

Parenting, Coparenting, and Effortful Control in Preschoolers

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This study investigated the relations among parenting, coparenting, and effortful control in preschoolers. The sample included 89 families with 2 parents and their firstborn 36-month-old children. Information was obtained by means of observation and parent-report questionnaires. In general, maternal parenting, paternal parenting, and coparenting were related to effortful control. Effortful control was more strongly predicted from parenting and coparenting when the same measurement method (observation or parent reports) was used. For both observation and parent reports, coparenting contributed to effortful control over and above maternal and paternal parenting. The results indicate the importance of adding indicators of triadic family processes to the study of parenting and young children's effortful control.

Keywords: parenting, coparenting, family processes, effortful control, preschoolers

Effortful control, the self-regulatory aspect of temperament, affects behavioral and emotional adjustment in childhood, adolescence, and adulthood (Eisenberg, Sadovsky, et al., 2005; Kochanska & Knaack, 2003). Effortful control can be defined as “the ability to suppress a dominant response to perform a subdominant response” (Rothbart & Bates, 1998). Although effortful control is involved in several aspects of functioning, including cognitive, social, emotional, motor, and behavioral functioning, it was found to reflect a highly coherent underlying broad competence (Kochanska, Murray, & Harlan, 2000; Murray & Kochanska, 2002). It can be distinguished from emotion regulation through emphasis of these diverse aspects of functioning, whereas emotion regulation is mainly based on affective aspects. The additional ability to perform a subdominant response requires extra effort, which distinguishes effortful control from other constructs of self-regulation, such as delay of gratification and inhibition, that refer only to the suppression of a dominant response.

Effortful control starts to develop late in infancy and continues to develop throughout the early years (Rothbart, Ellis, & Posner, 2004). As the child develops, reactive forms of regulation are supplemented by an increasing capacity for voluntary or effortful forms of control and emerge as attentional mechanisms become fully developed (Eisenberg et al., 2004). This study focuses on effortful control of children who are 3 years old. At this age, most children have developed the capacity to overcome reactive

responses, but there is considerable interindividual variation in the exercise of effortful control (Kochanska et al., 2000).

Although effortful control has constitutional origins, the development of effortful control is part of the socialization process, during which children can learn to control their emotional and behavioral impulses and to show more socially acceptable behaviors (Eisenberg, Zhou, et al., 2005; Kochanska et al., 2000; Kopp, 1982). Behavior becomes internally, rather than externally, regulated (Kochanska, Coy, & Murray, 2001). Several studies have indeed shown that parents play an important role in this process by guiding, modeling, and correcting their children's behavior (Eiden, Edwards, & Leonard, 2004; Gartstein & Fagot, 2003; Kochanska & Knaack, 2003; Kochanska et al., 2000; Olson, Sameroff, Kerr, Lopez, & Wellman, 2005). A recently conducted meta-analysis on the association between parenting and self-regulation in preschoolers (Karreman, van Tuijl, van Aken, & Deković, 2006) showed, however, that the strength of this association depends on which aspect of parenting is assessed, with a somewhat stronger association found when controlling, rather than supportive, aspects of parenting are assessed. Unfortunately, most of the studies focused on only one aspect of parenting.

In the present study, we examined a broad range of parenting behaviors grouped into three dimensions, namely, positive control, negative control, and responsiveness/warmth. Positive control refers to parental behavior meant to guide the child's behavior, for instance, setting limits, teaching, and providing structure. Negative control consists of power-assertive techniques to control the child's behavior, such as verbal and physical punishment and intrusiveness. Responsiveness and warmth refer to affective, accepting, and responsive behavior shown toward the child. Positive control and responsiveness/warmth are expected to be positively associated with effortful control, because parents who use positive control to guide their child or parents who show warm, accepting behavior toward their child may create an interactive context in which the child feels com-

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fortable; such a context promotes internalization and thus fosters effortful control (Kochanska et al., 2000). In contrast, negative control may undermine the emerging internalization of the child (Kochanska & Knaack, 2003) and is therefore expected to be negatively associated with effortful control. Or, children who behave in a self-regulatory way may elicit parental guidance and responsiveness, whereas children who have a low level of effortful control can force parents to enhance their power assertion (Kochanska & Aksan, 1995).

Another shortcoming of the research in this field identified by the meta-analysis on parenting and self-regulation (Karreman et al., 2006) concerns the lack of information on the role of fathers. Most studies on parenting still focus on mothers (Park, Belsky, Putnam, & Crnic, 1997). Nowadays, however, fathers have a greater role in the parenting of children, especially in dual-earner families (Pleck, 1997). Furthermore, fathers spend a greater proportion of the time available for interaction in play activities than do mothers (Parke, 2002). The studies on preschoolers' effortful control also found relations with paternal parenting (Eiden et al., 2004; Gartstein & Fagot, 2003). Some other researchers have demonstrated relations between paternal parenting and preschoolers' inhibition (e.g., Belsky, Rha, & Park, 2000; Park et al., 1997). The results highlight the importance of including paternal parenting in the study of child self-regulation. The current study expands existing literature by examining the prediction of effortful control by paternal parenting behaviors above contributions of maternal parenting behaviors. We expect that paternal parenting is associated with child effortful control in a way similar to maternal parenting. Moreover, we expect that maternal and paternal parenting make independent contributions to child effortful control.

Mother and father do not operate in isolation but together form an important subsystem within the family. According to a family systems perspective, it is important to study different family subsystems and relations among these subsystems (Margolin, Gordis, & John, 2001; Minuchin, 1985). Increasing evidence suggests that the way in which parents coordinate their efforts and support each other when raising their child (i.e., coparenting) contributes to children's developmental outcomes (McHale, 1997; McHale, Kuersten-Hogan, Lauretti, & Rasmussen, 2000). Coparenting should be distinguished from the marital relationship, as it represents the partners' bond as parents and focuses on the (triadic) family system instead of the dyadic system (Gable, Belsky, & Crnic, 1992). Coparenting includes supportive and hostile-competitive dimensions, as well as discrepancies between partners in parent-child warmth and investment (McHale, 1997; Schoppe, Mangelsdorf, & Frosch, 2001). High levels of undermining coparenting (e.g., hostility-competitiveness, child-rearing disagreements) and low levels of supportive coparenting (e.g., family harmony) have been found to be associated with behavioral problems and peer relationships in preschoolers (Katz & Low, 2004; McHale & Rasmussen, 1998; Schoppe et al., 2001).

Most studies have examined coparenting as a determinant of children's socioemotional functioning but not as a con-

tributor to basic processes, such as effortful control, that are assumed to underlie this functioning. However, supportive coparenting promotes a sense of family-level security (McHale & Rasmussen, 1998) and may foster internalization and effortful control. By showing undermining coparenting, parents model negative negotiation patterns in the family context and express inconsistent environmental cues, which may cause children to learn to internalize standards. Furthermore, low levels of family support and harmony and high levels of hostile-competitive coparenting are likely to cause uncertainty in the child (McHale, Kuersten, & Lauretti, 1996; McHale & Rasmussen, 1998). For example, the child can become uncertain when a parent undermines the individual parenting practices of the other parent by criticizing the partner's response to the child's behavior or by reacting differently to the child. According to the emotional security hypothesis, parental conflict induces negative emotional arousal in children, which is a central indicator of emotional insecurity (Davies & Cummings, 1994). As a consequence, heightened negative emotional arousal may interfere with children's abilities to modulate emotions and behaviors effectively.

Studies that included both parenting and coparenting as predictors of children's self-regulation found that coparenting provides additional information about aspects of family functioning relevant for developmental outcomes of children that is not captured by information on what either parent does individually. McHale et al. (1996) found that coparenting processes (interparental cooperation and positive feelings among parents) accounted for variations in children's positive affect during performance in frustration-tolerance tasks, even after they controlled for maternal warmth. Belsky, Putnam, and Crnic (1996) found that, after they controlled for parenting behavior, observed coparenting was a predictor of toddlers' observed behavioral inhibition. Parenting may also mediate the association between coparenting and effortful control. However, previous research did not find support for parenting's mediating the association between coparenting and child outcomes (Caldera & Lindsey, 2006). Studies that examined the relation between coparenting and parenting have furthermore found only low-to-modest associations (Margolin et al., 2001; McHale et al., 2000). These findings suggest that both parenting and coparenting provide an independent contribution to child effortful control and that inclusion of coparenting in the developmental model of effortful control could increase our understanding of its origins. Given the scarcity of studies that examined this issue and the fact that, in most studies, only maternal data were available, a replication of these findings is needed before firm conclusions can be drawn. In the present study, we therefore examined whether coparenting contributes to child effortful control over and above the contributions of maternal and paternal parenting. We also tested whether parenting mediates the relation between coparenting and effortful control.

A last issue that is addressed in this study concerns the source of data: parental reports versus observational measures. There is an ongoing debate about the use of parent reports or of observation as an accurate measure of child

temperament and family processes. Studies have found weak-to-modest correlations between observation and parent reports that measure similar temperament variables (see Seifer, 2002; Seifer, Sameroff, Barrett, & Krafchuk, 1994). This finding may indicate that the methods measure different aspects of behavior. An advantage of using parent reports for the measurement of child variables is that parents know their child better than anyone else and have a large sample of behaviors to draw from when making their ratings (Mangelsdorf, Schoppe, & Buur, 2000). The validity of using ratings of brief observations to measure stable variation in temperament could be questioned (Rothbart & Bates, 1998). However, some authors have questioned the validity of parent reports (see Seifer, 2002). Parents may be biased about the behavior of their own children, or they may not have enough experience with a broad range of children to place their own children on the continuum of normative temperamental behavior (Seifer et al., 1994).

The same concerns are raised with parent reports of family processes, namely, that parental characteristics influence the report of family processes (e.g., Bornstein, Cote, & Venuti, 2001; Deković, Janssens, & Gerris, 1991). Parent-reported and observed family processes each have their own advantages. Whereas parent reports are useful for measuring parental attitudes or perceptions of family functioning, observations are useful for measuring more dynamic aspects of behavior (Kerig, 2001). In general, because of the often-problematic correspondence between different judges, one has to be aware of who the informant is when interpreting obtained information (Seifer, 2002).

In most of the studies on associations between parenting and effortful control, both parenting and effortful control were measured by observation, the latter usually by means of the multitask behavioral battery of Kochanska et al. (2000). However, when different methods were used to measure parenting and effortful control, the correlation between parent reports and observation was generally weaker (e.g., Gartstein & Fagot, 2003; Olson et al., 2005). Thus, the way in which parenting and effortful control are assessed appears to affect the strength of these associations. For this reason, in the present study, we included both parent reports and observational measures to assess all of the constructs. This design allowed us to examine whether the same pattern of findings would be found when different assessment methods were used.

To summarize, the current study investigates the relations among parenting, coparenting, and effortful control in 3-year-old children. The strengths of this study are the broader conceptualization of parenting, the inclusion of paternal parenting and coparenting in addition to maternal parenting, and the use of both observations and parent reports. We hypothesized that parental positive control and responsiveness or warmth would be positively associated with effortful control and that parental negative control would be negatively associated with effortful control. We expected that paternal parenting would contribute to effortful control above maternal parenting. Furthermore, coparental warmth and integrity were hypothesized to be positively related to effortful control, whereas coparental hostility–

competitiveness, conflict, parenting discrepancies, and disparagement were hypothesized to be negatively related to effortful control. We hypothesized that coparenting would contribute to effortful control independently of parenting. Last, we expected relations to be stronger when the same measurement method was used for the assessment of, respectively, parenting and coparenting and of effortful control.

Method

Participants

Participants were 89 two-parent families raising firstborn preschool-age children. Children (45 boys, 44 girls) were 36 months old (range 35–37 months) at the time of the study. Mothers' mean age was 34.5 years ($SD = 4.2$, range 21–46 years); fathers' mean age was 36.5 years ($SD = 4.7$, range 22–50 years). All mothers and fathers were the biological parents of the children. In 56% of the families, the child had a younger sibling. On average, couples had been together for 10.3 years ($SD = 4.7$, range 3–22 years). Of those sampled, 98% of the fathers and 99% of the mothers were Dutch in nationality. The majority of the parents were highly educated (23.9% of the mothers and 30.7% of the fathers had a university education) and worked outside the home.

Procedure

This study was part of a research project on family dynamics and child adjustment. Families were recruited through day-care centers and preschool playgroups in different parts of the Netherlands. After agreeing to participate, day-care centers and playgroups distributed letters among parents of preschool-age children that asked them to participate in the study. Parents who indicated willingness to participate were selected if they lived together and if the target firstborn child was nearly 3 years old. In the selected families, home observations and day-care center and preschool playgroup observations were used to measure family interaction and child effortful control. After the home visit, each parent was asked to complete a questionnaire.

Parenting and coparenting were measured during the home visits on the basis of (a) dyadic mother–child play sessions, (b) dyadic father–child play sessions, and (c) triadic play sessions. Each session consisted of unstructured and structured play tasks, most of them followed by a clean-up period. For dyadic sessions, the tasks involved solving a matching game, engaging in a building game, and reading a picture book. The tasks were similar for both parents. For the triadic session, the tasks involved building pathways with dominoes, pretending to have a family meal, and constructing a marble track. All sessions were videotaped and were independently coded by a trained coding team.

At day-care centers and preschool playgroups, children were observed while they performed 12 tasks that measured effortful control. The session took place in a room where no

other children were present. All tasks were presented as games; after each task, the child was rewarded, regardless of his or her performance. The children received two gifts, which were part of the observation battery. The tasks were independently coded by a team of trained coders.

Observational Measures

Coparenting and Family Rating System. Parenting and coparenting interactions were measured, using the videotaped records, with the Coparenting and Family Rating System (CFRS; McHale, 1995). Rating scales were translated into Dutch and were pilot tested. Parenting scales measure behaviors during dyadic mother-child and father-child interactions. Coparenting scales capture behaviors that can be perceived only within the context of the family group, as well as differences in parental behavior in family-group context (i.e., parental discrepancies; McHale et al., 2000).

Six dimensions of parenting behavior were measured with a 7-point Likert-type scale, and seven dimensions of coparenting behavior were measured with a 5-point scale. For all three tasks, we rated behavior in 1-min intervals of family interaction: the 1st, middle, and last minutes of each task. Thus, for each dyadic and triadic session, nine ratings per dimension were created. This way of combining a micro- and a macrosystem of coding allowed us to benefit from both methods by limiting overlap between scales and by observing interactions in more detail.

Principal-components analysis with varimax rotation yielded three parenting factors: Positive Control, Negative Control, and Warmth. For both mothers and fathers, the three-factor solution accounted for 74% of the variance in parenting scores. Factors were created by averaging the scale scores. Positive Control consisted of the scales Provision of Structure, Limit Setting, and Sensitivity. Negative Control contained Negativity and Investment. The positive loading of Investment on Negative Control can be explained by the aspect of overinvolvement: When a parent is constantly present—which was rated in most mothers and fathers—it may be intrusive for the child. The factor Warmth consisted of the scale Warmth. All factor loadings were above .51 for mothers and above .64 for fathers. Following McHale (1995), three standardized coparenting scores were created: family harmony (family warmth and cooperation); hostility-competitiveness (verbal sparring, competition, and child centeredness [reversed]); and parenting discrepancies (discrepancies in parent-child warmth and discrepancies in parent-child investment).

All parenting and coparenting scales were coded by two coders. Interrater reliability for each pair of coders was based on approximately 15% of all cases. Gamma was used as a measure of reliability, because it is a statistic that controls for chance agreement but is more appropriate for ordinal data than is kappa (Liebetrau, 1983; Schoppe et al., 2001). Mean gamma for maternal parenting was .88, ranging from .81 (sensitivity) to .96 (limit setting, mother-child), and mean gamma for paternal parenting was .88, ranging from .79 (sensitivity) to .92 (limit setting). The

mean gamma for coparenting was .87, ranging from .78 (warmth, father-child) to .97 (child centeredness).

Effortful Control Battery. Eleven tasks of the Effortful Control Battery (Kochanska et al., 2000) were translated, adapted into Dutch, and pilot tested for the observation of effortful control. On the basis of the one-factor solution of a principal-components analysis of the total sample of this study, five tasks with factor loadings lower than .30 were deleted.

Tasks included were Snack Delay, Wrapped Gift, Gift-in-Bag, Tongue, Dinky Toys, and Shapes. The tasks were coded from videotapes by five coders. Reliability, based on approximately 15% of all cases, was computed for all pairs of coders. Following Kochanska et al. (2000), Cohen's kappa was calculated for all aspects of each task using categorical scores (Wouters, 1988), and percentage agreement was calculated for aspects of the tasks using latency scores. The mean kappa was .79, with a mean kappa per task ranging from .63 (Gift-in-Bag) to .85 (Wrapped Gift). The mean percentage agreement was 92% (scores coded within 1 s), with a range per task from 88% (Wrapped Gift) to 99% (Tongue). A composite score for effortful control was calculated by averaging standardized task scores.

Parent Reports

Parenting Dimensions Inventory. We used the self-administered 25-item questionnaire Parenting Dimensions Inventory (PDI; Slater & Power, 1987; Dutch translation version for 3- to 5-year-olds, Gerrits, Groenendaal, Deković, & Noom, 1997) to measure maternal and paternal parenting behavior. A series of descriptive child-rearing statements (e.g., "I encourage my child to be curious, to explore, and to question things") was scored on a 6-point scale, ranging from 1 (*not at all descriptive of me*) to 6 (*highly descriptive of me*). These statements measured nurturance (6 items), responsiveness (4 items), and consistency (4 items). Furthermore, parents had to indicate on a 5-point scale how likely it was that they would use seven different types of discipline practices for six situations, ranging from 1 (*very unlikely*) to 5 (*very likely*). An example of a situation is "Your child becomes sassy while you discipline him or her." The responses were summed across six situations.

The mean alpha of mothers' scales was .74, ranging from .54 (responsiveness) to .87 (refraining from privileges), and the mean alpha for fathers' scales was .70, ranging from .50 (material/social consequences) to .84 (refraining from privileges and reminding). Principal-components analysis yielded three factors for mothers and fathers, accounting for 56% and 57% of the variance in scores, respectively. Factors were constructed by averaging the scores on the scales. The first factor, Positive Control, consisted of the discipline practices material/social consequences, reasoning, and reminding. The second factor, Negative Control, contained the discipline practices ignoring, physical punishment, sending away, and refraining from privileges. The third factor, Responsiveness, consisted of the scales Nurturance, Responsiveness, and Consistency. Factor loadings were higher than .52 for fathers and than .40 for mothers, with the

exception of .29 for maternal ignoring. The discipline practice raising voice did not load on any of the factors, and for this reason the scale was deleted.

Coparenting Scale. The revised Coparenting Scale (McHale, 1997; McHale et al., 2000) is a 16-item questionnaire that assesses the parenting role the parent shares with his or her partner. Overt coparenting (displayed by the parent in the family triad) and covert coparenting behavior (displayed by the parent when alone with the child) are measured. Questionnaire items were translated into Dutch and were tested in a pilot study. Parents were asked to think back over the last few weeks and to indicate how frequently, on average, they had engaged in each of the behaviors described. Parents rated each item on a 7-point scale, ranging from 1 (*absolutely never*) to 7 (*almost constantly; 1–2 times an hour*). An example of an item is “How often in a typical week (when all three of you are together) do you say to your partner ‘You need to handle this’ when your child is acting up?”

Constructs measured by the Coparenting Scale are family integrity, disparagement, conflict, and reprimand. Construct scores were calculated by averaging the item scores. Scores of fathers and mothers were averaged to include behaviors of both parents in the coparenting scores. The alpha values of the constructs were .83 for family integrity, .63 for disparagement, .69 for conflict, and .44 for reprimand. Because of the low alpha for reprimand, this construct was not included in the analyses.

Children’s Behavior Questionnaire. We used the Inhibitory Control scale of the Children’s Behavior Questionnaire (CBQ; Rothbart, Ahadi, Hershey, & Fisher, 2001) to measure paternal and maternal reports of their child’s effortful control (see also Kochanska et al., 2000). The CBQ is a widely used questionnaire for the measurement of temperament in 3- to 7-year-old children. We used an adapted and translated Dutch version (Majdandžić & Van den Boom, 2007). The Inhibitory Control scale consists of the mean score of 13 items that are scored with a 7-point Likert scale, ranging from 1 (*extremely untrue of your child*) to 7 (*extremely true of your child*), on the basis of the child’s characteristics over the last 6 months. An example of an item is “Can easily stop an activity when she/he is told no.” Parents were also provided with the option of indicating “nonapplicable” when the child had not been observed in the situation described.

Cronbach’s alpha was .74 for mothers and .76 for fathers. Because of the high correlation between mothers’ and fathers’ reports of their child’s effortful control ($r = .60, p < .001$), these scores were averaged to create a score for effortful control reported by parents.

Results

Descriptive Analyses

The sample size varied for parent reports ($n = 72$ mothers and 72 fathers) and for observational data ($N = 89$ mothers and 89 fathers). The families in which only parent reports were available did not differ significantly from the families

with the observational data on the following demographic variables: educational level, nationality, marital status, gender of child, one versus more children, age of parents, hours of work outside the home, and number of years together with partner. There were also no significant differences between these families on dimensions of observed effortful control, maternal and paternal parenting, and coparenting.

Means and standard deviations of the variables are presented in Table 1. Fathers and mothers differed in their parenting regarding observed positive control and observed negative control. Fathers showed more negative control, $t(87) = 2.34, p < .05$, and less positive control, $t(87) = -4.72, p < .001$, than did mothers. No significant differences between fathers and mothers were found for other parenting variables.

Intercorrelations among parenting, coparenting, and effortful control variables are shown in Table 2. Significant relations were found between paternal and maternal parenting, with the exception of parent-reported positive control. Observed effortful control was positively related to effortful control reported by both parents. Observed parenting and coparenting variables were not significantly related to parent-reported parenting and coparenting variables, respectively. The most significant relations between parenting and coparenting were found when the same method was used to assess the variables.

The two types of parental control showed significant associations with effortful control, for observation and for parent reports. Parent-reported responsiveness was associated with parent-reported effortful control, whereas no associations were found between observed warmth and observed effortful control. Coparenting was significantly associated with effortful control only when the same

Table 1
Means and Standard Deviations of All Variables

Variable	<i>M</i>	<i>SD</i>
Observed effortful control	–0.01	0.54
Parent-reported effortful control	4.52	0.72
Observed parenting		
Positive control, mothers	5.51	0.51
Positive control, fathers	5.23	0.69
Negative control, mothers	2.95	0.36
Negative control, fathers	3.05	0.40
Warmth, mothers	4.31	0.63
Warmth, fathers	4.42	0.57
Parent-reported parenting		
Positive control, mothers	4.12	0.51
Positive control, fathers	4.10	0.49
Negative control, mothers	1.84	0.49
Negative control, fathers	1.93	0.49
Responsiveness, mothers	4.91	0.52
Responsiveness, fathers	4.78	0.48
Observed coparenting		
Family harmony	0.00	0.85
Hostility–competitiveness	0.00	0.67
Parenting discrepancy	0.00	0.84
Parent-reported coparenting		
Family integrity	5.40	0.42
Conflict	3.09	0.78
Disparagement	2.29	0.59

Table 2
Correlations Between All Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Effortful control (O)	—																			
2. Effortful control (P)	.35**	—																		
3. Positive control, mothers (O)	.31**	.19	—																	
4. Positive control, fathers (O)	.19	.20	.59***	—																
5. Negative control, mothers (O)	-.21	-.28*	-.01	.03	—															
6. Negative control, fathers (O)	-.35	-.26*	.04	.11	.37***	—														
7. Warmth, mothers (O)	.02	-.01	.05	-.02	.04	-.02	—													
8. Warmth, fathers (O)	.04	.16	-.13	.04	-.24*	-.14	.32***	—												
9. Positive control, mothers (P)	.07	.22	.06	.01	-.18	.09	-.05	-.06	—											
10. Positive control, fathers (P)	-.01	.33**	.04	.16	-.04	.11	-.01	-.09	-.04	—										
11. Negative control, mothers (P)	-.15	-.22	-.03	.02	.10	.10	.02	.08	-.05	-.16	—									
12. Negative control, fathers (P)	-.31	-.18	-.06	.11	.17	.15	.07	.07	.29*	.08	.24*	—								
13. Responsiveness, mothers (P)	.06	.42***	-.01	.07	-.13	-.03	-.03	.04	.29*	.16	-.21	.01	—							
14. Responsiveness, fathers (P)	-.08	.27*	-.06	.06	-.17	-.05	-.14	-.07	.07	.19	.01	.05	.37**	—						
15. Family harmony (O)	-.07	.16	-.10	.15	-.13	-.02	.31**	.36**	-.10	.22	-.01	.11	-.02	.13	—					
16. Hostility-competitiveness (O)	-.34	.01	.12	.19	.30**	.30	-.02	.09	-.05	.14	-.03	.23	.05	.06	.26*	—				
17. Parenting discrepancy (O)	-.11	.05	.02	-.25	-.04	-.13	-.20	-.27*	-.15	-.01	-.19	-.02	.08	-.04	-.31**	.13	—			
18. Family integrity (P)	.08	-.42***	.13	.17	-.11	-.13	.06	.06	.12	.33**	-.36**	-.04	.40***	.07	.13	.09	.11	—		
19. Conflict (P)	-.11	-.44***	-.01	-.00	.36**	.12	-.04	-.10	-.05	-.27*	.18	-.06	-.41***	-.30**	.02	.07	-.13	-.29*	—	
20. Disparagement (P)	-.17	-.32	-.08	.04	.29*	.14	-.03	-.08	-.09	-.10	.26*	.18	-.27*	-.15	.05	.17	.08	-.22	.60***	—

Note. *n* ranges from 70 to 88. O = observation; P = parent report.
* $p < .05$. ** $p < .01$. *** $p < .001$.

method was used to assess coparenting and effortful control. More observed hostility-competitiveness was related to a lower level of observed effortful control. The three parent-reported coparenting variables were significantly related to parent-reported effortful control in the expected direction.

Contribution of Parenting and Coparenting to Effortful Control for Observation and Parent Reports

To examine whether effortful control can be predicted from family processes, we performed hierarchical regression analyses. Maternal parenting was entered in the first step, followed by paternal parenting in the second step and by coparenting in the third step. These analyses were performed separately for observed (see Table 3) and for reported (see Table 4) measures.

Observed maternal and paternal parenting and coparenting together explained 31% ($p < .001$) of the variance in observed effortful control (see Table 3). Maternal positive control was a significant predictor of effortful control, with more positive control being associated with a higher level of effortful control. In fathers, negative control was significantly negatively related to effortful control above maternal parenting (see Models 2 and 3). Coparenting was a predictor of effortful control, above maternal and paternal parenting (see Model 3). This contribution was caused by hostility-competitiveness in triadic interactions. More hostility-competitiveness in families was related to a lower level of effortful control in preschoolers.

Reported maternal and paternal parenting and coparenting explained together 38% ($p < .001$) of the variance in reported effortful control (see Table 4). Maternal responsiveness was a significant predictor of reported effortful control, with more maternal responsiveness being related to a higher level of effortful control (see Models 1 and 2). Moreover, paternal positive control was a significant predictor of effortful control, with more positive control being related to higher levels of effortful control (see Model 2). However, in the last step, maternal responsiveness and paternal positive control were not significant. Coparenting contributed significantly to effortful control over and above maternal and paternal parenting, although none of the coparenting variables were significant predictors when parenting was statistically controlled (see Model 3).

To test whether there are unique effects of maternal and paternal parenting once coparenting had been statistically controlled, we performed additional hierarchical regression analyses. In these analyses, coparenting was entered in the first step, followed by maternal parenting in the second step and by paternal parenting in the third step. Regarding the observational data, maternal parenting ($\Delta R^2 = .13, p < .01$) contributed to effortful control over and above coparenting ($\Delta R^2 = .12, p < .05$). Paternal parenting did not contribute to effortful control once we had controlled for the effects of coparenting and maternal parenting, although paternal negative control ($\beta = -.28, p < .05$) was a significant predictor. Regarding the parent reports, neither maternal nor paternal parenting contributed significantly to effortful control

Table 3
Contribution of Observed Parenting and Coparenting to Observed Effortful Control

Step	Independent variable	Model 1		Model 2		Model 3	
		ΔR^2	β	ΔR^2	β	ΔR^2	β
1	Parenting, mothers	.14**		.14**		.14**	
	Positive control		.31**		.31*		.34*
	Negative control		-.21		-.09		-.02
2	Warmth		.03		.01		-.03
	Parenting, fathers			.09*		.09*	
	Positive control				.01		-.00
3	Negative control				-.32**		-.28*
	Warmth				.00		.06
	Coparenting					.09*	
	Family harmony						-.05
	Hostility-competitiveness						-.27*
	Parenting discrepancy						-.12

Note. $n = 81$.

* $p < .05$. ** $p < .01$.

after we controlled for the effects of coparenting ($\Delta R^2 = .28, p < .001$).

To check whether parenting mediates the association between coparenting and effortful control, we compared the amount of variance in effortful control that was explained by coparenting in the first and last steps. For observational data, there was no evidence that parenting mediates the relation between coparenting and effortful control ($\Delta R^2 = .12, p < .05$, in Step 1 vs. $\Delta R^2 = .09, p < .05$, in Step 3). For parent reports, parenting partly mediated this relation (decrease from $\Delta R^2 = .28, p < .001$, in Step 1 to $\Delta R^2 = .09, p < .05$, in Step 3).¹ Taken together, these findings suggest that coparenting contributes more to effortful control than does parenting, but for parent reports, the relation between coparenting and effortful control was partly mediated by parenting.

Contribution of Parenting and Coparenting to Effortful Control, Measured by Different Methods

We tested whether associations between parenting and coparenting, on the one hand, and effortful control, on the other hand, were less strong when different methods of assessment were used. First, we performed r -to- z transformations to compare the average correlations between family processes and effortful control when the same or a different method was used for the assessment of the constructs. No significant differences between the same or different methods were found ($z = .16, p = .87$).

Second, we performed hierarchical regression analyses for the prediction of effortful control from parenting and coparenting, using measures obtained by different methods. Parent-reported maternal parenting, paternal parenting, and coparenting together did not explain a significant proportion of variance in observed effortful control. The only individual predictor was father-reported negative control ($\beta = -.28, p < .05$). Observed maternal parenting, paternal parenting, and coparenting did not contribute to parent-reported effortful control. Thus, although the average correlations yielded within method and between methods did

not show differences, the contribution of the parenting and coparenting dimensions to observed and to parent-reported effortful control decreased significantly when we used different methods to measure family processes and effortful control.

Discussion

In this study, we investigated the relations among parenting, coparenting, and effortful control in 3-year-old children. In general, maternal and paternal parenting behaviors were related to effortful control for both observation and parent reports. Corresponding with our hypothesis, paternal parenting contributed to effortful control above maternal parenting. Furthermore, coparenting, the way in which parents coordinate their child-rearing practices, was related to effortful control in preschoolers over and above maternal and paternal parenting, for observations and for parent reports. Generally, effortful control was more strongly predicted from a model that included maternal and paternal parenting and coparenting when the same method was used for the measurement of both predictors (family processes) and outcome (effortful control).

Maternal parenting contributed significantly to effortful control for both observations and parent reports, although the contributions of the parenting dimensions differed. Observed maternal positive control and mother-reported responsiveness were the parenting dimensions that were most strongly related to preschoolers' observed and parent-reported effortful control, respectively. In a meta-analysis on parenting and self-regulation, positive and negative con-

¹ Mediation was also tested at the level of the individual parenting and parenting dimensions. Sobel tests were conducted to test whether reduction of the effects of the coparenting dimensions was significant (Preacher & Hayes, 2004). Reported responsiveness of mothers significantly mediated the relation between reported family integrity and effortful control ($z = 2.08, p < .05$) and the relation between reported conflict and effortful control ($z = -2.04, p < .05$).

Table 4
Contribution of Reported Parenting and Coparenting to Reported Effortful Control

Step	Independent variable	Model 1		Model 2		Model 3	
		ΔR^2	β	ΔR^2	β	ΔR^2	β
1	Parenting, mothers	.18**		.18**		.18**	
	Positive control		.11		.11		.11
	Negative control		-.15		-.07		.02
	Responsiveness		.33**		.26*		.12
2	Parenting, fathers			.11*		.11*	
	Positive control				.28*		.19
	Negative control				-.20		-.19
	Responsiveness				.10		.07
3	Coparenting					.09*	
	Family integrity						.20
	Conflict						-.20
	Disparagement						-.08

Note. $n = 70$.

* $p < .05$. ** $p < .01$.

control were found to be more strongly related to self-regulation than was responsiveness (Karreman et al., 2006). This meta-analysis revealed that most studies on parenting and self-regulation used observational data of mothers, which corresponds with our different findings of the parenting dimensions that are important in relation to effortful control for observation (positive control) and for parent reports (responsiveness). Positive control may be an effective strategy in specific interactions with a child; it may help a child to achieve higher levels of effortful control by teaching the child to suppress a dominant response and to initiate a subdominant response. Responsiveness in mothers may foster effortful control (Kochanska et al., 2000) by yielding a general positive emotional context, better assessed with self-reports, in which the child feels safe and comfortable.

Paternal parenting contributed to effortful control over and above maternal parenting for observation and parent reports. Although it has been found that fathers spend a greater proportion of time in play activities and mothers spend a greater proportion of time in child-rearing activities (Parke, 2002), the findings of this study suggest that fathers do play a role in disciplining the child in addition to the disciplinary role played by mothers. However, different dimensions of maternal and paternal parenting predicted effortful control. Regarding observational data, it appeared that in fathers, negative control was especially important, whereas in mothers, it was positive control that predicted effortful control. This finding may be explained by differences between fathers and mothers in play interaction, the context in which parenting was observed in this study. Because fathers tend to be physical in play interaction (Parke, 2002), children could become aroused, show less self-regulated behavior, and exert pressure on the father, thereby eliciting negative control. Mothers tend to be didactic and toy mediated when playing with their child (Parke, 2002). Their play with the child may be more relaxed, and the child may not elicit forceful strategies to control his or her behavior. In this study, we indeed observed higher levels of negative control and lower levels of positive con-

control in fathers than in mothers. Other research has found that mothers used more gentle guidance than did fathers (Volling, Blandon, & Gorvine, 2006). However, observed maternal and paternal negative control both correlated with parent-reported effortful control. This finding suggests that, overall, if parental negative control is used in specific interaction with the child, it is likely to undermine effortful control.

The finding that coparenting contributed to effortful control beyond the effects of maternal and paternal parenting validates the notion that the coordination between parents in the coparenting of young children is of significant importance in addition to what either parent does individually. This is an important realization for the field of research on family processes in relation to children's effortful control. Associations between coparenting and children's adjustment have been found in previous studies (Katz & Low, 2004; McHale & Rasmussen, 1998; Schoppe et al., 2001). Few studies, however, have examined relations between coparenting and temperamental factors that are assumed to underlie this adjustment (Belsky et al., 1996; McHale et al., 1996; Stright & Bales, 2003), and even fewer studies have examined these relations after accounting for individual parenting (Belsky et al., 1996; McHale et al., 1996). The findings of this study showed that for observational data, parenting did not mediate the association between coparenting and effortful control. Similar results have been reported (Caldera & Lindsey, 2006). For parent reports, parenting partly mediated the association between coparenting and effortful control. When a parent does not perceive much support in coparenting over the long term, this may to some extent affect his or her parental efficacy and parenting (Feinberg, 2003). Taken together, the present study showed that coparenting contributed to effortful control over and above parenting (for both observation and parent reports). This finding denotes that coparenting has unique values, which explain a significant proportion of the variance of effortful control.

The coparenting dimension that was most strongly related to effortful control was observed hostility-competitiveness.

As expected, more hostility–competitiveness between parents was related to a lower level of effortful control in preschoolers. Thus, the more signs of subtle conflict and undermining of coparenting practices between parents we observed, the more problems children had in regulating their emotions and behavior. It seems especially that exposure to overt interparental conflict fosters emotional insecurity in children through a heightened negative emotional arousal, a finding that supports the emotional security hypothesis (Davies & Cummings, 1994). High levels of arousal deplete psychological energy by competing for the resources required to regulate emotions and behaviors. Parents involved in conflict do not create a stimulating environment for a child to internalize rules, even when the parents act consistently in their own parenting behavior toward the child (see also Belsky et al., 1996). Constructive management of conflict, however, does not seem to be detrimental for children. Also, when parents strategically avoid hostile conflict until a time when the child is not present, this does not harm the child (Feinberg, 2003). Our finding that parent-reported conflict did not contribute to effortful control confirms this. However, bad coordination and conflicts between parents evoked in interaction with their child contribute to preschoolers' lack of effortful control over and above the significant effects of observed maternal positive control and observed paternal negative control. Supportive dimensions of coparenting did not emerge as meaningful predictors of effortful control. Mechanisms through which social support exerts a beneficial influence on children have been addressed less frequently in the literature.

We expected that the way in which constructs were assessed would play a role in the relations among parenting, coparenting, and effortful control. Indeed, parenting and coparenting more strongly predicted effortful control when measured by the same method, compared with when the variables were measured by different methods. The results are therefore consistent with earlier research, in which weaker relations were found when different methods were used to measure parenting and effortful control (Gartstein & Fagot, 2003; Olson et al., 2005). These findings raise the question of whether researchers should rely on parents' perceptions or on observations when they try to understand the contributions of family processes to effortful control. It is difficult to draw conclusions about the validity of parent reports versus observational measures. Family processes and children's effortful control are assessed more broadly by questionnaires. Observations, on the other hand, are necessary to obtain information about specific behaviors of parents and children. The two methods seem have their own advantages, in that they measure different aspects of behavior. Questionnaire data reflect perceptions of parents, parental attitudes, or recognitions of behavior. Observations assess more dynamic aspects of behavior, situation-specific behavior, or face-to-face interactions (Kerig, 2001).

Therefore, it is not surprising that observed parenting and coparenting were not related to parent-reported parenting and coparenting. Some researchers have failed to find an association between parent-reported and observed parenting

(Bornstein et al., 2001; Cote & Bornstein, 2000), whereas others found modest associations (Deković et al., 1991; Slade, Belsky, Aber, & Phelps, 1999). Inconsistent results have been found for parent-reported and for observed coparenting (McHale et al., 2000; Stright & Bales, 2003). In contrast to parenting and coparenting, parent-reported effortful control was related to observed effortful control ($r = .35, p < .01$), as has been reported earlier (Kochanska et al., 2000; Olson et al., 2005). The construct of effortful control may be more straightforward than are the constructs of parenting and coparenting, which consist of many dimensions.

Conceptually, the parent-reported (co)parenting variables in this study did not fully correspond to the observed (co)parenting variables. This conceptual distinction has often been found to be a difficulty in comparisons of parent-reported and observed parenting behavior and might have contributed to the lack of correspondence between the methods (Bornstein et al., 2001; Goodnow, 1988). For instance, observed coparenting includes only behaviors when all family members are present, whereas parent-reported coparenting also includes behaviors when the other parent is absent (McHale, 1997; McHale et al., 2000).

Finally, we conducted separate analyses for observation and parent reports to examine whether different methods yielded similar results. Because we defined both the independent and dependent variable with a common measure (observation or self-report) in these analyses, the found associations could have been the product of shared methods across constructs (Bank, Dishion, Skinner, & Patterson, 1990). However, this problem of biased estimates, the "glop" problem, usually occurs when one reporter rates the independent and the dependent variables. To reduce the glop problem, we used composite measures of mother and father reports as measures of coparenting and effortful control, and different teams of trained observers rated family processes and effortful control.

Despite the methodological differences, for both observed and parent-reported behavior, coparenting contributes to effortful control in addition to the contribution of parenting. The primary predictors of effortful control differed for observed family processes (maternal positive control, paternal negative control, and coparental hostility–competitiveness) versus parent-reported family processes (maternal responsiveness), a finding that may have several implications. Theoretically, this may indicate that using constructive controlling techniques (as observed) and providing an emotionally safe family environment (as reported) are important for stimulating a high level of effortful control in children. When designing research, one should be aware that different types of information are assessed by observation (controlling strategies by parents) and by parent reports (family climate). Regarding clinical implications, this study could indicate that prevention and intervention programs should focus directly on parental control techniques and ways to improve communication and cooperation between parents in interactions with their child.

The study had some limitations. First, participating families were primarily White, middle- to upper-middle class,

dual income, and well functioning. For generalization to other populations, the findings need to be replicated in other family samples, such as ethnically diverse, lower-class, and clinically distressed families.

Second, parenting and coparenting interactions were observed during dyadic and triadic play sessions, which took place in the following order: mother-child interaction, father-child interaction, and triadic interaction. Perhaps an order effect could explain the differences in positive and negative control between mothers and fathers, as children were less engaged and involved and were more fatigued when doing similar tasks with their father after playing with their mother. Counterbalancing of the session would have excluded this possible order effect.

Third, because we assessed concurrent relations, it was not possible to determine the direction of effects. Parenting, coparenting, and effortful control can be expected to affect one another: Parenting and coparenting affect effortful control by guiding the child's behavioral responses, whereas the level of effortful control of a child affects parenting and coparenting practices by eliciting differential behavior (Kochanska et al., 2000).

Last, because of the restricted sample size, we did not take the child's gender into account. Studies have found different relations between coparenting and preschoolers' adjustment for boys and girls (e.g., McHale & Rasmussen, 1998). Future research should investigate the role of child gender, as well as combinations of parent and child gender, in relation to parenting, coparenting, and effortful control.

In conclusion, this is the first European study to investigate the associations among parenting, coparenting, and effortful control in preschoolers. Our results tended to confirm the results of North American studies of coparenting. Although parent reports and observation appeared to measure different aspects of a certain behavior, they yielded similar results, namely, that coparenting contributes to effortful control over and above maternal and paternal parenting. This finding has two major implications. First, it indicates the importance and complementary nature of parent reports and observation. Second, it highlights the importance of coparenting to the development of effortful control.

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