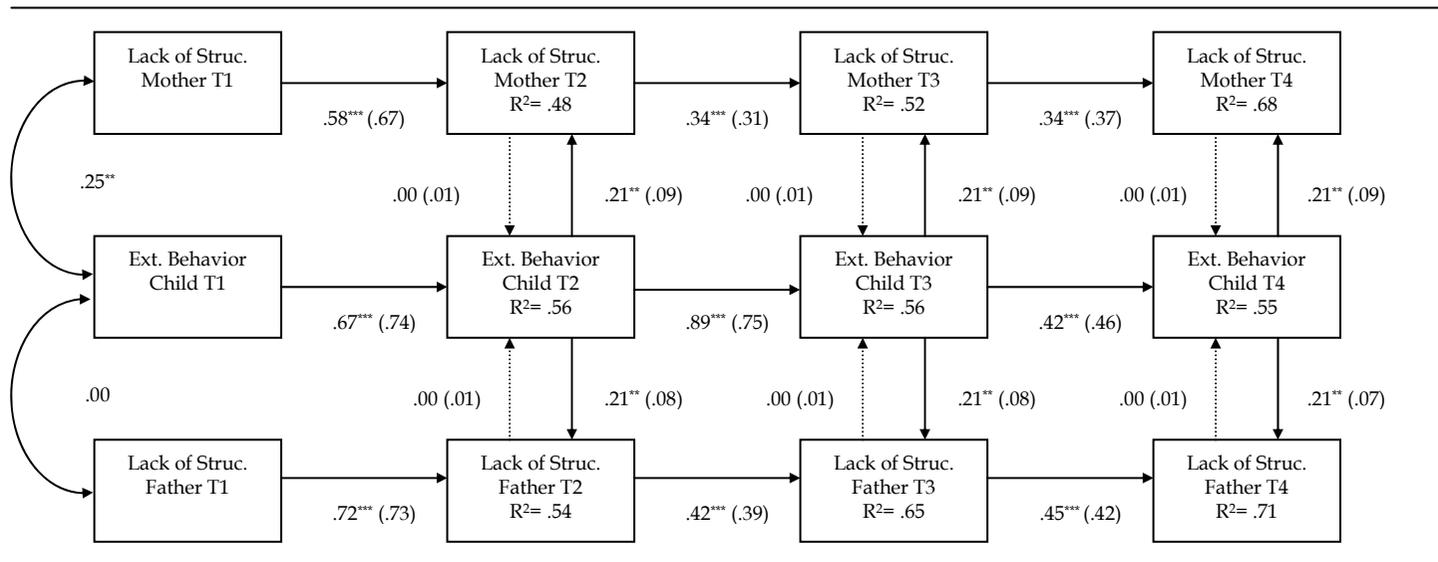


Figure 4.2. The Final Model for the Bidirectional Relationship between Parental Lack of Structure and Children's Externalizing Behavior.
Note: Lack of Struc.= Lack of Structure; Unstandardized beta's are reported outside parentheses and standardized beta's are reported inside parentheses; ** $p < .01$; *** $p < .001$.

Psychological control. The model that tested the short-term bidirectional effects between children's externalizing behavior and parental psychological control showed an acceptable fit to the data, $\chi^2(44) = 71.36$, CFI = .96, NNFI = .94, and RMSEA = .08 (Figure 4.3). The association between the initial levels of psychological control and children's externalizing behavior was significantly different for mothers and fathers ($\Delta \chi^2(1) = 6.46$, $p < .05$). The initial levels of children's externalizing behavior and maternal psychological control were positively associated. With regard to the cross-sectional effects, at T2, T3 and T4, children's externalizing behavior had a positive effect on both maternal and paternal psychological control, above and beyond previous levels of this parental behavior. These effects were equally strong across time ($\Delta \chi^2(2) = 0.56$, $p > .05$ for mothers, and $\Delta \chi^2(2) = 0.30$, $p > .05$ for fathers) and across mothers and fathers ($\Delta \chi^2(3) = 0.27$, $p > .05$). None of the parent-effects reached significance.

The model that examined the long-term bidirectional effects showed that paternal psychological control had a negative, longitudinal effect ($b = -.05$, $p < .05$) on children's externalizing behavior that was equally strong for all measurement waves ($\Delta \chi^2(2) = 0.54$, $p > .05$). However, constraining the longitudinal effects for maternal and paternal psychological control did not deteriorate the models fit ($\Delta \chi^2(3) = 2.27$, $p > .05$), indicating that mothers and fathers influenced their child's behavior to an equal extent. When constraining these longitudinal effects, the effects of paternal psychological control no longer reached significance. This indicates that there is a trend that paternal psychological control has a negative effect on children's externalizing behavior.

Physical Punishment. The model in which the short-term bidirectional effects between children's externalizing behavior and parental physical punishment was tested, showed an adequate fit to the model, $\chi^2(45) = 75.87$, CFI = .96, NNFI = .94 and RMSEA = .08, and is depicted in Figure 4.4. The initial levels of children's externalizing behaviors and parental physical punishment were unrelated, and these relations were not different for mothers and fathers ($\Delta \chi^2(1) = 1.98$, $p > .05$). Children's externalizing behavior had significant, positive, cross-sectional effects on both maternal and paternal physical punishment above and beyond previous levels of this parenting dimension. These effects were equally strong across time ($\Delta \chi^2(2) = 0.30$, $p > .05$ for mothers, and $\Delta \chi^2(2) = 0.65$, $p > .05$

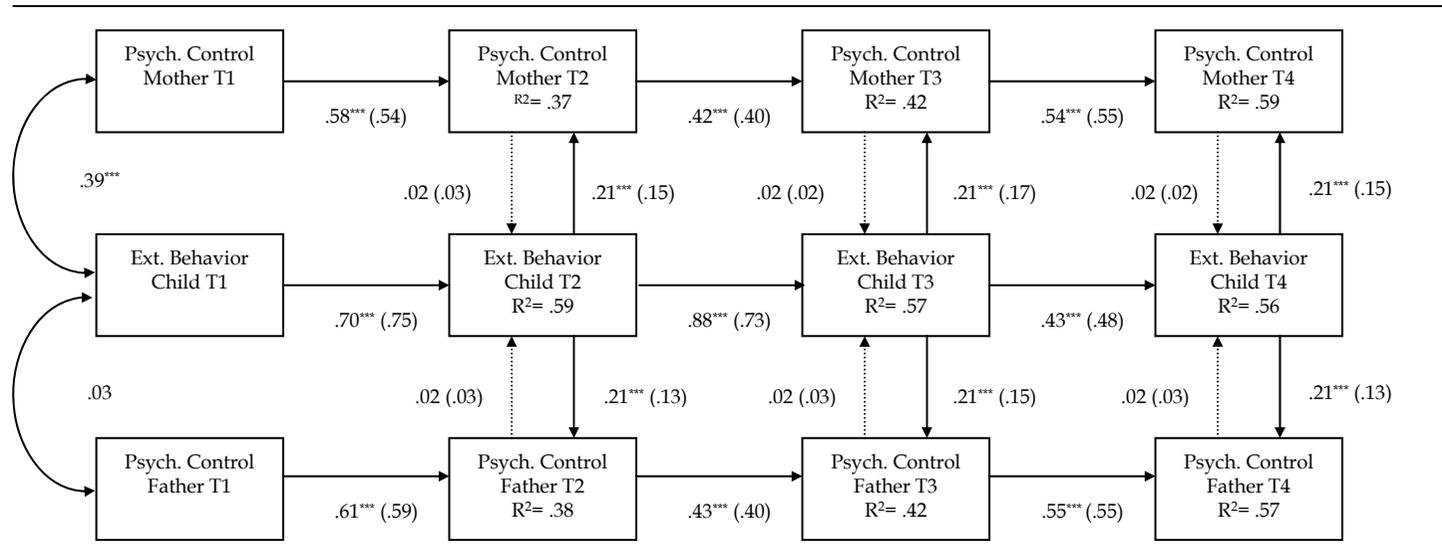


Figure 4.3. The Final Model for the Bidirectional Relationship between Parental Psychological Control and Children's Externalizing Behavior.
Note: Psych Control= Psychological Control; Unstandardized beta's are reported outside parentheses and standardized beta's are reported inside parentheses; *** $p < .001$.

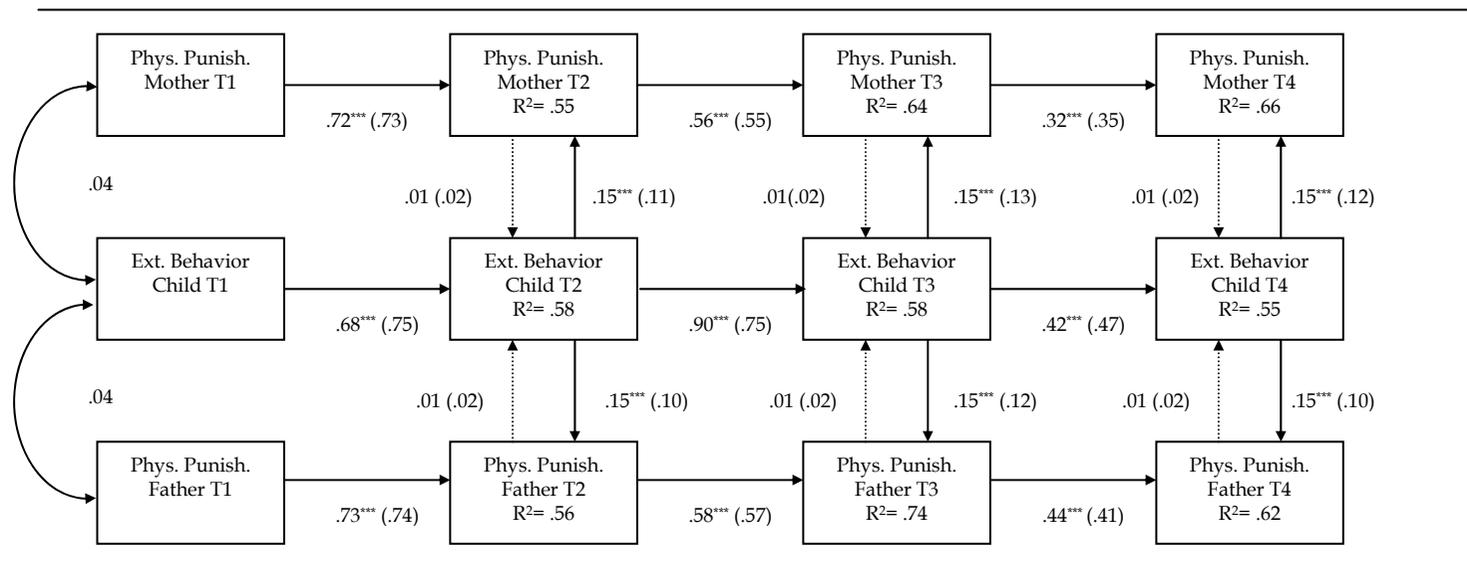


Figure 4.4. The final model for the short-term bidirectional relationship between parental physical punishment and children's externalizing behavior
Note: Phys. Punish.= Physical Punishment; Unstandardized beta's are reported outside parentheses and standardized beta's are reported inside parentheses; *** $p < .001$.

for fathers) and across mothers and fathers ($\Delta \chi^2 (3) = 0.80, p > .05$). None of the parent-effects reached significance.

The model that tested the longitudinal bidirectional effects between children's externalizing behavior and parental physical punishment showed that paternal physical punishment had a significant, negative effect ($b = -.07, p < .05$) on externalizing behaviors. This effect was equally strong across time ($\Delta \chi^2 (2) = 1.15, p > .05$). However, constraining the longitudinal effects for maternal and paternal physical punishment did not deteriorate the models fit ($\Delta \chi^2 (3) = 5.23, p > .05$), indicating that mothers and fathers influenced their child's behavior to an equal extent. When constraining these longitudinal effects, paternal physical punishment no longer had a significant effect on children's externalizing behavior 6 months later. This indicated that there is a trend that paternal physical punishment has a negative effect on children's externalizing behavior.

4.5 Discussion

The current study investigated the reciprocal relationship between toddler-boys' externalizing behaviors and five dimensions of mothering and fathering from the moment the children were 17 months to 35 months of age. We found no evidence of bidirectionality between children's externalizing behavior and parenting during toddlerhood. Although children's externalizing behavior influenced parental behaviors, the reverse was not established. Furthermore, these child-effects occurred only within the same measurement wave and were equally strong across time and across mothers and fathers.

4.5.1 Child effects

Toddlers' externalizing behavior was found to influence parental support, lack of structure, psychological control and physical punishment at 23, 29, and 35 months. Children who show higher levels of externalizing behavior elicit less supportive and structured parenting. Furthermore, these children evoke higher levels of parental psychological control and physical punishment. This pattern of child-effects possibly reflects parental reaction to the increasing difficulty of the child. Higher levels of behavioral problems in children are associated with a

decline in parental satisfaction and self-security (Shaw & Bell, 1993). Especially when parents are rearing a difficult child, parenting challenges intensify (Scaramella & Leve, 2004). Parents may get discouraged by their child's difficultness and are more likely to disengage from their child, which is partly expressed by lower levels of support (Fite et al., 2006; Reitz et al., 2006). In addition, when children are displaying high levels of misbehaviour, parents have to constantly change their parental behaviors in order to find a strategy that works with the child. As a consequence, parents become less structured in their child rearing (Fite et al., 2006). Likewise, high levels of children's externalizing behaviors challenge parent's patience. When dealing with their difficult child, parents may lose their temper and reach for harsh discipline tactics, such as psychological control and physical punishment.

4.5.2 Parent effects

The current study did not find significant effects of parenting on children's externalizing behavior, above and beyond the previous levels of these behaviors. This is in contrast with our hypothesis and inconsistent with theoretical models that assume a bidirectional relationship between children's behavior and parenting. However, these results are not isolated. For older boys (adolescents), other studies also found that children's externalizing behavior influenced their parents, whereas parenting did not affect child behavior (Fite et al., 2006; Reitz et al., 2006).

How can we explain that parenting does not influence toddlers' externalizing behavior? A first explanation lies in the developmental period that was used to examine the parent-child bidirectionality. During toddlerhood, major developmental changes take place, including physical, cognitive, and motor control. The emergence of sophisticated verbal skills, self-awareness, and goal-oriented behavior contribute to a strong push for independence in children. At the same time, parents begin to impose rules and limits, both in response to their child's newfound autonomy and as a natural part of the socialization process. Clashes between a child's self-assertions and parent's limit setting efforts lead to more frequent episodes of frustration and upset (Campbell, 1995; Coie & Dodge, 1998; Tremblay, 2004). Changes in individual differences in the levels of externalizing behaviors during this period may depend more on intrinsic variability within children, such as temperamental characteristics, measures of

intelligence, and specific cognitive abilities, than on extrinsic variability such as parental behaviors.

Second, it might be that the parents in the current study provide sufficiently supportive environments for children's development. According to Scarr (1992), as long as parents are 'good enough', it does not matter in which family children grow up, as parents have few differential effects on children. Ordinary differences between parents have little effect on children's development, unless the parental behaviors are outside of a normal range (Scarr, 1992). The sample of the current study consisted of intact, well functioning, two-parent families, who showed adequate parenting (i.e., high levels of support and positive discipline, low levels of harsh punishment). Future studies should investigate whether individual differences in parenting do affect children's externalizing behavior in at-risk and clinical samples.

A third possible explanation may be that children demonstrate substantial variability in their responses to parental behaviors. Some children are more susceptible for child rearing than other children (Belsky, 2005; Morris, et al, 2002; Paterson & Sanson, 1999). The combination of highly susceptible children with non-susceptible children in one sample may dampen the main effects of parenting, causing it to drop below significance. A previous study with the same sample as in the current study found that effects of parenting on children's externalizing behavior were restricted to toddlers with a difficult temperament (i.e. a combination of low levels of inhibitory control and soothability, and high levels of frustration and activity level) (Van Aken, Junger, Verhoeven, Van Aken, & Deković, in press).

Fourth, the significance of parenting behavior regarding externalizing behaviors may not manifest itself before children enter school (Scaramella & Leve, 2004). The developmental importance of the early parent-child relationship is that children learn strategies for interacting with others (i.e., other children, teachers) that affect future behavior and relationships. Thus, it might be the effects of parenting on children's externalizing behaviors are not yet visible at this early age.

4.5.3 Short-term versus long-term effects

Consistent with the studies of Fite and colleagues (2006) and Vuchinich, Banks, and Patterson (1992), the current study found that child behavior influenced parenting within the same measurement wave but not across measurement waves. As suggested in the introduction, this may indicate that the processes with which child behavior influences parenting are short-term rather than long-term. It seems logic that when children show elevated levels of externalizing behavior, parents react on these behaviors immediately and not six months later. As proposed by the bidirectional models of Bell (1977) and Patterson (1982) specific behaviors in the child elicit specific reactions in the parent and vice versa. For example, the child wines and protests, the parent tries to stop this wining, and the child stops wining. The current study, however, did not measure such behavioral sequences and future studies should investigate these theories by observing these sequential parent-child interactions.

4.5.4 Changes of the bidirectional parent-child relationship

With regard to changes in bidirectional relationships across time, we found that the child-effects on parenting were stable from 23 to 35 months. This stability in child-effects may be caused by the relatively short period between the measurement waves, and the overall short time span of 18 months. Measurement waves were only 6 months apart from each other, which might have been too short to detect significant changes in parent-child relationships. As suggested by other scholars (Fite et al., 2006), more changes in parent-child relationships may be expected during transitions from developmental stages, such as from school age to adolescence.

4.5.5 Mother-father differences

Although it has been suggested that mothers and fathers play a different role in the development of their children, in the current study we found no evidence for differences between the mother-child and father-child relationships. Children affect both their parents in a similar way. That is, both mothers and fathers respond to their children's externalizing behaviors in a similar way.

There were, however, significant differences between the parent-child associations when the child was 17 months old. Although the initial levels of children's externalizing behavior were significantly correlated with maternal

support, structure, and psychological control, we did not find these relations with paternal behavior. As suggested by Sroufe (2000) and Woodworth, Belsky, and Crnic (1996) the myriad of developmental changes that takes place during the child's second and third year seem likely to draw men more actively into parenting. This might explain why the associations between paternal behavior and child behavior becomes stronger after this transition from infancy to toddlerhood.

The finding that there were significant differences between mothers and fathers regarding the parent-child associations at 17 months, but not at later measurement waves, might also reflect a 'shared method bias' (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In the current study, only mothers reported about the child's externalizing behaviors. In the longitudinal path models of the current study, in contrast to the first measurement wave, the levels of parenting and children's behavior at later measurement waves were statistically controlled for previous levels of these behaviors. Thus, the associations between parenting and children's behavior at later measurement waves were also controlled for the 'shared method bias', explaining why mother-father differences were found at the first, but not the later measurement waves.

4.5.6 Limitations and conclusions of the study

The results of this study should be interpreted in light of its limitations. First, the information on parental behaviors and children's externalizing behaviors were obtained by self-reports. It is important to keep in mind that parental reports reflect their perceptions of their own and their child's behavior and may not be identical to their actual behaviors. Although we had good reasons to use self-reported information on parenting (i.e. parents are in the unique position to report on a variety of behaviors, including those that are not readily amenable to direct observations), and to let mothers report about the child's externalizing behavior (in 71.2% of the sample, mother was the primary caregiver) the results of the current study should be replicated by using other measurement techniques and multiple informants.

A second limitation is the use of a relatively homogenous sample consisting of a Dutch intact, middle-class families with a male toddler. Future studies should examine to what extent the present results can be generalized to parent-daughter

dyads, and to families in different circumstances, such as one-parent families, stepparents, and clinical samples.

In addition, two statistically limitations should be mentioned. With regard to the models that were tested in the current study, it should be noted that chances of Type 2 errors were elevated because of the amount of paths that were examined within the models. Although the paths were not examined arbitrary (e.g., predictions were made regarding the character of the effects), it is important that future studies confirm the results of the present study. Second, although longitudinal panel designs are a powerful means of estimating reciprocal causal effects, they do not offer an automatic method for “proving causality” (Finkel, 1995).

Despite these limitations, the current study expanded previous knowledge regarding the bidirectional relationship between parenting and children’s externalizing behavior in several ways. First, we examined this relationship during a period that is fairly understudied when it comes to the bidirectional relationship between parenting and children’s externalizing behaviors: toddlerhood. Second, a broad range of parenting dimensions was studied: support, lack of structure, positive discipline, psychological control, and physical punishment. Third, as the current study implemented four measurement waves, we were able to examine the stability of this bidirectional relationship. And fourth, this study included both maternal and paternal behavior, enabling the comparison of mother-child and father-child relationships.

In conclusion, child effects seem to be stronger than parent effects during toddlerhood. Children who display high levels of externalizing behavior are at risk for evoking dysfunctional parental behaviors, such as a lack of support and structure, and a more frequent use of harsh discipline tactics (psychological control and physical punishment). It is possible that during toddlerhood -a period marked by an increase in children’s externalizing behaviors and a decrease in parental satisfaction and self confidence- parents are seeking for a parental style that is successful with their particular child. Within the early parent-child relationship, the child is the changing factor and these changes within the child are the guidelines for the developing relationship between parenting and child behavior.

5 Mothering, Fathering, and Toddlers' Externalizing Behavior

5.1 Abstract

This study examined the unique and interactive effects of reported maternal and paternal support, psychological control, and physical punishment on toddlers' externalizing behavior. A battery of questionnaires was administered to both parents of 104 intact families with a 3-year-old boy. Results showed that maternal psychological control was uniquely related to children's externalizing behavior. Furthermore, an interactive effect between maternal support and physical punishment was found, suggesting that low levels of support combined with frequent use of physical punishment are related to higher levels of problem behavior in children. Although paternal behavior was not uniquely related to children's externalizing behavior, an interactive effect between paternal and maternal support was found, showing that high support by one parent is insufficient to compensate for low support on the part of the other parent.

5.2 Introduction

Although externalizing behaviors, such as aggression, hyperactivity and oppositionality, are part of the normal behavioral repertoire of young children, toddlers displaying high levels of aggression have repeatedly been shown to be at significant risk for continued behavior problems (Campbell, Shaw, & Gilliom, 2000; Gilliom & Shaw, 2004; Mesman, Bongers, & Koot, 2001). High levels of early externalizing behaviors are of great predictive validity for later adjustment problems, particularly in boys (Mesman et al., 2001). Research shows that externalizing behaviors are stable from age 2 to later life, underscoring the

* Verhoeven, M., Junger, M., Van Aken, C., Deković, M., & Van Aken, M.A.G. (submitted for publication). *Journal of Family Psychology*.

importance of studying the precursors of early problem behavior (Alink et al., 2006; Gilliom & Shaw, 2004). A body of research has attributed an important role to parenting behavior in the prediction of young children's behavior problems (Frankel & Bates, 1990; Silverman & Ragusa, 1990; Smith, Landry, & Swank, 2000; Stormshak, Bierman, McMahon, & Lengua, 2000). Three dimensions of parenting behavior have been shown to be of predictive value for children's problem behavior, namely (a lack of) support, psychological control, and physical punishment.

The parenting dimension *support* includes parental involvement in positive parent-child interactions and the extent to which parents are responsive and sensitive to the child's signals and needs. Parental support is thought to play an important role in child development by facilitating compliance and acceptance of adult values, as the rejection of parental values and standards of appropriate behavior would be incompatible with a continued relationship based on reciprocal positive interactions (MacDonald, 1992). A warm and supportive parent-child relationship has been demonstrated to promote the development of a child's negotiation and conflict-resolution skills (Frankel & Bates, 1990; Silverman & Ragusa, 1990; Smith et al., 2000). In contrast, low levels of support have been linked with child insecurity and difficulties with emotion regulation, including temper tantrums and non-compliance (Stormshak et al., 2000).

Psychological control is usually defined as a covert aggressive and intrusive parenting behavior that manipulates children's emotional and psychological experiences (Barber, 1996). A parenting concept that is highly similar to that of psychological control, is psychological aggression, defined as a psychological or emotional rejection of the child (Straus & Field, 2003). Psychological aggression extends the concept of psychological control with verbal punishment, as by yelling or screaming as a discipline tactic, the parent is also rejecting the child. Both psychological control and psychological aggression are thought to be damaging for the child by causing children to experience psychological pain, as this attacks the child's self-esteem and integrity, which limits the child's opportunities to develop a healthy awareness and perception of the self and thereby constraining the development of socially accepted behavior (Barber, 1996; Straus & Field, 2003). Studies consistently show a positive relationship between frequent use of psychological control and children's problem behavior

from middle childhood to late adolescence (for a review, see Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998).

Children who experienced frequent verbal aggression from parents were reported to show higher levels of physical aggression, delinquency, and interpersonal problems (Vissing, Straus, Gelles, & Harrop, 1991). Studies investigating the association between psychological control and child outcomes during early childhood are scarce. One study has demonstrated that maternal psychological control is a predictor of toddlers' aggressive behavior, while paternal psychological control is not (Brook, Zheng, Whiteman, & Brook, 2001).

Numerous studies have indicated that *physical punishment*, or spanking, is an integral part of how parents discipline their children during the toddler years (Gershoff, 2002; Larzelere, 2000; Strauss & Stewart, 1999). Studies have found a positive link between spanking and child misbehavior (DeKlyen, Speltz, & Greenberg, 1998; Stormshak et al., 2000), although other studies did not find such relationship (Gershoff, 2002; Larzelere, 2000; Larzelere & Kuhn, 2005; Strauss & Stewart, 1999). From the perspective of social learning theorists, physical punishment is hypothesized to cause externalizing behavior because parental spanking leads children to expect successful outcomes from hostile behaviors and aggressive interactions (Simons, Lin, & Gordon, 1998). Furthermore, by solving parent-child conflicts with spanking, parents do not teach their children alternative ways of problem solving other than aggression.

Despite the extensive body of research on the associations between these three parenting dimensions and child behavior, there are still several gaps in the literature. Because most researchers have examined only one parenting dimension at a time, we are not able to draw conclusions about the specificity of the association between this specific parenting dimension and a particular outcome. For example, a parenting dimension (e.g. support) might have a significant effect on children's externalizing behavior, but it is possible that once controlled for other parenting dimensions, this effect is no longer significant. This suggests that the parenting dimension (support) is not uniquely associated with the child outcome, but that this relation is indirect by the other parenting behaviors of this parent. In other words, since parenting dimensions are concurrent and may be related to each other, the total effect of a particular parenting dimension is the result of the entire repertoire of the parenting dimensions used by the parent (Caron, Weiss, Harris, & Catron, 2006). Thus, concurrent parenting dimensions

must be studied simultaneously in statistical analyses to be able to draw conclusions about the specificity of parenting dimensions.

A second reason for studying parenting dimensions simultaneously is that it can be expected that parental behaviors interact in the prediction of child behavior (Aunola & Nurmi, 2005; Caron et al., 2006; Galambos, Barker, & Almeida, 2003). It might be that the relation between a particular parenting dimension and a child's outcome varies as a function of the level of the other parenting dimensions the parent displays (moderation). For example, it might be that harsh disciplinary tactics have different effects on child functioning when the parent is cold and distant, rather than warm and supportive (Goodman, 1997). A recent study by Caron and colleagues (2006) showed that a frequent use of psychological control was only related to more externalizing problems in school-aged children when the parent showed low levels of warmth. In addition, behavioral control was related to lower levels of externalizing behavior when parents rarely used psychological control, but it was related to high levels of problem behavior when combined with frequent use of psychological control (Caron et al., 2006). In a study on the effects of parenting behavior on adolescent problem behavior, it was found that the association between behavioral control and externalizing behavior was limited to families in which parents also reported high levels of psychological control (Galambos et al., 2003). McLoyd and Smith (2002) demonstrated that high levels of spanking were associated with an increase in children's externalizing behaviors only when displayed in a context of low supportiveness. Therefore, second aim of our study was to verify whether the relationship between one specific parental behavior and a child's externalizing behavior is influenced by other parental behaviors. Given the previous results, we hypothesized that the effects of psychological control and physical punishment on children's externalizing behavior will be more serious in a context of low levels of support than in a context of high levels of support. In addition, following the findings of McCloyde and Smith (2002) we anticipated that high levels of psychological control consolidate the effects of physical punishment, so children who are frequently disciplined by both psychological control and physical punishment will display more problem behavior.

A third evident limitation of previous studies on the associations between parenting and children's problem behavior is the lack of knowledge concerning the specific effects of fathering. Most of the existing studies in which the

association between parenting and child behavior has been examined focused either on mothers' child rearing behaviors, or clustered maternal and paternal behavior, so that no comparisons could be made between the effects of mothering and fathering. Those few studies that did make a distinction between the effects of maternal and paternal behavior led to inconsistent results. Some studies found that mothers and fathers affect their child in similar ways and to similar degrees (Caron et al., 2006; Davidov & Grusec, 2006), whereas others stated that maternal behavior is of greater influence than paternal behavior (Aunola & Nurmi, 2005; Brook et al., 2001) or even that paternal behavior affects the child's behavior in the opposite direction to maternal behavior (Casas et al., 2006). To illustrate, Davidov and Grusec (2006) found similar effects of parental support on child's externalizing behavior for mothers and fathers, whereas other studies reported that only maternal support affected children's externalizing problems (Aunola & Nurmi, 2005; Belsky, Hsieh, & Crnic, 1998; Brook et al., 2001). Brook and colleagues (2001) found that maternal, but not paternal psychological control was positively related to more aggression in toddlers. A study on aggression in preschool children, however, showed a positive relationship between maternal psychological control and physical aggression in boys, whereas paternal psychological control was negatively associated with aggressive behavior (Casas et al., 2006). To our knowledge, there are no studies that directly compared the effects of maternal and paternal physical punishment on child behavior. The third aim of the present study therefore was to examine whether maternal and paternal support, psychological control, and physical punishment are related to children's externalizing behaviors in similar ways.

Although there is a growing awareness that child development cannot be understood in terms of separate parent-child relationships and that these relationships should be studied within the context of the family (Feinberg, 2003), studies focusing on the interplay between maternal and paternal behavior in the prediction of children's externalizing behavior are scarce. This is a notable omission as mothers and fathers may compensate or exacerbate the effects of the other parent's parental behavior. A fourth aim of the current study was therefore to move beyond the traditional dyadic parent-child relationship and to examine the effects of one parent's behavior on children's development in the context of the other parent's behavior. We expected that the effect of the parental behavior of one parent is either exacerbating or compensating the effect of the parental

behavior displayed by the other parent. For example, children who experience high levels of both maternal and paternal support are expected to show the lowest levels of externalizing behaviors, whereas a combination of high levels of psychological control and/or physical punishment would be associated with high levels of externalizing behaviors. On the other hand, high levels of support displayed by one parent are expected to buffer the negative consequences of high levels of psychological control or physical punishment displayed by the other parent.

To summarize, this study expands previous knowledge by addressing four major aims: (a) to assess the specificity of concurrent parenting dimensions, (b) to examine whether one parenting dimension moderates the effect of other parenting dimensions, (c) to investigate whether the effects of parenting on children's problem behavior are similar for mothers and fathers, and (d) to investigate the interaction effects between mothering and fathering.

5.3 Method

5.3.1 Participants

Data for the present study were collected as a part of a broader longitudinal project concerning children's externalizing problems and family development. A sample of 104 two-parent families with a toddler son (mean age = 34.9 months, range 33-37, $SD = .7$) was recruited. Only families with a son were included as externalizing behaviors because boys displaying these behaviors are at greater risk for continued behavior problems (Alink et al., 2006; Mesman et al., 2001). The age of mothers ranged from 23 to 45 years ($M = 34.1$, $SD = 4.1$) and of fathers from 23 to 49 years ($M = 36.1$, $SD = 4.9$). The parents in this study were primarily Dutch (97%) and college-educated (65.6% of the mothers and 89.5% of the fathers having a college degree or more). In 53.6% of the families, the target child was the first-born child, and the average number of children in the participating families was 1.96.

5.3.2 Procedure

The recruitment of these families was based on the records of infant welfare clinics in three cities situated in the central region of the Netherlands. Infant welfare clinics systematically follow up all young children in the Netherlands to monitor their growth and development. A recruitment letter that explained the goals of the project was sent to 192 families and was followed up by a telephone call. Of these 192 families, 117 families volunteered. A lack of time was the most prevalent reason for refusal to participate. Self-report inventories were administered to all subjects when the child was approximately 35 months of age. Mothers and fathers were asked to complete the measures independently, without consultation. Parents were asked to return the completed questionnaires by mail within two weeks. Of the 117 families, 5 families dropped out because of relocation, 4 families were dropped as mothers and fathers lived separately, and another 4 families were dropped as the mother ($n = 3$) or the father ($n = 1$) did not return the questionnaires, leaving a sample size of 104.

5.3.3 Instruments

Parenting

Mothers and fathers were asked to judge their own parenting behaviors by filling out questionnaires. We measured three dimensions of parenting: support, psychological control and physical punishment. Though these three parenting dimensions have been the focus of previous research, there is no single instrument to assess all three dimensions in early childhood. Therefore, we used 6 scales from existing valid and reliable instruments that represent the three parenting dimensions. All scales that were originally produced in English, and for which no standard Dutch translation was available, were translated by means of a double translation procedure. Since the children in this study are 35 months of age, several items were not age-appropriate and had to be revised or left out. In a previous study including the same sample when the children were 17 months old, this three-fold classification of parenting dimensions was evaluated and confirmed by a confirmatory factor analyses. The three parenting dimensions had satisfactory internal consistency and good concurrent validity as indicated by their associations, in predicted direction, with parental personality, contextual features

(including SES and marital satisfaction), and children's temperament (Verhoeven, Junger, Van Aken, Deković, & Van Aken, 2007).

Support. Two scales represented the parenting dimension support. The first scale, sensitivity/responsiveness, reflects the degree to which parents are sensitive for their child's needs and adequately and responsively react to these needs, signals and conditions (Gerris et al., 1993). Three items measured parental sensitivity ("I know very well what my child feels or needs", "I know when my child is sad", "When my child is upset, I know what is wrong"). A fourth item measures parental responsiveness ("When my child is upset, I'm able to comfort him"). Parents rated the frequency of their parenting behavior on a 5-point scale ranging from 1 = *never* to 5 = *always*. The second scale, positive interactions ($N = 5$ items), measures the degree to which a parent is involved in positive interactions with the child (Strayhorn & Weidman, 1988). Two items measured positive parent-child interactions at a dyadic level (i.e. "How often do you and your child laugh together", and "How often do you and your child talk or play together, focusing attention on each other for five minutes or more, just for fun?") These two items were dropped from the scale. The other three items that we did use in the Support-dimension are: "How often do you praise your child by saying something like "Good for you!" or "What a nice thing you did!" or "That's good going!""", "How often do you do something special with him/her that he/she enjoys?", and "How often do you play games with him/her?". The frequency of positive parent-child interactions was measured on a 5-point scale, ranging from 1 = *never* to 5 = *many times each day*. Internal consistency (Cronbach's alpha) was .63 for maternal Support, and .73 for paternal Support.

Psychological control. To assess psychological control two scales were used. Four items measured how often parents used withdrawal of attention and/or affection as a technique to discipline their child: "When my child misbehaves, I pretend that he is not there anymore", "When my child misbehaves, I stop talk to him until he pleases me again", "When my child misbehaves, I don not listen to what he says", and "When my child misbehaves, I do not take care of him anymore" (Gerris et al., 1993). The second scale, verbal punishment, was measured with five items derived from the Discipline scale of the Parent Behavior Checklist (Fox, 1994), and assessed the parental tendency to become verbal

aggressive as a response to their child's misbehavior ("I yell at my child for being too noisy at home.", "If my child is overactive, I yell at him, I yell at my child for whining", "If my child cries after being put to bed, I yell at him", and "I yell at my child for spilling food"). Both scales are measured on a 5-point scale (1 = *never* to 5 = *always*). Internal consistency (Cronbach's alpha) was .73 for maternal Psychological Control, and .77 for paternal Psychological Control.

Physical punishment. Two scales assessed parental use of physical punishment. Five items were drawn from the Discipline scale of the Parental Behavior Checklist (Fox, 1994): "If my child would hit, kick, bite, or scratch someone, I would spank him", "When my child doesn't do what I tell him/her to do I spank him", "If my child cries after being put to bed, I spank him", "I spank my child for refusing to eat", and "When my child has a temper tantrum, I spank him". Three items are from the Alabama Parenting Questionnaire (Shelton, Frick, & Wootton, 1996): "You spank your child with your hand when he has done something wrong", "You slap your child when he has done something wrong", "You hit your child with a belt, or other object when he has done something wrong". On a 5-point scale parents had to indicate how often they use spanking as a disciplinary technique, ranging from 1 = *never* to 5 = *always*. Internal consistency (Cronbach's alpha) was .77 for maternal Physical Punishment, and .70 for paternal Physical Punishment.

Child Behavior

Externalizing behavior. The Child Behavior Checklist 1 ½ - 5 (Achenbach & Rescorla, 2000) was used to measure the child's externalizing behavior. The broad externalizing scale consisted of two subscales: attention problems (5 items) and aggressive behavior (19 items). Both parents responded on a 3-point scale, ranging from 0 = *never* to 2 = *often*, as to whether specific behaviors were indicative of their child's behavior. Raw scores were used to indicate the child's level of Externalizing Behavior. The internal reliability of this scale was .89 and .87 for maternal and paternal reports respectively. The correlation coefficient of .58 shows moderate to high agreement between mothers' and fathers' reports of children's externalizing behaviors. In order to obtain more reliable measures, the

mean scores of maternal and paternal reports on their child's externalizing behavior were averaged.

According to these reports 19.3% of the boys scored above the borderline clinical range of externalizing behaviors. A study by Koot (1993) described the prevalence of behavioral and emotional problems in a nationally representative sample of Dutch parents, and reported that 17.2% of the 2-3 year-old boys scored above the borderline clinical range. Based on these results, the prevalence of externalizing behaviors found in the present study seems to be representative for the Dutch population.

5.4 Results

5.4.1 Preliminary Analyses

Table 5.1 presents the means, minimum and maximum scores, standard deviations, and intercorrelations for the measures of externalizing behavior and parental behavior. Analysis of skewness (ranging from .09 to 1.59) and kurtosis (ranging from .53 to 2.49) indicated that the variables were normally distributed and that no transformations were necessary. Approximately 3% of the data was missing, and missing value analysis indicated these data were missing completely at random, Little's MCAR $\chi^2(266) = 278.28, ns$, for maternal data, and $\chi^2(539) = 561.03, ns$, for paternal data. To enable the computation of regression analyses for participants with missing data, missing values were first imputed based on all study variables using the EM algorithm (Allison, 2002), and the resulting variables were then included in the analyses.

Both mothers and fathers reported low to moderate levels of psychological control and physical punishment. Paired t-tests revealed that only the level of support differed significantly between mothers and fathers, with mothers rating themselves slightly higher on this parenting dimension, $t(103) = 5.46, p < .001$. Similar patterns of interrelations between parenting dimensions were found for mothers and fathers. High levels of support were associated with low levels of psychological control. In addition, psychological control was positively related to physical punishment. Moderate correlations were found between maternal and paternal use of psychological control and between maternal and paternal use of physical punishment.

Table 5.1. Correlations between Child's Externalizing Behavior and Maternal and Paternal Behavior at 35 Months

	1	2	3	4	5	6	7
1. Externalizing Behaviors							
Maternal Parenting							
2. Support	-.31**						
3. Psychological Control	.45***	-.27*					
4. Physical Punishment	.27**	-.15	.34***				
Paternal Parenting							
5. Support	.01	.18 [#]	.03	-.11			
6. Psychological Control	.26**	-.07	.36***	.12	-.31**		
7. Physical Punishment	.04	.00	.16	.26*	-.19*	.32**	
M	.60	4.35	1.87	1.31	4.11	1.87	1.31
SD	.27	.31	.43	.37	.43	.47	.41
Min	.02	3.40	1.00	1.00	3.10	1.00	1.00
Max	1.17	5.00	2.78	2.63	5.00	3.22	2.88
Skewness	.24	-.42	-.27	1.58	-.08	.16	1.23
Kurtosis	-.06	-.27	-.53	2.45	-.66	-.63	.79

[#] $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

On average, parents reported low to moderate levels of externalizing behavior for their child. There was a positive relationship between children's externalizing behavior and maternal support, but not between children's externalizing behavior and paternal support. A t-test that examines the difference of two dependent correlations (<http://home.clara.net/sisa/correl.htm>), showed that the correlation between maternal support and externalizing behavior is significantly higher than the correlation between paternal support and externalizing behavior, $t(101)=-2.64$, $p < .001$. Both maternal and paternal psychological control were equally and positively related to higher levels of children's externalizing behavior, $t(101) = 1.88$, $p = .07$. Additionally, although maternal physical punishment is significantly related to children's externalizing behavior whereas paternal physical punishment is not, the t-test showed that there is no difference in the relatedness between children's externalizing behavior and maternal and paternal physical punishment, $t(101)= 1.97$, $p = .07$.

Table 5.2. Regression Analysis: Predicting Child's Externalizing Behavior with Parental Behavior at 35 Months

Variable	Mother-model	Father-model
	β	β
Dimensions		
Support	-.19*	.09
Psychological Control	.36***	.31**
Physical Punishment	.12	-.04
R ²	.26***	.08*

* $p < .05$, ** $p < .01$, *** $p < .001$

5.4.2 Mothering and Fathering in the Prediction of Children's Externalizing Behavior

First, two separate regression models for maternal and paternal behavior were conducted in order to examine the relative associations between mothers' and fathers' support, psychological control and physical punishment and children's externalizing behaviors. Table 5.2 shows that maternal parenting behavior accounted for 26%, $F(3, 103) = 11.48$, $p < .001$, of the variance in children's externalizing behavior. High levels of maternal support were associated with low levels of children's externalizing behavior, $\beta = -.19$, $p < .05$. High levels of

maternal psychological control were related to higher levels of externalizing behavior, $\beta = .36, p < .001$. Paternal behavior accounted for 8 % of the variance in child's externalizing behaviors, $F(3, 103) = 2.89, p < .05$. Paternal psychological control was positively related to more externalizing behaviors within the child, $\beta = .31, p < .01$.

To examine interaction-effects within maternal behavior and within paternal behavior, hierarchical regression models were run separately for each of the six two-way interaction-terms (i.e. support versus psychological control, support versus physical punishment, psychological control versus physical punishment). In the first step, the two lower terms are added in the model in order to control for their main effects. In the second step, the interactive term was added.

Only one out of the six interaction terms was found to have a significant effect on children's externalizing behavior. Maternal support and physical punishment had an interactive effect on children's externalizing behavior, $\beta = .21, p < .01, F(3, 103) = 7.68, p < .001$. In order to investigate this interaction effect further, we performed median splits on the parenting dimensions, and the resulting four groups were then crossed to form four cells. Subsequently, the means of each group for child's externalizing behavior were derived. Figure 5.1 shows that children display the lowest level of externalizing behaviors when their mother scores high on support and low on physical punishment. The highest levels of externalizing behaviors are found in children whose mothers score low on support and high on physical punishment.

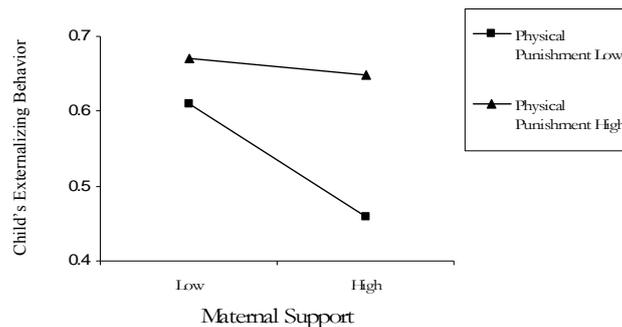


Figure 5.1. Child's Externalizing Behavior as a Function of Maternal Support and Maternal Physical Punishment.

5.4.3 Mothering and Fathering as Predictors of Children's Externalizing Behavior in the Family Context

To determine whether the effects of maternal and paternal behavior to children's externalizing behavior were unique, a hierarchical regression model was tested in which the three parental dimensions and their interactive terms of both mothers and fathers were tested simultaneously. In the first step, the unique and interactive terms of maternal behavior were entered. In the second the unique and interactive terms of paternal behavior were added. Changing the order in which maternal and paternal behavior is entered in the regression analysis (with paternal behavior entered first) leads to the same conclusion.

Table 5.3 shows that maternal, but not paternal behavior had a unique effect on children's externalizing behavior, $F(12, 103) = 3.72, p < .001$. Note that the effect of paternal psychological control, which was found to be significant in the father model, no longer reached significance. This indicates that paternal psychological control had no unique effect on children's externalizing behavior, after controlling for the effects of maternal parenting.

Table 5.3. Regression Analysis: Predicting Child's Externalizing Behavior with Parental Behavior at 35 Months

Variable	Mother/Father Model	
	β	ΔR^2
Maternal Behavior		
Support	-.17 [#]	.31 ^{***}
Psychological Control	.31 ^{**}	
Physical Punishment	.14	
Support * Psychological Control	-.06	
Support * Physical Punishment	.22 [*]	
Psychological Control * Physical Punishment	.11	
Paternal Behavior		
Support	.09	.02
Psychological Control	.13	
Physical Punishment	-.05	
Support * Psychological Control	.02	
Support * Physical Punishment	.03	
Psychological Control * Physical Punishment	-.02	
R ²		.33 ^{***}

[#] $p > .10$, ^{**} $p < .01$; ^{***} $p < .001$

5.4.4 Interactions between Mothering and Fathering

To investigate whether the association between a child's externalizing behavior and the child-rearing behavior of one parent is affected by behavior of the other parent, each of the nine interaction terms of maternal and paternal parenting (maternal support versus paternal support, maternal support versus paternal psychological control, maternal support versus paternal physical punishment etc.) was tested in a separate hierarchical regression model. In the first step, the two lower terms of maternal and paternal parenting dimensions were added. In the second step, the interactive term between maternal and paternal behavior was entered into the model.

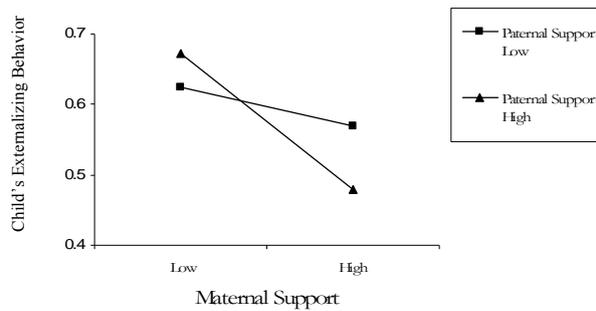


Figure 5.2. Child's Externalizing Behavior as a Function of the Interplay between Maternal and Paternal Support.

These analyses demonstrated that 1 out of 9 interaction effects was significant. Paternal support interacted significantly with maternal Support, $\beta = -.19, p < .05$, in the prediction of a child's externalizing behavior, $F(3, 103) = 5.25, p < .01$. Examination of this interaction effect (Figure 5.2) shows that the lowest levels of externalizing behavior are found in children whose mothers and fathers reported high levels of support. When one of the parents was low on support the level of externalizing behavior was similar to the cases when both parents were low on support. Note that in the context of low levels of maternal support, high levels of paternal support are associated with high levels of children's externalizing behavior.

5.5 Discussion

By considering different dimensions of both paternal and maternal behavior, the current study was able to go beyond previous research in investigating the unique and interactive roles of reported mothering and fathering in the prediction of children's externalizing behavior. Parenting behaviors reported by mothers were directly related to children's externalizing behavior. Reported paternal parenting indirectly influenced the child's behavior by moderating the relationship between mothering and children's externalizing behavior. When interpreting these

findings, it is important to keep in mind that this study was concerned with intact, two-parent families only. The results may not generalize to other types of families.

5.5.1 Maternal and Paternal Behavior as Predictors of Early Externalizing Behavior

When predicting externalizing behaviors in 35-month-old children from three parenting dimensions, unique effects were found only for maternal and paternal psychological control. As expected, higher levels of psychological control were associated with higher levels of problem behavior by the child. This is in line with the assumption that psychological control limits the child's opportunities to build up a healthy self-image, which constrains the development of socially accepted behavior (Aunola & Nurmi, 2005; Brook et al., 2001; Rothbaum & Weisz, 1994). Several studies have already provided evidence regarding the importance of psychological control for older children (middle childhood and adolescence) (Barber, 1996). The present findings indicate that psychological control is already evidently important when it is used during early childhood.

It should be noted that our conceptualization of psychological control differs from that of the literature on psychological control. First, based on the original description of psychological control by Barber (1996) and a more recent description of psychological aggression by Straus and Field (2003), we decided that verbal punishment (yelling/screaming) should be included in the concept of psychological control, as it is expected that verbal punishment has the same effects on child development by working through the same mechanism as other aspects of psychological control (Straus & Field, 2003). Moreover, the fact that this disciplinary tactic is used by 90% of the parents of 2-4 years old emphasizes the importance of including verbal punishment when studying parenting during early childhood (Straus & Field, 2003). Second, we did not include guilt induction and intrusiveness as indicators of psychological control. As psychological control has not often been studied during early childhood (Brook et al., 2001; Casas, 2006), it is not yet clear how this parenting dimension should be measured. Future studies should address this.

For mothering, we established that support and physical punishment interacted in predicting children's externalizing behaviors. Consistent with the literature on authoritative parenting (Kaufmann, Gesten, Santa Lucia, Salceda, & Rendina-

Gobioff, 2000), results showed that the combination of low levels of support with high levels of harsh control are unfavorable to child development, as these children display relatively high levels of externalizing behaviors. In contrast, the combination of high levels of support and low levels of physical punishment is the most preferable, since these children exhibited the lowest levels of externalizing behavior. Previous studies suggest that supportive and non-aggressive parents rear better-regulated children, who are able to modulate externalizing behaviors that stem from emotions such as anger or frustration (Eisenberg et al., 2005). The hypothesis that high levels of maternal support attenuate the negative consequences of maternal physical punishment was partly confirmed by our results. The negative consequences of physical punishment were diminished by maternal support when mothers reported an infrequent use of physical punishment. A possible explanation for this moderating effect is that children interpret physical punishment differently when it is displayed in the context of high levels of support. As McLoyd and Smith (2002) suggested, children may be less likely to interpret physical punishment as an indication of parental rejection when the relationship with the parent is generally warm and supportive. It is also possible that supportive mothers use physical punishment differently from non-supportive mothers. Supportive mothers may use physical punishment based on child-oriented rather than parent-oriented motives and combine spanking with follow-through on disciplinary warnings and absence of verbal insults and ridicule (Larzelere, 1996). When mothers reported a frequent use of physical punishment, however, the level of support did not diminish the association between physical punishment and children's externalizing behavior. This suggests that when the incidence of physical punishment on the part of mothers exceeds a critical point, maternal support can no longer compensate for the negative effects on child behavior.

The fact that only three unique effects of reported parenting dimensions on children's externalizing behavior were found, despite the fact that there were several bivariate relations, underscores the importance of studying distinct parenting dimensions in a single statistical model to verify the specificity of the relationship between certain parenting dimensions and children's problem behavior. If the effects of distinct parenting dimensions are examined without taking account of the covariance between these dimensions, results that suggest specific correlations between parenting and child behavior may actually represent

indirect effects between the different parenting dimensions (Caron et al., 2006). Thus, to assess specificity accurately, concurrent parenting dimensions need to be controlled for.

5.5.2 Combined Effects of Maternal and Paternal Behavior on Early Externalizing Behavior

The principle that concurrent parenting dimensions need to be controlled for also applies to the assessment of specificity of maternal and paternal behavior in the prediction of children's externalizing behavior. Although we found a significant effect of paternal psychological control on the child's problem behavior, this association did not persist once the effects of maternal behavior were controlled for. The finding that maternal behavior but not paternal behavior directly affected the child is consistent with previous findings (Hart, DeWolf, Wozniak, & Burts, 1992). It is suggested that mothers spend more time with their young children and in this way are of greater influence (McBride & Mills, 1993). Alternatively, reciprocity between parent and child is a cumulative process that takes time to develop and thus the association between parenting and child behavior becomes stronger over time (Rothbaum & Weisz, 1994). It is not before toddlerhood that paternal involvement deepens and so stable father-child patterns begin to crystallize at a relatively older age than the mother-child relationship (Sroufe, 2000). This might also explain why we did not establish unique effects for fathering at this early age. It could also be that, in the current study, the measures of parenting did not cover the kind of interactions that are important in a father-child relationship (Aunola & Nurmi, 2005). As some researchers state, the father-child relationship is fundamentally different from the mother-child relationship, suggesting that it might be different aspects of maternal and paternal behavior that particularly affect children's behavior (Stolz, Barber, & Olsen, 2005). For example, Paquette (2004) postulates that calming and comforting behaviors in mothers are important, whereas paternal behaviors affect the development of their children by physical play.

Although no direct effects of fathering were evident, paternal support did interact with maternal support in the prediction of toddlers' externalizing behavior. The interaction effect showed that high support by one parent seems insufficient to compensate for low support on the part of the other parent. In other

words, in the case of support, one parent cannot compensate for the lack of support on the part of the other parent.

It should be noted that in the context of low maternal support, higher levels of paternal support are associated with higher levels of children's externalizing behaviors. One possible explanation for this counterintuitive finding is that mothers experience higher levels of stress than fathers when their child displays moderate to high levels of externalizing problems. This experienced stress undermines the parental skills of these mothers, leading to less support on the part of the mother. In addition to these increased stress levels, mothers might also feel more need for assistance in dealing with their child (Baker & Heller, 1996). This cry for help from the mother may spur fathers into becoming more involved and supportive in an effort to assist their partner in dealing with a difficult child and to compensate for the dysfunctional parenting behaviors of their partner (Lindsey, Caldera, & Collwell, 2005).

The finding that the relationship between the caregiving of one parent and children's behavior is influenced by the caregiving of the other parent demonstrates that child development cannot be understood in terms of separate parent-child relationships, but should be illuminated from the family-system perspective. Recently, Volling, Blandon and Gorvine (2006) found comparable results: the interactive terms of mothering and fathering explained additional variance in children's compliance over and above the dyadic parenting-child relationships. These moderating effects found in their study and in ours suggest that processes at family level contribute uniquely to children's development. Future studies focusing on triadic relations are required to investigate these family-level processes more thoroughly, for example by observing co-parenting processes between parents and children.

5.5.3 Limitations of the Study

When interpreting the results of this study one should be aware of several limitations. To date, there is no definitive, all-encompassing way to define and conceptualize parenting (O'Connor, 2002). Especially with regard to parenting during early childhood, there is no consensus to which parental behaviors are particularly important at this developmental stage, as the majority of studies with this age group focused on affective aspects such as parental responsiveness, rather than on parenting control behaviors such as disciplinary techniques. We selected

three dimensions of parenting (support, psychological control, and physical punishment) that have consistently been assessed and associated with individual differences in child development at different ages. The results of the present study are consistent with that of previous studies. However, our conceptualization of parenting is not exhaustive. For example, an aspect of parenting at this age that we neglected, but that surely deserves attention in the future studies, is positive control, that is, providing explanations and stimulating desirable child behaviors.

Second, the sole reliance on questionnaires to measure parenting and children's externalizing behavior is a serious limitation. Parenting and child behavior may not have been reliably assessed, as self-reports are likely to suffer from social desirability effects (Nederhof, 1985). Several studies, however, have shown that what parents report gives a good indication of what parents actually do (Johnston, Scoular, & Ohan, 2004; Vereijken, Hanta, & Van Lieshout, 1997). Additionally, studies suggest that parents are good indicators of their child's behavior problems (Loeber, Green, Lahey, & Stouthamer-Loeber, 1991). Still, the sole reliance on questionnaires may have inflated the relationship between these variables due to shared-method variance.

A third limitation is the use of a sample consisting of Dutch intact, middle-class families with a male toddler. Focusing on such a homogenous sample may be the reason why relatively low levels of children's externalizing were reported, and the variations in parenting behaviors found in the present study were limited. The present findings may not apply to other families in different circumstances, such as one-parent families or stepparents. It is necessary to extend this research to parent-daughter dyads to examine whether associations between parenting and child behavior are similar for girls. In addition, it is not clear to what extent the present results can be generalized to populations that demonstrate high levels of externalizing behavior or dysfunctional parenting. Future research with a larger and more heterogeneous sample should replicate the findings of the present study. Fourth, the data used was obtained at one single moment, which limits our ability to determine the direction of the effects.

Nevertheless, this study is valuable in that it expands our knowledge regarding the associations between parenting and child behavior. The finding that the relationship between parenting dimensions and children's externalizing behaviors varied as function of the level of other parenting dimensions (i.e. moderated

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effects) supports the notion that concurrent parenting dimensions should be studied simultaneously. Moreover, the findings stress the importance of considering the interactive effects between mothering and fathering on child development.

6 General Discussion

This thesis focused on parenting during toddlerhood (i.e. 17-35 months). The empirical studies presented here are centred among four main questions: (1) what causes individual differences in childrearing behaviors, (2) does parenting develop during toddlerhood, (3) how are individual differences in parenting related to children's externalizing behavior, and (4) are there differences between mothers and fathers regarding their parental behaviors, and the determinants, stability and consequences of these behaviors?

6.1 The determinants of parenting

A large body of research has examined the impact of individual differences in parenting behavior on developmental outcomes of the child. Less is known about where these individual differences in parenting come from. Following Belsky's process model of parenting (1984), in Chapter 2 it was verified whether personal, contextual, and child characteristics uniquely predicted individual differences in parenting behavior.

With regard to *parental characteristics*, three personality traits appeared to be especially important, as they determined several parenting dimensions: agreeableness, emotional stability, and self-control. Parents who are high on agreeableness (e.g., parents who are friendly, helpful, and straightforward), who are high on conscientiousness (e.g., parents who are well organized and have high standards), and parents high on emotional stability (e.g., parents who are low on nervousness, anxiousness, and irritability) were more supportive and structured in their parenting than parents low on these traits. Parents who had low self-control (e.g., parents who are impulsive, self-centred, and who possess volatile tempers) reported a more frequent use of psychological control and physical punishment. More research regarding this latter finding is desired, especially since not much attention has been paid to self-control as a determinant of parenting. Moreover, psychological control and physical

punishment have been associated with developmental problems in children (Barber, 1996; DeKlyen, Speltz, & Greenberg, 1998).

Contextual characteristics also influenced parenting. Marital satisfaction influenced the levels of support, lack of structure and positive discipline. Parents who are satisfied with their marriage are more supportive and structured in their parenting and report higher levels of positive discipline than parents who are not happy in their marriage. As was suggested by Belsky (1984), it seems that the support parents get from their spouses promote their parental competence. The socioeconomic status (SES) of the family predicted the use of physical punishment. Parents low on SES use this form of discipline more often than parents high on SES. It is suggested that this relationship between SES and physical punishment is mediated by parental beliefs about spanking (Gerris, Deković, & Janssens, 1997; Kohn, 1963). However, it may also be that parents low on SES experience higher levels of stress that undermine adaptive parenting (McLoyd, 1990). Future studies are needed to better understand the link between SES and the use of physical punishment.

Child characteristics influenced individual differences in maternal support and in parental positive discipline and psychological control. Children who are high on inhibitory control (e.g., children that are able to stop, moderate, or suppress a behavior under construction) evoke higher levels of support, but only in their mothers. Children high on activity level (e.g., children that are highly involved in running around, banging, and dumping toys) provoke high levels of psychological control. It may be that parents who rear highly active children and children low on inhibitory control experience higher levels of stress, leading to lower levels of support and higher levels of psychological control. But it is not clear why the effects of these child characteristics are related to support and psychological control, but not to the other dimensions of parenting. The language-ability of the child had an effect on positive discipline. Children who are better able to express themselves verbally are more frequently disciplined in a positive way than children having difficulties with the use of language. In the current thesis, positive discipline is composed of two discipline techniques in which the use of speech is central: praising the child with words, and explaining to the child why certain behavior is unwanted. It can be assumed that when children use more language in interaction with their parents -showing that they understand language-, parents are more likely to use speech to discipline the child.

In general, we found support for Belsky's assumption that parental characteristics are the most important determinants of parenting followed by contextual characteristics, and that characteristics of the child contribute only marginally to parenting. Parental characteristics explained 3%-18%, and contextual characteristics 3%-9% of the variance in parenting. The characteristics of the child explained the smallest portion (2%-5%) of the variance in parenting, with the exception of maternal support, in which 13% of the variance was explained by child characteristics. However, it is important to note that the relative importance of these three domains of characteristics varies across parenting dimensions. For example, for positive discipline the influence of parental, contextual, and child characteristics was approximately equally strong, whereas physical punishment was best predicted by contextual characteristics. It is notable that the SES of the family is the most important determinant of physical punishment, even more important than personal or child characteristics. Thus, whether parents spank their child in response to children's misbehavior depends more on economical factors than on the personality of the parent or the characteristics of the child. Knowledge regarding the relative importance of specific characteristics in specific parenting dimensions is helpful to better understand the causes of individual differences in parenting.

In Chapter 4, the effects of children's externalizing behavior on parenting were examined. Results showed that children's externalizing behavior affected parental support, lack of structure, psychological control and physical punishment. When children are 23, 29, and 35 months of age, elevated levels of externalizing behaviors led to decreased levels of support and structure, and increased levels of psychological control and physical punishment, over and beyond previous levels of these parenting dimensions.

Thus, in contrast to the finding that children's temperamental characteristics only affected positive discipline and psychological control, externalizing behaviors of these children influenced a broader range of parenting dimensions. Why is it that the effects of externalizing behaviors on parenting are more far-reaching than the effects of the child's temperament? It is plausible that the explanation lies in the difference between temperament and externalizing behaviors. There has been a long debate concerning the aetiology of the association between temperament and externalizing behavior (Lemery, Essex, & Smider, 2002). One model posits that temperament and externalizing behavior are distinct but related phenomena, suggesting that normal-range temperamental

characteristics may predispose an individual to the development of externalizing problems (Lemery, 1999; Rothbart, Posner, & Hershey, 1995). Another model assumes that temperament and externalizing behaviors are different manifestations of the same underlying process, and externalizing behaviors simply represent the extremes of temperament. Both models recognize that temperament incorporates the normative range of responding, whereas externalizing behaviors are symptom clusters that are dysfunctional, excessive, maladaptive, or debilitating (Achenbach, 1995). According to Bell's socialization model (Bell, 1979; Bell & Chapman, 1986), parents and children regulate each other as a thermostat. When the behavior of the child gets too inappropriate (i.e., reaches the upper limit of the parent), then parents move in and children reduce or redirect their extreme behavior. As externalizing behaviors are more extreme and dysfunctional, these behaviors are more likely to reach the limits of the parents and are probably a greater source of child-related stress than the child's temperament. For this reason, it is not unexpected that children's externalizing behavior is a better predictor of parenting than children's temperament. Future studies are required to examine this more thoroughly.

6.2 Stability and change in parenting

There is an extensive body of research that investigates the developmental trajectories of child behavior, but only few studies are concerned with the developmental patterns of parenting. Despite this lack of empirical evidence, two theories were formulated regarding the developmental character of parenting. The first one is referred to as the 'trait-approach', that assumes parenting to be trait-like and therefore enduring and consistent across time. The second approach is the 'child-effect approach', presuming that parenting is influenced by child characteristics, such as age, gender and developmental stage, and is therefore changeable.

In Chapter 3, we investigated four forms of stability of parenting across three measurement waves, from 17 to 29 months. First, we showed that the contents of the five parenting dimensions (support, lack of structure, positive discipline, psychological control, and physical punishment) were similar across time (i.e., factorial equivalent). Second, it was shown that as a group, the parents of the

current study did not change in their levels of support, lack of structure, and physical punishment. They did increase in their levels of positive discipline and psychological control, but these changes were very small. Third, the rank ordering of these parents was fairly stable for all five parenting dimensions. That is, parents who were high on a specific parenting dimension, relative to the other parents, stayed high on this parenting dimension throughout toddlerhood. Fourth, at the individual level, the majority of the parents (85.2%-98.1%) reported no reliable changes in their parenting. Thus, the percentage of parents who are stable in their parenting is very large, and the probability that parents change a great deal during toddlerhood is small. However, small, but significant, percentages of parents did change in their levels of structure (6.5%, only mothers), positive discipline (7.4%-11.1%), psychological control (14%-14.8%), and physical punishment (9.2%-10.2%).

These results indicate that parenting is quite stable throughout toddlerhood. Nevertheless, this stability is not perfect. Individual parents do report changes in their childrearing, but in general these changes are small and do not reach significance. Moreover, these individual changes in diverse parenting dimensions are interrelated. Parents who became more (or less) supportive in their parenting were likely to increase (or decrease) in the frequency with which they use positive discipline. In addition, parents who reported a decrease (or increase) in their structure in parenting were likely to increase (or decrease) in their levels of psychological control. Mothers, but not fathers, who became more supportive also became more structured in their parenting. Underlying parenting goals (i.e., the goals towards which parenting is directed) and the emotional climate in which parenting takes place may be the cause of this intrapersonal coherence of changes across several parenting dimensions (Darling & Steinberg, 1993). It is noteworthy that the parenting dimensions that change along with each other are determined by common characteristics. In Chapter 2 we saw that support and positive discipline are both determined by agreeableness and marital satisfaction. Parental lack of structure and psychological control are determined by emotional stability. As was mentioned by Belsky (1984), these characteristics are resources of the parent to deal with parental stress. Possibly, they also function as a resource to deal with a changing child. Prospective studies should investigate how these characteristics are related to changes in parenting.

In addition to the high levels of stability in parenting, we found that the associations between parenting and children's externalizing behavior were also stable during toddlerhood. In Chapter 4 we established that children's externalizing behavior had an effect on parental support, structure, psychological control, and physical punishment that was equally strong when these children were 23, 29, and 35 months old. Individual differences in the levels of parenting that could not be explained by previous levels of parenting (e.g., changes in parenting), were associated with individual differences in externalizing behavior of the child. Also, the effects of parenting on children's externalizing behavior did not change, as they did not reach significance during this period. Thus, in accordance with the results of Chapter 3, we found high levels of stability in the relation between parenting and children's externalizing behavior in Chapter 4.

There was, however, also a discrepancy regarding the levels of rank-order stability found in Chapter 3 and Chapter 4. In both chapters, rank-order stability was investigated by means of autoregressive paths (i.e., paths with which a variable at an earlier point in time explains variance in the same variable at a later time point). In Chapter 4, auto-regressive coefficients were substantially lower than those found in Chapter 3. A possible explanation might be that in Chapter 4 a broader model was tested than in Chapter 3, by adding the children's externalizing behavior to the model. Doing so, the parenting dimensions were controlled for the variance that was explained by these child behaviors, leaving less variance to be explained by former levels of the parenting dimensions. Moreover, in the models tested in Chapter 4, we added additional stability paths to improve the overall fit of the model, which also may have subverted the levels of rank-order stability.

In conclusion, parenting was found to be highly stable across a 1-year period during toddlerhood (17 to 29 months). This finding tends towards the trait-effect approach: the approach that assumes parenting to be trait-like and therefore consistent and stable. However, the finding that individual changes that occur within this period are predicted by children's externalizing behavior, supports the child-effect approach: the approach that states parenting to be influenced by developing characteristics of the child. It seems that these two approaches do not exclude one another, but they are rather complementary. This can be explained by considering the determinants of parenting. According to Belsky's process model (1984), parenting is affected mostly by parental and contextual characteristics, which are generally thought to be stable (e.g., parents' personality, SES). It is

therefore not surprising that we found generally high levels of stability in parenting. However, child characteristics are also likely to determine parenting, although they are expected to contribute marginally. These changing child characteristics explain the subtle changes in parenting.

6.3 Links between parenting and toddlers' externalizing behavior

Although there is an abundance of evidence regarding the importance of parenting in the development of externalizing behaviors in children (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Maccoby, 2000), we still know little about the causality of the associations between parenting and children's externalizing behaviors, and about the unique and interactive effects of diverse parenting dimensions on children's externalizing behavior.

While many theoretical models suggest that parenting and child behavior are reciprocally related to one another, we did not find evidence for such a bidirectional relationship between parenting and children's externalizing behavior during toddlerhood (Chapter 4). We found that children's externalizing behavior affected parent's child rearing, but the reverse (i.e. parenting affecting children's externalizing behavior) was not established.

The result that child behavior affected the behavior of the parent was not unexpected. Toddlerhood is a typical developmental period, as children go through major transitions in their cognitive and behavioral repertoire. Their growing awareness of the self pushes the child to behave autonomic, and parents are challenged to discipline the child for the first time. These changes within the child and the parent are associated with lower levels of parental satisfaction and self-security (Shaw & Bell, 1993). It is therefore not surprising that elevated levels of these externalizing behaviors lead to less supportive and structured parenting, and an increase of the frequency with which parents use psychological control and physical punishment. Parents may get discouraged by their child's difficultness and are more likely to disengage from their child, which is partly expressed by lower levels of support. In addition, parents may be inclined to change their parenting behavior in order to find a strategy to deal with the externalizing behaviors of the child. As a consequence, parents become less structured in their parenting. Likewise, high levels of children's externalizing

behaviors are a source of stress, undermining parental capacities and resulting in a more frequent use of psychological control and physical punishment.

It is notable that externalizing behavior of the child influenced the behavior of the parent, but the behavior of the parent did not affect the child's externalizing behavior. As externalizing behaviors are, to a certain extent, normal in toddlerhood, individual differences in these behaviors during this period may depend more on intrinsic variability within children, such as temperamental characteristics, IQ, and specific cognitive abilities that the child is developing, than on extrinsic variables such as parental behavior. During toddlerhood, children are developing rapidly and parents have to keep up with these changes. It is therefore not surprising that it is the child who drives the parent instead of the other way around.

It is also possible that we did not find significant effects of parenting on children's externalizing behavior because the parents in the current study provide sufficiently supportive environments for children's development. It is argued that, as long as parents are 'good enough', it does not matter in which family children grow up, as ordinary differences between parents that are within a normal range have little effect on children's development (Scarr, 1992). The sample of the current study consisted of intact, well functioning, two-parent families, who showed adequate parenting (i.e., high levels of support and positive discipline, low levels of harsh punishment). Future studies should investigate whether individual differences in parenting do affect children's externalizing behavior in at-risk and clinical samples.

Another potential reason for not finding parent-effects is that the significance of parenting concerning externalizing behaviors may not manifest itself before children enter school (Scaramella & Leve, 2004). During this developmental stage, parents teach their children how to behave outside the family setting and strategies for interacting with others (i.e., other children, teachers), and this affects the child's future behavior and relationships. It is possible that the effects of parenting on children's externalizing behavior are not yet visible at this early age (17 to 35 months).

The result that specific parenting dimensions did not affect toddlers' externalizing behaviors, however, may be spurious. As various parenting behaviors co-occur and may be interrelated, the effect of one of these behaviors is the result of the entire repertoire of parental behaviors (Caron, Weiss, Harris, & Catron, 2006; Feinberg, 2003). For example, it is possible that one parenting

dimension compensates or exacerbates the consequences of another parenting dimension, which dampens the main effects of these parenting dimensions. This interplay between parenting dimensions can occur within a parent, but also between mothers and fathers. From this point of view, in Chapter 5 we examined the effects of support, psychological control and physical punishment on children's externalizing behavior, including the possibility of interactive-effects both within and between mothers and fathers. We found that maternal levels of support influenced the association between maternal physical punishment and children's externalizing behavior. A combination of high levels of physical punishment and low levels of support (like in an authoritarian parenting style) was related to higher levels of children's externalizing behavior. The reverse –a combination of low levels of physical punishment and high levels of support- was related to the lowest levels of externalizing behaviors in toddlers. In addition, we found that high levels of support attenuated the negative consequences of the use of physical punishment. However, high levels of support did not diminish the association between more frequent levels of physical punishment and children's externalizing behaviors. This suggests that when the incidence of physical punishment exceeds a critical point, support can no longer compensate.

In addition to this interactive effect between maternal support and physical punishment, we also found an interactive effect between maternal and paternal support. This interactive effect will be discussed in the following paragraph.

6.4 Mothering versus fathering

The majority of the studies that examined parenting focused either on maternal behavior, or clustered maternal and paternal behavior together, making it impossible to compare mothering and fathering. This is a notable omission, especially since it is suggested that mothering and fathering may be fundamentally different and that the associations between parenting and child behavior cannot be explained by the same model for mothers and fathers (Mackey, 1985; Popenoe, 1996). Moreover, mothers and fathers may compensate or exacerbate the effects of the other's parental behavior on child behavior. Throughout all the four empirical studies presented in the current study, we examined the differences and similarities between mothering and fathering.

As a requirement for the investigation of differences between mothering and fathering, we examined whether the questionnaires used in this thesis assessed similar constructs of parenting for mothers and fathers (i.e. measurement invariance). If the contents of parenting constructs are not similar for mothers and fathers, the finding of differences between mothering and fathering may simply reflect the fact that dissimilar phenomena were measured for mothers and fathers (Cheung & Rensvold, 2002). In Chapter 2, we tested whether the factor-structure of the 11 parenting scales the parents filled out was identical for mothers and fathers. That is, we examined whether these 11 parenting scales represented the same 5 dimensions of parenting for both mothers and fathers, and whether the factor loadings of these parenting scales were equally strong for mothers and fathers. In Chapter 3, it was investigated whether the contents of the parenting dimensions did not change across time, and were still the same for mothers and fathers at later time points. In both studies we found evidence that the constructs of the five parenting dimensions are similar for mothers and fathers, and that they are invariant across time.

Determinants of parenting. Although fathers reported lower levels of support and positive discipline, equal levels of lack of structure, psychological control, and physical punishment were found for mothers and fathers throughout toddlerhood. Individual differences in these specific dimensions of mothering and fathering were explained by common sets of parental, contextual, and child characteristics, as was shown in Chapter 2. Moreover, the effects of these characteristics were also equal for mothers and fathers. There was only one exception: whereas maternal support was influenced by the child's level of inhibitory control, paternal support was not. It is not clear why this difference occurred, and future studies are needed to examine why this association between children's inhibitory control and parental support is stronger for mothers than fathers. In Chapter 4 it was shown that the child's externalizing behavior elicited similar behavior in both mothers and fathers. That is, mothers and fathers responded to their child's externalizing behavior in a similar way by becoming less supportive and structured in their parenting and by using psychological control and physical punishment more frequently.

Stability and change in parenting. The developmental trajectories of parenting were also similar for mothers and fathers, as was shown in Chapter 3. At the

group-level support, lack of structure, and physical punishment did not change across time for mothers and fathers. In addition, both mothers and fathers reported a small but significant increase in positive discipline and psychological control. The rank-order stability was also equally strong for mothers and fathers. Likewise, similar numbers of mothers and fathers reported to increase or decrease, or to be stable in their parenting at the individual-level.

Links with children's externalizing behavior. In Chapter 4, we examined the bidirectional links between parenting and toddlers' externalizing behavior. Again, we found similarity over difference for mothering and fathering. The relationship between parenting and children's externalizing behavior was not bidirectional, neither for mothering nor for fathering. Children influenced mothering and fathering to the same extent, resulting in a similar response of mothers and fathers.

The unique and interactive effects of parental support, psychological control and physical punishment on children's externalizing behavior were examined in Chapter 5. We found that maternal parenting dimensions significantly predicted 31% of the variance in externalizing behaviors, with a unique effect of psychological control and an interactive effect of support and physical punishment. In contrast, paternal behavior did not explain a significant portion of the variance in children's externalizing behavior. This result seems to contradict the findings of Chapter 4, from which it was concluded that the associations between parenting and children's externalizing behavior were similar for mothers and fathers. However, there are some explanations for this apparently discrepancy.

First, Chapter 4 and 5 used divergent methodological designs to answer research questions that are different with respect to their contents. In Chapter 4, we used a longitudinal design to investigate the associations between the *changes* in parenting and *changes* in children's externalizing behavior. In Chapter 5, we conducted a cross-sectional study to examine how individual differences in parenting are associated to individual differences in children's externalizing behavior at *a particular moment of time*, apart from the developmental patterns of these behaviors. Thus, although at a particular moment in time maternal behavior is more strongly related to children's externalizing behavior than paternal behavior (for example, because mothers spend more time with their children), both mothers and fathers adapt their parenting behavior to their changing child to

an equal extent. The results of Chapter 4 and 5 are therefore not so much contradictory, but rather complementary.

Second, in Chapter 4 we construed separate models for each of the five parenting dimensions, whereas in Chapter 5 we included three parenting dimensions simultaneously. The reason for studying parenting dimensions simultaneously is that parenting dimensions are interrelated. Due to this interrelatedness, the association between one parenting dimension and children's behavior is, at least partly, a result of the other parenting dimensions that co-occur. These patterns of interrelatedness may be different for maternal and paternal dimensions of parenting, leading to different results regarding the associations between parenting and children's externalizing behavior for mothers and fathers.

The aforementioned results regarding mothering and fathering concerned similarities or differences between mothers and fathers. However, the current thesis also examined how mothering and fathering are related to one another and how they may interact in the prediction of child behavior. In Chapter 3, we found that changes in mothering and fathering were interrelated. If mothers (or fathers) changed in their levels of support, lack of structure or physical punishment, fathers (or mothers) were likely to change in these parenting dimensions in similar directions. This may be explained by the fact that parents are rearing the same child. As we saw in Chapter 4, mothering and fathering are equally influenced by their child's externalizing behavior. Moreover, when mothers became less structured in their parenting, fathers were likely to report an increase in the frequency with which they used psychological control. It might be that changes within the child, other than in externalizing behaviors, have differential effects on mothers and fathers. Another explanation is, that changes in the behavior of one parent leads to changes in the child's behavior, causing the other parent to change in his or her parental behavior. Future research should investigate how mothers and fathers influence each other's childrearing.

The interplay between mothering and fathering in the prediction of children's externalizing behavior was investigated in Chapter 5. Here we found that parenting of one parent moderated the association between the other parent's parenting and children's externalizing behavior. That is, paternal levels of support influenced the link between maternal support and children's externalizing behavior. High support by one parent is not sufficient to compensate for a lack of

support of the other parent. In other words, both parents need to be highly supportive to be beneficial for the child. It is noteworthy that within the context of a mother low on support, high levels of paternal support are associated with more externalizing behaviors displayed by the child. One explanation is that mothers experience higher levels of stress than fathers when their child displays moderate to high levels of behavioral problems (Baker & Heller, 1996), which undermines the parental skills of these mothers, leading to lower levels of support. Moreover, these mothers may cry for more help in dealing with their difficult child (Baker & Heller, 1996), causing fathers to become more involved and supportive in their childrearing. This line of reasoning, in which it is the children's externalizing behavior that causes low levels of maternal support and high levels of paternal support, is in accordance with the result of Chapter 4 that it is the child behavior that influences the behavior of the parent. However, prospective studies are needed to test this theory more profoundly.

6.5 Limitations, Strengths, and Future Directions

6.5.1 Limitation

The results of the present thesis should be considered in light of its limitations. First, as is noted in each of the four studies, there is the limitation of the sample. Although we had good reasons for the exclusive inclusion of parents rearing a toddler boy (e.g., homogeneity in sample to make mother-father comparisons possible), this is a notable omission of the current thesis. As is suggested by some researchers, there may be substantial differences between parents who are rearing a girl and those who are rearing a son (Aunola & Nurmi, 2005; Brook, Zheng, Whiteman, & Brook, 2001; Casas et al., 2006). Moreover, the parents in this thesis were middle to highly educated and lived in intact families. Focusing on such a homogeneous, normative sample may be the reason why the variations in the parenting dimensions were limited. It is important to keep this in mind when interpreting the results of this thesis. That is, none of the parents reported really high levels of lack of structure, psychological control, or physical punishment. In addition, there were no parents reporting really low levels of support or positive discipline.

In addition, it is not clear to what extent the results of these studies can be generalized to parents in other situations, such as divorced parents, families low

on SES, or belonging to a clinical group. Future studies are required to examine to what extent the results of the current thesis can be generalized to the parent-daughter relationships and families in different situations, such as one-parent families, step-families, at-risk families, low SES families, and parents of children who display clinical levels of externalizing behaviors.

Another limitation is the reliance on self-reports. Again, we had good reasons for using this method, as parents are in a unique position to report about their own behavior in a variety of situations and these self-reports repeatedly have been found to be associated to children's behavior. However, self-reports are likely to suffer from the influence of social desirability (O'Connor, 2002). Moreover, as all data were obtained by self-reports, the associations between two or more variables can be overestimated due to shared method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). It is therefore important that prospective studies should use multi-method procedures and multi-informants to gain data of parenting and children's behavior.

The size of the sample is also a limitation of the current study. Although it has been suggested that a sample consisting of 100 participants is sufficiently for using structural equation modeling (Kline, 2005), it should be noted that this is the lower limit to perform such analyses. It may be that, due to this small sample size, we did not have enough statistical power to detect effects of parenting on child behavior, or to identify longitudinal changes of differences between mothers and fathers. This, however, strengthens our confidence in the time- and gender-differences that were found.

The fourth limitation of this thesis is the use of correlational data. Even in longitudinal studies, such as presented in Chapter 4, such data cannot fully resolve the issue of cause and effect. Although these longitudinal studies comply with the temporal requirement of causality (i.e., that one variable precedes the other variable), such data does not eliminate the possibility that there is a third, unknown variable that caused the change in the other variable. Future studies should overcome this problem of causality by conducting experimental studies, such as intervention studies.

Another limitation is the time frame used in this thesis. In the present studies, we examined parenting and child behavior when the children were of similar age. In addition, all the families were visited with a 6-months interval, when the children were 17, 23, 29, and 35 months of age. Although it is helpful to equate a time frame when studying development, such strategy assumes that time has an

equal effect on all the participating parents and children. That is, it assumes that at particular ages, children and parents of a sample have reached similar developmental stages. Moreover, this strategy assumes that the behaviors of parents and children develop with the same rate. However, it is more realistic that developmental stages are only partly determined by age (e.g., some children are able to walk at an earlier point in time than other children). And it is also more realistic that parental behavior, child behavior, and parent-child relationships do not develop synchronically: the set-off points of specific behaviors may differ as well as the speed with which these behaviors develop. By studying all the families at a 6-months interval, we might have missed such individual differences in development. Future studies should not only examine chronological age as an indicator of development, but should also pay attention to other indicators that refer to development, such as cognitive and biological development (Scholte, Van Lieshout, & Meertens, 2001).

A final limitation of this thesis, which is also an important guide for future studies, is the content of the questionnaires that were used to measure parenting. The items of the questionnaires we used, presented a specific parenting situation and asked how often the parents reacted in a particular way in this specific situation. For example, it was asked how often parents responded to their child's misbehavior by using physical punishment. These questionnaires inform us in what way parents are inclined to react in certain circumstances. However, they do not tell us how often this situation actually has taken place. This leaves important questions unanswered. For instance, we know from the current thesis that mothers and fathers are inclined to react in a similar way in particular situations, but we do not know how often mothers and fathers find themselves in these situations. Future studies should not only collect information about the inclination to certain parenting behavior in specific situations, but also about the frequencies with which parents find themselves within these situations.

6.5.2 Strengths

Besides these limitations, some strengths of the current thesis are worth mentioning. One of the strengths of this thesis is that we tested the measurement invariance of mothering and fathering. When comparing the behavior of two groups of individuals (in this case the group of mothers and the group of fathers), it is important to be sure that the contents of this behavioral construct are similar (i.e., measurement invariant) for both groups. If the content of a behavioral

construct is not invariant across groups, then the differences found between these groups might be ambiguous, since it might simply be that different constructs have been measured (Cheung & Rensvold, 2002). Despite the critical importance of measurement invariance, it is often assumed that similar constructs have been measured, without actually testing this. In this thesis we tested this measurement invariance across mothers and fathers (Chapter 2 & 3) and across time (Chapter 3), and we found that the contents of the five parenting dimensions were similar for mothers and fathers and across time. Thus, we can unambiguously interpret the similarities and differences found between mothering and fathering. It is important that future studies concerned with comparisons between mothering and fathering test for this measurement invariance.

Another strength of this thesis is that we examined maternal and paternal behavior within the same model. The results of Chapter 5 with regard to the interactive effects between mothering and fathering suggest that child development cannot be understood in terms of separate parent-child relationships, but rather should be illuminated from a family-system perspective. Future studies should investigate family-level processes more thoroughly, for example by observing triadic interactions between children and their two parents.

The inclusion of a broad range of parenting dimensions is also a strength of the current thesis, as it was shown that there is significant distinction between these parenting dimensions. First, the five parenting dimensions distinguished in the current thesis are all determined by different sets of parental, contextual, and child characteristics. Second, by considering parenting dimensions instead of parenting styles, we were able to investigate the unique and interactive effects of these parenting dimensions. Therefore, the second recommendation for future studies is to use measures of parenting dimensions as an alternative of parenting styles. However, there is no definitive, all-encompassing way to define and conceptualize parenting (O'Connor, 2002). Although we included a broad range of parenting dimensions throughout this thesis, our conceptualization of parenting is not exhaustive. For example, the aspect of parental play and monitoring were neglected.

In Chapter 3, we examined the development of parenting both at the group-level and the individual level. We showed that results at the group-level do not necessarily correspond with results obtained at the individual level. For example although at the group-level we found an increase in the frequencies with which parents use positive discipline and psychological control, the majority of

individual parents did not show an actual change in these parenting dimensions. Future studies should examine changes in parenting both at the group- and at the individual level to provide a fuller picture of the developmental character of parenting.

6.6 General Conclusion

The current thesis was concerned with parenting during toddlerhood. Within four empirical studies we examined the determinants of parenting, the extent to which parenting is stable and developing, and the links between parenting and children's externalizing behavior. Maternal and paternal behavior was determined by common parental, contextual, and child characteristics and these characteristics influenced mothering and fathering to a similar extent. In general, parental characteristics were the most important determinants, followed by contextual characteristics. The child characteristics contributed least to parenting. That is, temperamental features of the child had a restricted influence on parenting. Children's externalizing behaviors, on the other hand, seemed more important in the prediction of parenting, as these behaviors influenced a broader range of parenting dimensions. The levels of parenting were fairly stable throughout toddlerhood for both mothers and fathers, although there was a small group of parents who reported distinct developmental patterns. Nevertheless, the stability in parenting was not perfect as parents displayed subtle changes in their parenting. These changes could partly be explained by changes in the child's level of externalizing behaviors. Increasing (or decreasing) levels of externalizing behaviors displayed by the child elicited decreases (or increases) in supportive and structured parenting, and eventuated in increased (or decreased) levels of psychological control and physical punishment. Individual changes in one parenting dimension were likely to be accompanied by changes in other parenting dimensions. Moreover, if one parent reported changes in support, lack of structure, or psychological control, the other parent was likely to change along in these parenting dimensions. The fact that parenting dimensions were interrelated within and between parents, as was demonstrated by the links between changes in parenting dimensions, made it more complex to understand the associations between parenting and children's externalizing behavior. First, although paternal psychological control was significantly associated with children's externalizing

behavior, this association was not unique as it did not explain variance in children's externalizing behavior above and beyond maternal behavior. Second, the association between maternal physical punishment and children's externalizing behavior was partly the result of her levels of support. That is, maternal support weakened the negative consequences of her use of physical punishment. However, if mothers used physical punishment on a frequent base, her levels of support could no longer compensate for the consequences of this harsh punishment tactic. Third, paternal support moderated the association between maternal support and children's externalizing behavior, suggesting that high levels of support of *both* parents are needed to be beneficial for the child.

7 References

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8 Summary

The primary function of parenting is attention and action towards the child. It is therefore not strange that the lion part of studies on parenting are concerned with the question how individual differences in parenting are predictive of children's developmental outcomes. Less attention has been given to parenting itself. In the current thesis, parenting was studied throughout a period that is marked by many challenges for children and their parents: toddlerhood. Four general themes were the guidelines in this thesis: 1) the determinants of parenting, 2) the stability and change in parenting, 3) the links between parenting and children's externalizing behavior, and 4) the comparison of maternal and paternal behavior regarding these determinants, stability, and links with the child's externalizing behavior.

The four general themes were investigated within 111 two-parent families with a toddler-son. These families were followed for a period of 18 months, when the children were approximately 17, 23, 29, and 35 months old. Parents provided information regarding their own characteristics, the characteristics and behavior of their child, and the contextual characteristics of the family (e.g. SES, marital satisfaction). In addition, mothers and fathers filled out questionnaires about a broad range of parental behaviors. A confirmatory factor analysis (Chapter 2 & 3) showed that this range of parenting behaviors reflected 5 dimensions of parenting: support, lack of structure, positive discipline, psychological control, and physical punishment. Moreover, it was shown that these 5 parenting dimensions were measured invariant across mothers and fathers, indicating that similar constructs of maternal and paternal parenting were assessed and that comparisons between maternal and paternal parenting could be made.

Chapter 1 presented the theoretical background of each of the four general themes of this thesis. In addition, the design of the study was briefly described, as well as the considerations for certain methodological and practical choices. Also, an overview of the subsequent chapters was provided.

Chapter 2 presented a cross-sectional study that examined the contributions of parental, contextual, and child characteristics to the five previously mentioned

dimensions of parenting when the children were 17 months old. In general, maternal and paternal dimensions were influenced by similar sets of characteristics. Parents who were high on agreeableness, who were high on emotional stability, and who were high on conscientious were more supportive and structured in their parenting and used positive discipline more frequently than parents who were low on these traits. Parents low on self-control reported a more frequent use of psychological control and physical punishment. Parents who were satisfied with their marriage were more supportive and structured in their parenting and used positive discipline more often than parents who were not satisfied with their marriage. Parents low on SES reported a more frequent use of physical punishment than parents high on SES. Concerning the child characteristics it was found that children high on inhibitory control evoked higher levels of support, but only in their mothers. Highly active children provoked higher levels of psychological control of both parents. Children with better language abilities induced higher levels of positive discipline in mothers and fathers.

The study in *Chapter 3* examined the development of parenting when the children were 17, 23, and 29 months old. Different forms of stability were examined and the five parenting dimensions were found to be fairly stable for both mothers and fathers. First, all five parenting dimensions were measured invariant over time and across mothers and fathers. Thus, the meaning of the parenting constructs did not change, which allowed longitudinal comparisons. As a group, the parents of the current study did not change in their levels of support, lack of structure, and physical punishment. The levels of positive discipline and psychological control increased during this period, but these increases were very small. Also the rank ordering of the parents was fairly stable for all five parenting dimensions. Parents who were high on a specific parenting dimension relative to the other parents, stayed high on this parenting dimension at later points in time. Despite these high levels of stability, small but significant percentages of parents did change in their levels of structure, positive discipline, psychological control, and physical punishment. Thus, parenting was fairly stable, but this stability was not perfect, as some parents report reliable changes in their parenting. Moreover, changes in parenting were interrelated both within and between parents. Parents who changed in their support also changed in their levels of positive discipline and structure. Changes in the levels of support, lack of structure, and physical punishment in one of the parents were interrelated to similar changes in these

behaviors of the other parent. In addition, when mothers became less structured in their parenting, fathers were likely to report an increase in their levels of psychological control.

Chapter 4 presented a longitudinal study in which the bidirectional associations between the five parenting dimensions and children's externalizing behavior was examined when the children were approximately 17, 23, 29, and 35 months. Results indicated that the behavior of the child influenced the behavior of the parent, but not vice versa. Increases (or decreases) in the child's level of externalizing behavior led to decreases (or increases) in parental support and structure, and to increases (or decreases) of parental psychological control and physical punishment. These effects of child behavior on parenting were equally strong when the children were 23, 29, and 35 months old. In addition, these effects were similar for mothers and fathers. The child's externalizing behavior influenced mothering and fathering to the same extent, resulting in a similar response of mothers and fathers to their changing child.

Chapter 5 presented a cross-sectional study that examined the unique and interactive effects of maternal and paternal support, psychological control, and physical punishment on toddlers' externalizing behavior when the children were 35 months old. It was found that maternal psychological control was uniquely related to children's externalizing behavior. That is, higher levels of maternal psychological control were associated with higher levels of children's externalizing behavior. In addition, it was shown that low levels of maternal support combined with high levels of maternal physical punishment were related to higher levels of externalizing behavior. Paternal support moderated the association between maternal support and children's externalizing behavior, suggesting that high levels of support of *both* parents are needed to be beneficial for the child.

Chapter 6 presented a discussion of the results obtained in the previous chapters. By taking the four studies together, the main aims of the thesis were put in a broader perspective. It was concluded that generally the determinants, stability, and consequences of parenting are similar for mothers and fathers. Individual differences in parenting are partially the result of the parents' personality, the context of the parent-child relationship, and the characteristics of the child. In general, parents do not change their way of parenting. However, when parents do change, this can be partially explained by changes in the behavior of the child. When examining the relations between parenting and child

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behavior, it is important to study various parenting dimensions concurrently, as it may be that the relation between a particular parenting dimension and child behavior is influenced by other parenting dimensions.

9 Samenvatting

Opvoedkundig gedrag kenmerkt zich primair door de directe gerichtheid op het kind. Het is daarom niet vreemd dat het merendeel van de studies die zich bezighouden met opvoeden zich richt op de gevolgen die individuele verschillen in opvoedkundig gedrag hebben voor de ontwikkelingsuitkomsten van het kind. Minder aandacht is besteed aan opvoedkundig gedrag op zichzelf. Deze dissertatie is een samenbundeling van studies die het opvoedkundige gedrag hebben bestudeerd gedurende een periode die gekenmerkt wordt door vele uitdagingen voor zowel het kind als de ouder: de peutertijd. Vier algemene thema's vormen de leidraden voor deze dissertatie: 1) de determinanten van opvoedkundig gedrag, 2) de stabiliteit van en veranderingen in opvoedkundig gedrag, 3) de relaties tussen opvoedkundig gedrag en het externaliserende gedrag van het kind, en 4) de vergelijking tussen het opvoedkundig gedrag van vaders en moeders wat betreft deze determinanten, stabiliteit, en relaties met het externaliserende gedrag van het kind.

De vier algemene thema's zijn onderzocht bij 111 twee-ouder gezinnen met een zoon in de peuterleeftijd. Deze gezinnen zijn 18 maanden lang gevolgd toen de kinderen ongeveer 17, 23, 29, en 35 maanden oud waren. Ouders hebben informatie verschaft over hun persoonlijke karakteristieken, over de karakteristieken en het gedrag van hun zoon, en over de kenmerken van de context van het gezin (o.a. SES en huwelijkstevredenheid). Daarnaast hebben vaders en moeders vragenlijsten ingevuld over een verscheidenheid aan opvoedkundige gedragingen. Een confirmatieve factor analyse (Hoofdstuk 2 & 3) toonde aan dat deze verscheidenheid aan opvoedkundige gedragingen 5 opvoedingsdimensies representeerden: ondersteuning, gebrek aan structuur, positieve disciplineren, psychologische controle en fysieke straf. Bovendien is aangetoond dat deze 5 opvoedingsdimensies invariant gemeten zijn voor vaders en moeders. Dat wil zeggen dat dezelfde opvoedingsconstructen gemeten zijn voor vaders en moeders en dat het daarom mogelijk is om het opvoedkundige gedrag van vaders en moeders met elkaar te vergelijken.

In *Hoofdstuk 1* is de theoretische achtergrond voor ieder van de vier algemene thema's van de dissertatie gegeven. Er is een overzicht gegeven van het onderzoeksdesign van de studie en de overwegingen waarmee bepaalde methodologische keuzes zijn gemaakt. Dit eerste hoofdstuk werd afgesloten met een uiteenzetting van de structuur van de dissertatie.

Hoofdstuk 2 beschrijft een cross-sectionele studie waarin werd onderzocht of de karakteristieken van de ouder, van de context van het gezin, en de karakteristieken van het kind bijdragen aan individuele verschillen in de 5 opvoedingsdimensies toen het kind 17 maanden oud was. De effecten die deze karakteristieken hebben op opvoedkundig gedrag bleken hetzelfde te zijn voor vaders en moeders. Ouders die hoog scoorden op de persoonlijkheidskenmerken vriendelijkheid, emotionele stabiliteit en consciëntie waren meer ondersteunend en gestructureerd in hun opvoeding en maakten frequenter gebruik van positieve disciplinerings technieken in vergelijking tot ouders die laag scoorden op deze persoonlijkheidskenmerken. Ouders met een lage mate van zelfcontrole gaven aan vaker gebruik te maken van psychologische controle en fysieke straf. Daarnaast werd gevonden dat ouders die tevreden zijn met hun huwelijk meer ondersteunend en gestructureerd zijn in hun opvoeding en vaker positieve disciplinerings technieken toepassen dan ouders die minder tevreden zijn met hun huwelijk. Ouders met een lage sociaal-economische status bleken vaker fysieke straf toe te passen dan ouders met een hoge sociaal-economische status. Wat betreft de karakteristieken van het kind lieten de resultaten zien dat kinderen die hoog scoren op inhibitiecontrole meer ondersteuning kregen van hun moeder, maar dit gold niet voor de ondersteuning van vader. Ouders van kinderen die erg actief waren, pasten vaker psychologische controle toe. Kinderen met een beter ontwikkelde taalvaardigheid werden vaker positief gedisciplineerd.

De studie die beschreven is in *Hoofdstuk 3* onderzocht de ontwikkeling van opvoeding op de momenten dat de kinderen 17, 23, en 29 maanden oud waren. Verschillende vormen van stabiliteit werden getoetst en de resultaten lieten zien dat het opvoedkundige gedrag van zowel vaders als moeders behoorlijk stabiel was gedurende deze periode. Allereerst werd aangetoond dat voor zowel vaders als moeders de 5 opvoedingsdimensies invariant gemeten zijn op de drie tijdstippen. Dat wil zeggen dat de betekenissen van de opvoedingsconstructen niet veranderden en dat het mogelijk is om longitudinale vergelijkingen te maken. Op groepsniveau bleken de ouders die deelnamen aan deze studie niet te veranderen in hun niveaus van ondersteuning, gebrek aan structuur en fysieke straf. Wel

bleken de frequenties waarmee ouders positieve disciplineren en psychologische controle toepasten toe te nemen, maar deze toenames waren erg klein. Ook werd duidelijk dat de rangorde van de individuele ouders binnen de groep niet sterk veranderde over de tijd heen. Dit gold voor alle vijf opvoedingsdimensies. Met andere woorden, wanneer een ouder hoog scoorde op een bepaalde opvoedingsdimensie in vergelijking tot de andere ouders in de groep, dan had deze ouder ook op latere tijdstippen een van de hoogste scores op deze opvoedingdimensie. Ondanks deze stabiliteit waren er toch kleine, maar substantiële, groepjes ouders die aangaven wél veranderd te zijn in hun niveaus van structuur, positieve disciplineren, psychologische controle, en fysieke straf. Ook bleek dat veranderingen in opvoedingsdimensies aan elkaar gerelateerd waren, zowel binnen als tussen ouders. Binnen ouders ging een toename in ondersteuning gepaard met een toename in gestructureerdheid en de toepassing van positieve discipline. Daarnaast bleek dat wanneer een van de ouders veranderde in ondersteuning, structuur, en fysieke straf, de andere ouder ook een verandering liet zien in deze opvoedingsdimensies in dezelfde richting. Tevens bleek dat wanneer moeders veranderden in gestructureerdheid, de vaders veranderden in de frequentie waarmee zij psychologische controle toepasten.

Hoofdstuk 4 bevat een longitudinale studie waarbij de wederkerige relaties tussen de 5 opvoedingsdimensies en het externaliserende gedrag van het kind werden onderzocht wanneer de kinderen 17, 23, 29, en 35 maanden oud waren. De resultaten lieten zien dat het gedrag van het kind wel het opvoedkundige gedrag van de ouders beïnvloedde, maar dat het omgekeerde niet bleek op te gaan. Een toename (of afname) van het externaliserende gedrag van het kind leidde tot een afname (of toename) van ouderlijke ondersteuning en structuur en tot een toename (of afname) van ouderlijke psychologische controle en fysieke straf. Deze effecten van het gedrag van het kind op het opvoedkundige gedrag van de ouders bleken even sterk te zijn op de momenten dat het kind 23, 29, en 35 maanden oud was. Bovendien werd duidelijk dat het opvoedkundige gedrag van zowel vaders als moeders op een zelfde manier beïnvloed werden. Dat wil zeggen dat het opvoedkundige gedrag van vaders en moeders op een zelfde manier veranderden in reactie op het veranderende kind.

In *Hoofdstuk 5* is een cross-sectioneel onderzoek beschreven dat de unieke en interactie-effecten van moederlijke en vaderlijke ondersteuning, psychologische controle en fysieke straf op het externaliserende gedrag van het kind onderzocht toen het kind 35 maanden oud was. Psychologische controle toegepast door

moeder bleek een uniek effect te hebben op het externaliserende gedrag van het kind. Kinderen van moeders die vaker psychologische controle toepasten, lieten hogere niveaus van externaliserend gedrag zien. Ook kinderen van moeders die een lage mate van ondersteuning combineerden met een frequent gebruik van fysieke straf bleken meer externaliserend gedrag te vertonen. Het opvoedkundige gedrag van vader bleek geen uniek effect te hebben op het externaliserende gedrag van het kind. Wel werd aangetoond dat een hoge mate van ondersteuning van de ene ouder niet kon compenseren voor een gebrek aan ondersteuning door de andere ouder.

In *Hoofdstuk 6* zijn de resultaten uit de voorgaande hoofdstukken bediscussieerd. Door de vier studies samen te nemen werden de vier algemene thema's van de dissertatie in een breder perspectief besproken. Er werd geconcludeerd dat er geen verschillen tussen vaders en moeders zijn wat betreft de determinanten, stabiliteit, en gevolgen van opvoedkundig gedrag. De manier waarop een ouder opvoedt, hangt deels af van de persoonlijkheid van de ouder, de omgeving, en de kenmerken van het kind. Over het algemeen veranderen ouders hun opvoedkundige gedrag niet, maar als ze wel veranderen dan is dit deels te verklaren door veranderingen in het gedrag van het kind. Wanneer de relaties tussen opvoeding en het gedrag van het kind worden bestudeerd, is het belangrijk om gelijktijdig naar verschillende opvoedingsdimensies te kijken. Dit omdat de relatie tussen een specifieke opvoedingsdimensie en het gedrag van het kind beïnvloedt kan worden door een andere opvoedingsdimensie.

Dankwoord

Een woord van dank ten overstaan van alle mensen die mij bij de totstandkoming van dit proefschrift hebben geholpen kan natuurlijk niet ontbreken. Maar waar te beginnen? Zonder promotoren zou er geen onderzoeksvoorstel en dus geen vacature voor een AiO geweest zijn. Maar zonder bereidwillige gezinnen zou er geen onderzoek plaats hebben kunnen vinden. Zonder hulp van studenten, zou de deadline van het onderzoek wellicht nooit gehaald zijn. En zonder collega's was het maar een saaie boel geworden...

Goed, beginnen bij het begin dan maar. Allereerst zou ik mijn promotoren willen bedanken. Het komt niet vaak voor dat je als AiO begeleid wordt door maar liefst drie hoogleraren. Wat een luxe! Wat een bronnen van kennis en ervaring om uit te putten! Marianne, ik wil je graag bedanken voor je vertrouwen in mijn capaciteiten als wetenschapper en voor de zelfstandigheid die je me hebt geboden bij het uitvoeren van het onderzoek. Maja, als ik weer eens vast zat met bepaalde analyses (die keken naar én verschillende opvoedingsdimensies, én vaders versus moeders, én dan soms ook nog naar verschillen over tijd) wist jij me weer op het juiste spoor te zetten. Ik heb erg veel geleerd van je scherpe geest en de inhoudelijke discussies die we hebben gevoerd! Marcel, bedankt voor je vaak nuchtere blik op dingen. Heel prettig, hoe je een review waarin termen als "piss on other readers" en "I would bet dollars to donuts" stonden wist te waarderen als een zeer goede, opbouwende revisie (ik denk dat je nu nog steeds niet helemaal begrijpt waarom ik in eerste instantie nogal ondersteboven was van het commentaar van deze reviewer).

Chantal, jij volgt direct op de bovenstaande genoemde promotoren. Want mijn promotietraject was niet alleen bijzonder vanwege de unieke begeleiding, maar ook vanwege het feit dat ik dit hele traject samen met jou heb mogen doormaken. Samen zijn we begonnen als AiO's aan dit project: jij vanuit Utrecht, ik vanuit Amsterdam. Ik weet nog goed dat we elkaar voor het eerst ontmoetten. Ik was daarvoor wel ietwat zenuwachtig. Stel je voor dat het niet zou klikken tussen ons... Maar al snel bleek dat onze neuzen dezelfde richting in wezen, dat we een

soortgelijke manier van werken hebben en dat onze ideeën met betrekking tot het uit te voeren onderzoek met elkaar overeen kwamen. Ik heb onze samenwerking altijd als zeer prettig ervaren! De tussentijdse telefoongesprekjes en e-mailtjes waren een welkome afwisseling van de dagelijkse bezigheden. Gelukkig hebben ze in Australië ook gewoon e-mail en kan ik op de hoogte gehouden worden van alle gebeurtenissen rondom de afronding van je promotie, over ons project dat nu voortgezet gaat worden, en natuurlijk van alle andere zaken die niet onbesproken kunnen blijven. We houden contact!

Alle gezinnen en kindjes die deel hebben genomen aan ons project: hartelijk dank voor jullie trouwe medewerking!! Het is ongekend dat van de 117 gezinnen er uiteindelijk slechts 4 gezinnen zijn afgevallen! En ik ervaar het ook als een compliment dat, 12 maanden na het laatste contact dat wij met jullie gehad hebben, er nog steeds trouw verhuisberichten worden gestuurd. Dat is voor mij een teken dat jullie het leuk vonden om deel te nemen!

Natuurlijk wil ik ook alle student-assistenten en scriptie-studenten bedanken voor al hun inzet. Zonder jullie was de deadline voor het proefschrift nooit gehaald. Bedankt!!

Ook wil ik graag de collega's van de afdeling Pedagogiek & Onderwijskunde van de UvA bedanken voor hun interesse in mijn onderzoek en bovendien de prettige sfeer op de werkvloer. Meiden van het zogenaamde "vaste AiO-groepje", jullie wil ik bedanken voor de gezellige lunches die verorberd zijn aan de Amstel, de Sint- en kerstlunches, de etentjes en vooral voor het feit dat ik altijd mijn ei bij jullie kwijt kon.

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Een andere collega die ik graag bij naam wil noemen in mijn dankwoord is Reinoud Stoel. Reinoud, ik wil je bedanken voor je inzicht en hulp bij de statistische procedures van mijn artikelen. Vaders en moeders binnen eenzelfde

gezin bestuderen heeft voordelen: twee groepen kunnen niet homogener zijn dan wanneer zij dezelfde achtergrondvariabelen delen. Het nadeel is echter dat deze twee groepen niet onafhankelijk van elkaar zijn, wat bij methodologen – en inmiddels ook bij mij- belletjes doet rinkelen. SEM biedt de uitkomst, zoals in 3 hoofdstukken van dit proefschrift te lezen valt. Maar zulke modellen kunnen behoorlijk ingewikkeld en uitgebreid worden wanneer het om gezinsdata gaat. En toch is dat gelukt, mede dankzij jouw hulp.

En dan de achterban. Lieve papa en mama, zonder jullie was ik nooit gekomen waar ik nu ben. Ik wil jullie bedanken voor het feit dat jullie mij mijn eigen weg hebben laten gaan en me daarbij altijd hebben gesteund. En ook nu staan jullie altijd voor mij klaar. Bedankt!!

Lieve Frans. Tja, sta je toch aan het einde van die lange rij mensen die ik bedank. Maar je weet dat degene die het laatst wordt genoemd vaak de belangrijkste is en in dit geval is dat zeker waar! Door dik en dun heb je me gesteund en je hebt altijd je rotsvaste vertrouwen in mij laten blijken. Je gaat nu zelfs met me mee naar de andere kant van de wereld! Een grotere steun en toeverlaat kan ik mij niet wensen. Ik kijk uit naar de avonturen die ons nog te wachten staan!

CURRICULUM VITAE

Marjolein Verhoeven was born on July 24th, 1980, in Tilburg. After completing secondary school in 1998, she studied Psychology at the Radboud University of Nijmegen. She obtained her Masters degree in Developmental Psychology in 2003. Subsequently, she entered the PhD-program at the Department of Educational Sciences at the University of Amsterdam. From 2003 to 2007 she worked on her PhD-project, which was conducted in close collaboration with the Department of Developmental Psychology at Utrecht University. In 2007, Marjolein visited the Winnicot Research Unit at the University of Reading (UK) for three months. In January 2008 Marjolein Verhoeven will start as a post-doc fellow at Macquarie University (Sydney, Australia) where she will work on a longitudinal project that studies the determinants and developmental courses of depression in adolescence.