Personal RELATIONSHIPS
JOURNAL OF THE INTERNATIONAL ASSOCIATION FOR RELATIONSHIP RESEARCH

Personal Relationships, **20** (2013), 259–276. Printed in the United States of America.
 DOI: 10.1111/j.1475-6811.2012.01404.x

INVITED REVIEW

Parenting stress and marital relationship as determinants of mothers' and fathers' parenting

KOEN PONNET,[a] DIMITRI MORTELMANS,[a] EDWIN WOUTERS,[a] KARLA VAN LEEUWEN,[b] KIM BASTAITS,[a] AND INGE PASTEELS[a]

[a] *University of Antwerp and* [b] *Katholieke Universiteit Leuven*

Abstract

Using the actor–partner interdependence model, we explore how various sources of stress and support experienced by fathers and mothers influence their own parenting styles and the parenting styles of the partner. Data from 227 couples were analyzed, with mothers and fathers rating their parenting stress and marital relationship and children rating the parenting styles of both mothers and fathers. Structural equation models revealed actor effects of parenting stress on demanding and responsive parenting styles, as well as partner effects between positive aspects of marital relationship and responsive parenting style. The results further indicate that the strength of these pathways is similar for both mothers and fathers and do not support the hypothesis that the parenting of fathers is more vulnerable than the parenting of mothers.

Ever since the advent of Belsky's (1984) ecological model of parenting, it has been widely accepted that contextual sources of stress and support have an influence on parenting, which in turn affects child outcomes (Crnic & Low, 2002). The ecological approach also emphasizes that all parts of the family system are interconnected and that parents and children are best studied within this network (Belsky, 1984; Bronfenbrenner, 1989). To date, research on the determinants of parenting has focused largely on the role of mothers (Pleck, 2010). Fathers, however, are currently more involved in rearing their children than was the case in the past. Although most fathers do not take as active a role in the parenting process as most mothers do, the gap between men's and women's participation in childrearing appears to be shrinking (Amato, Meyers, & Emery, 2009; Lamb, 2010; Woodworth, Belsky, & Crnic, 1996). Despite this general trend, most studies on the determinants of parenting that do include fathers have typically analyzed data from mothers and fathers separately or used composite or aggregated scores, thereby ignoring the interdependence and mutual influence between the two parents.

Mothers and fathers parent within the same families. In addition to the effects of his or her own level of stress, the parenting of one partner also is likely to be affected by the other partner's level of stress as well. Moreover, the nature of the relation

Koen Ponnet, Research Centre for Longitudinal and Life Course Studies, and Media & ICT in Organizations and Society, University of Antwerp, Antwerp, Belgium; Dimitri Mortelmans, Research Centre for Longitudinal and Life Course Studies, University of Antwerp, Antwerp, Belgium; Edwin Wouters, Research Centre for Longitudinal and Life Course Studies, University of Antwerp, Antwerp, Belgium; Karla Van Leeuwen, Parenting and Special Education Research Group, Katholieke Universiteit Leuven, Leuven, Belgium; Kim Bastaits, Research Centre for Longitudinal and Life Course Studies, University of Antwerp, Antwerp, Belgium; Inge Pasteels, Research Centre for Longitudinal and Life Course Studies, University of Antwerp, Antwerp, Belgium.

Correspondence should be addressed to Koen Ponnet, Research Centre for Longitudinal and Life Course Studies, and Media & ICT in Organizations and Society, University of Antwerp, Sint-Jacob Street 2, 2000 Antwerp, Belgium, e-mail: koen.ponnet@ua.ac.be, koen_ponnet@yahoo.com.

between the contextual sources of stress and parenting may vary for mothers and fathers (Barnett, Deng, Mills-Koonce, Willoughby, & Cox, 2008). According to the fathering-vulnerability hypothesis (Belsky, Gilstrap, & Rovine, 1984; Cummings, Goeke-Morey, & Raymond, 2004; Cummings & O'Reilly, 1997), fathering and father–child relationships might be more vulnerable to the stress of marital discord than is the case with mothering and mother–child relationships. In other words, negative marital relations might have stronger effects on father–child relationships than they do on mother–child relationships (Cummings, Merrilees, & George, 2010). One possible explanation for the increased vulnerability of fathers is that, for men, the roles of father and husband may be less distinct than the roles of mother and wife are for women, thus making fathering more sensitive to marital stress or other external influences (Belsky, Youngblade, Rovine, & Volling, 1991; Coiro & Emery, 1998). Although it has not been the subject of extensive research, evidence is mixed regarding the fathering-vulnerability hypothesis. On one hand, results of several studies suggest that the association between marital relationship and parenting is not moderated by the gender of the parent. For example, in their meta-analysis of marital conflict, Erel and Burman (1995) found no evidence to support the assumption that marital quality in intact families is differentially related to the quality of mothering and fathering. On the other hand, in a review on mothering and fathering, Coiro and Emery (1998) concluded that there is tentative support for the hypothesis that father–child relationships are more sensitive to marital conflict than mother–child relationships. Similarly, results from Krishnakumar and Buehler's (2000) meta-analytic review of relations between interparental conflict and parenting provided at least some support for the fathering-vulnerability hypothesis. Both supportive and nonsupportive results should be interpreted with caution, however, given that analyses of mother–father differences are not always based on within-couple comparisons (Coiro & Emery, 1998; Cummings et al., 2004; Cummings et al., 2010). As such, researchers focusing on the individual level of analysis ignore nonindependence in dyad members' scores on standard significance testing, which result in biased variances (Kenny, Kashy, & Cook, 2006).

In this study, we move beyond these limitations by analyzing data from both parents within the same family. By focusing on effects within *and* between partners, we can differentiate between a personal and relational component, because a parent's parenting style depends on feelings of stress and support of his or her partner, besides his or her own feelings of stress and support (Kenny et al., 2006). Our research makes several important contributions to the literature on the contextual sources of stress and support as determinants of parenting. First, we focus on parenting stress (childrearing stress and feelings of role restriction), positive (marital quality and partner support) and negative (ineffective arguing) aspects of marital relationship as determinants of parenting. While parenting stress is situated at the parent–child level, the marital relationship is situated at the parent–parent level. Second, considering the dyadic nature of parenting, we investigate how sources of stress and support experienced by fathers and mothers influence their respective parenting styles, and we examine whether the strengths of the effects are similar for both parents. Third, it can be assumed that an individual's parenting style is influenced not only by his or her own feelings of stress and support but also by the stress and support experienced by the partner. We therefore examine possible pathways *between* the two parents and test for gender differences. Fourth, we contribute to the literature using rigorous methodological techniques. All dependent and independent variables are treated as latent constructs, using confirmatory factor analyses (CFA). The use of CFA offers the advantage of estimating relations among variables, while adjusting for measurement error. To model the interdependence of dyad members and the mutual influence between the two parents, our analyses are grounded on the actor–partner interdependence model (APIM; Kashy & Kenny, 2000; Kenny et al., 2006), a family-system approach that proposes that

the predictor variables of both the respondent (actor effects) and the respondent's partner (partner effects) influence the respondent's outcome variable (Yucel & Gassanov, 2010). The APIM allows the testing of both actor and partner effects. It also allows comparison of actor and partner effects for both mothers and fathers and to test specific combinations of actor and partner effects. Although the relation between contextual sources of stress and support on one hand and parenting styles on the other has frequently been studied, dyadic analyses using such rigorous statistical controls are scarce (Nelson, O'Brien, Blankson, Calkins, & Keane, 2009).

Theoretical framework

The family system approach highlights the idea that the family is a complex, integrated whole, in which individual family members are necessarily interdependent (Cox & Paley, 1997; Minuchin, 1974). Several processes have been proposed to explain how family members influence one another (Erel & Burman, 1995; Repetti, 1987). In this study, we focus on two of these processes: spillover and crossover. *Spillover* occurs when an individual brings experiences or feelings from one domain (e.g., the parent domain) into another domain (e.g., the parent–child domain). Transfer occurs in the same valence. For example, father's stress might be linked to a less responsive parenting style. *Crossover* refers to the transfer of experiences or affect between people. One example of crossover is when the stress experienced by one parent is detrimental to the parenting of the other partner.

The APIM is a specific multisource family-system approach that uses the parent dyad as the unit of analysis (Fincham & Beach, 2010). The model can be used to assess spillover and crossover effects. The APIM approach to the examination of family functioning is quite recent. It was designed to estimate the impact of the independent variables of individuals on their own dependent variables (actor effects), as well as on the dependent variables of their partners (partner effect). It implies that the two members of the dyad influence each other in the form of partner effects, which create interdependence between members (Ledermann & Macho, 2009). Because most studies on parenting use the individual as the unit of analyses, they focus exclusively on the ways in which the feelings of parents (e.g., mother's feelings of stress) are associated with their parenting (i.e., actor effects), and they ignore the mutual interdependence of family relationships. The use of the APIM provides a healthy corrective measure for past practices, in which interdependency in dyadic data was unrecognized, ignored, or addressed in suboptimal ways (Fincham & Beach, 2010). In the APIM model, actor effects are indicative of spillover effects, while partner effects are indicative of crossover effects. Applying the APIM notion to this study, we explored various pathways of influence among fathers and mothers. More specifically, we examined actor and partner effects between parenting stress and parenting styles, as well as between marital relationship and parenting styles, and tested specific combinations of actor and partner effects to discern four specific patterns in the APIM: the actor only, the partner only, the couple, and the contrast pattern (Kenny & Ledermann, 2010). The actor-only pattern is indicated if a person's parenting styles are a function of that person's feelings of stress and support only, while the partner's feelings of stress and support have no impact. The partner-only pattern takes place if a person is affected by the partner's feelings of stress and support, but not by his own feelings. In a couple-oriented pattern, the actor and partner effects are equal such that a parent is affected as much by his or her own feelings of stress and support as by those of the partner. The contrast pattern occurs if actor and partner effects are equal in size but have opposite signs. For example, a person's demanding parenting style is positively affected by his or her parenting stress and negatively affected by the partner's parenting stress (Kenny et al., 2006; Kenny & Ledermann, 2010).

Parenting styles and contextual sources of stress and support

We conceptualize parenting styles in line with Darling and Steinberg's (1993) definition of

styles as a reflection of the emotional climate in which socialization occurs. Although parenting styles and parenting practices are often used as interchangeable concepts, parenting practices are distinct from parenting styles. While parenting practices are directed toward particular goals, parenting styles can be regarded as the general context or climate in which the more specific parenting practices are expressed (Darling & Steinberg, 1993).

Baumrind (1991) outlines two independent dimensions of parenting. The first dimension, responsiveness, refers to the degree of parental warmth, emotional expressiveness, and positive reinforcement of the child. The second dimension, demandingness, refers to parental discipline, control, and level of demands. Following Baumrind's perspective, we used a multidimensional measure that captures parental responsiveness and demandingness (see the Method section).

Several contextual sources of stress and support have been associated with both dimensions of parenting style, two of which are examined in this study: parenting stress and marital relationship. In the following section, we briefly outline the two sources of stress and support and how they may affect parenting style.

Parenting stress and parenting styles

Stress is a multidimensional construct that can be operationalized in various ways, depending on the source or context of the stressor (Crnic, Arbona, Baker, & Blacher, 2009; Crnic & Low, 2002). Parenting stress is a specific kind of stress, which can be distinguished from stress in other domains of life (e.g., work stress and marital relationship). It refers to a condition or feeling experienced when parents perceive that the demands associated with parenting exceed the personal and social resources that are available to them to meet those demands (Abidin, 1990; Cooper, McLanahan, Meadows, & Brooks-Gunn, 2009; Deater-Deckard, Smith, Ivy, & Petrill, 2005). Although parents may vary in the ways in which they handle stress (Bronte-Tinkew, Horowitz, & Carrano, 2010), all parents experience parenting stress to some degree (Crnic & Greenberg, 1990; Hakvoort, Bos, Van Balen, & Hermanns, 2010). The gender of parents, however, has been found to be only modestly associated with levels of parenting stress (Deater-Deckard, Dodge, Bates, & Pettit, 1998; Deater-Deckard & Scarr, 1996) Moreover, studies measuring parenting stress in both parents suggest that mothers and fathers within the same family might be more similar than different in their levels of parenting stress (Deater-Deckard et al., 1998; Deater-Deckard & Scarr, 1996).

A substantial body of literature documents the relation between parenting stress and parenting. More specifically, research indicates that parents reporting greater levels of parenting stress are more demanding and less responsive in their parenting styles, and they are less involved with their children (Belsky, Woodworth, & Crnic, 1996; Crnic, Greenberg, Ragozin, Robinson, & Basham, 1983; Deater-Deckard, 1998; Deater-Deckard & Scarr, 1996). Despite this well-documented relation, the degree to which parenting stress affects the parenting styles and involvement of mothers and fathers is not yet clearly understood (Crnic, Gaze, & Hoffman, 2005; Fagan, Bernd, & Whiteman, 2007; Nelson et al., 2009). Most studies on the relation between parenting stress and parenting focus on the role of mothers (Crnic et al., 2005; Crnic et al., 2009; Hutch-Bocks & Hughes, 2008; Rodgers, 1998), and the few studies that have involved fathers analyzed data separately from mothers and fathers (Bronte-Tinkew et al., 2010; Isacco, Garfield, & Rogers, 2010). Because the father is now expected to be an equal coparent with the mother (Crnic et al., 2009; Pleck, 2010), it is important to determine the degree to which the paths from parenting stress to parenting styles are uniform for mothers and fathers.

Marital relationship and parenting styles

Marital relationship is a broad construct, encompassing positive aspects such as partner support and marital quality and negative aspects such as hostility or disagreement, and studies investigating the association between marital relationship and parenting differ in

the way they define and measure marital relationship (Kjobli & Hagen, 2009). Over the past decades, considerable research has, however, demonstrated links between marital relationship and parenting (Erel & Burman, 1995; Kaczynski, Lindahl, Mailik, & Laurenceau, 2006; Krishnakumar & Buehler, 2000), although the direction of the effects is not always clear (Grych, 2002). Consistent with the spillover hypothesis, a meta-analytic study by Erel and Burman (1995) reveals modest but consistent significant associations between marital quality and high parent–child relationship quality. Likewise, a more recent meta-analysis by Krishnakumar and Buehler (2000) demonstrates a significant negative relation between interparental conflict and positive parenting. Little attention, however, has been paid to crossover or partner effects. In fact, most studies on the influence of marital relationship on parenting mostly focus on mothers (Benson, Buehler, & Gerard, 2008; Buehler & Gerard, 2002), and studies that do involve both parents typically consider marital relationship as a unit, without studying fathers separately (Buehler, Benson, & Gerard, 2006; Kaczynski et al., 2006; Kjobli & Hagen, 2009). There is nonetheless some support for the crossover contention. For example, a recent article by Nelson and colleagues (2009) reports crossover or partner effects between marital dissatisfaction and parenting behavior, although the effects are at the trend level. The focus of Nelson and colleagues' study, however, was on supportive and nonsupportive techniques that parents use to teach children about emotions rather than on various dimensions of parenting style.

Research questions and hypotheses

Focusing on the APIM, the main aim of this study is to assess actor and partner effects of parenting stress or marital relationship on parenting styles. More specifically, we address the following research questions and/or hypotheses.

First, we examine actor effects of parenting stress, positive and negative aspects of marital relationship on the parenting styles of mothers and fathers. On the basis of the literature on parenting stress (Crnic & Low, 2002), we anticipate significant actor effects for mothers and fathers, with higher levels of childrearing stress and role restriction associated with a more demanding and less responsive parenting style. Furthermore, consistent with other studies on marital relationship (Erel & Burman, 1995; Krishnakumar & Buehler, 2000), we expect high marital quality and partner support and low ineffective arguing to be associated with less demanding and more responsive parenting styles. Second, we examine whether the actor effects are equal for mothers and fathers. On the basis of the fathering-vulnerability hypothesis, we expect the parenting styles of fathers to be more susceptible to deterioration in the face of stress derived from the marital relationship, which is ineffective arguing. We expect no gender differences in the pathways from parenting stress to parenting styles, given that parenting stress is situated at the parent–child level, such that fathers do not have to differentiate between their roles of husband and father nor do mothers have to distinguish between their roles as mothers and their roles as wives. Third, we test for partner effects, expecting that parenting stress, positive and negative aspects of marital relationship from one parent crosses over to the parenting style of the other partner, in the same ways as the actor effects. Fourth, we test for gender differences in partner effects. We make no specific hypotheses in this regard, however, due to the general lack of previous literature on this topic. Finally, we test the relative size of the actor and partner effects to discern four specific patterns: the actor only, the partner only, the couple, and the contrast pattern. On the basis of the findings of Nelson and colleagues (2009), we expect actor-oriented models for parenting stress as well as positive and negative aspects of marital relationship; that is, actor effects will be more prominent than partner effects.

Method

Procedure

The sample for this study was selected from subjects participating in the interuniversity

Relations in Flanders (RiF) project sponsored by the agency for Innovation by Science and Technology. The RiF project is based on a unique multiactor design, in which the child and both parents are interviewed. The research population was restricted to people in the Dutch-speaking part of Belgium, who were either still in their first marriage or who had experienced one divorce. The sample was drawn from the Belgian National Register. If the marriage was intact, both partners were interviewed face-to-face (Computer-Assisted Personal Interview) in their current households. If a divorce or separation had taken place, both partners were interviewed face-to-face in their new residences. In addition to the parents, one resident child was interviewed face-to-face, provided that the child had reached the age of 10. In case of multiple children above 10 years of age in the family, only the child whose birthday was closest to the date of the interview was selected. Even though the same questions were asked of each child, the questionnaire was adapted to specific characteristics of the child's age (10–13, 14–17, and 18+ years old).

Participants

For this study, we used a subsample of the RiF data: only nondivorced families ($n = 227$) with a child ranging in age from 10 to 18 years were included. We used mothers' ($n = 223$) and fathers' ($n = 200$) reports of the various sources of stress, whereas we used child reports ($n = 227$) of the two dimensions of parenting style. This approach is based on the assumption that mothers and fathers are more qualified than their children are to evaluate their own levels of stress, while children are in a better position than their parents to report on parenting styles. Self-reports from children may be the most valid way of measuring parenting styles, as the feeling of being controlled or criticized is very much a subjective experience (Aunola, Stattin, & Nurmi, 2000; Barber, 1996; Litovsky & Dusek, 1985; Wentzel, 1994). Furthermore, parents' reports of their own parenting styles might be subject to self-serving biases, as prior research shows that parents rate their own styles and skills more favorably than their children do (Purdie, Carroll, & Roche, 2004).

The average age of the children who were interviewed was 14.12 years ($SD = 2.58$), with 47% boys ($n = 106$) and 53% girls ($n = 121$). Univariate analysis of variance revealed no between-group differences for age, $F(1, 226) < 1$. The average age of the fathers who were interviewed was 44.29 years ($SD = 3.84$, range = 28), and the average age of the mothers was 42.88 years ($SD = 42.88$, range = 21). A paired t test revealed a significant difference between the mean ages of the fathers and the mean ages of the mothers, $t(195) = -6.98$, $p < .001$. Education was measured as the highest level of education achieved. The educational level of fathers was significantly different from that of mothers, $\chi^2(4) = 38.09$, $p < .001$. Within our sample, 6.7% of the mothers and 12% of the fathers had completed no education or only primary education, 39% of the mothers and 37.5% of the fathers had completed secondary education, and 54.3% of the mothers and 50.5% of the fathers had completed at least 3 years of higher education.

Analyses

To test our research questions and hypotheses, we used structural equation modeling (SEM), following the procedures outlined by Kenny and colleagues (2006). Raw data were structured as triadic data. In other words, each line represented a triad, with variables reflecting scores from the mother, the father, and the child. Statistical analyses were conducted in Mplus 5.2 (Muthén & Muthén, 2008) with maximum likelihood estimation. With SEM, it is possible to model several variables simultaneously and to compare the relative magnitudes of various regression paths.

We tested the fit of several successive models. First, we conducted CFA on all multiitem scales to identify whether the constructs are adequately measured by the indicators. Second, we built measurement models for the relations between each of the five latent predictors and parents' demandingness and responsiveness. Finally, we conducted several APIM structural equation models, for each

predictor variable (i.e., parenting stress or marital relationship) and for each parenting style (i.e., demandingness or responsiveness), in which we evaluated actor and partner effects among the latent variables. We also tested whether actor and partner effects were significantly different for mothers and fathers and tested whether the models were more actor, partner, contrast, or couple oriented.

The model fits of the CFA's measurement and path models were evaluated according to several fit indices. Given that the χ^2 is almost always significant and not an adequate test of the model fit (Brown, 2006; Kline, 2005), we therefore report a χ^2/df ratio as well. A χ^2/df ratio of 2:1 to 5:1 is required, and it indicates an acceptable fit, although values of < 3 are considered favorable (Kline, 2005). In addition, we examined the comparative fit index (CFI; Bentler, 1990), the Tucker–Lewis index (TLI; Tucker & Lewis, 1973), root mean square error of approximation (RMSEA; Steiger, 1990), and the standardized root mean square residual (SRMR; Kline, 2005). The CFI and TLI range from 0 to 1.00, with a cutoff of 0.95 or higher indicating that the model provides a good fit and 0.90 indicating that the model provides an adequate fit (Byrne, 2001; Hu & Bentler, 1999). RMSEA values below 0.05 indicate a good model fit, and values between 0.06 and 0.08 indicate an adequate fit (Brown, 2006; Raykov & Marcoulides, 2006). The SRMR is a standardized summary of the average covariance residuals (Kline, 2005). A relatively good model fit is indicated when the SRMR is smaller than 0.08 (Hu & Bentler, 1999).

Measures

With the exception of the control variables (e.g., age of the parents), all measures described below were treated as unidimensional latent variables, which we constructed using CFA with Mplus 5.2 (Muthén & Muthén, 2008). We investigated how the various indicators are related to the latent factors, in addition to the relations among indicator errors. Thereafter, we assessed the scale-composite reliability (ρ) for each latent construct, thus providing an appropriate and desirable estimate of their reliability (Raykov, 2009).

Parenting stress

Parenting stress was measured using the childrearing stress scale and the role-restriction scale (Van den Troost, 2005).

The *childrearing stress* of the parents was measured according to three items, adapted from a study by Van den Troost (2005). Each of the items is intended to reflect the degree to which parents report experiencing childrearing as burdensome and problematic. Both mothers and fathers were asked to rate the items along a 7-point Likert scale ranging from 1 (*definitely disagree*) to 7 (*definitely agree*). Items are: "Raising my daughter/son brings about a lot more problems than I expected"; "Raising my daughter/son is harder than I thought it would be"; and "Raising my daughter/son frequently causes problems." These three items served as indicators of the latent construct representing the childrearing stress of mothers and fathers. The initial model provided a good fit for the data, $\chi^2(8) = 10.81$, $p = .21$; $\chi^2/df = 1.35$, CFI $= 0.99$, TLI $= 0.99$, RMSEA $= 0.039$, SRMR $= 0.017$. Factor loadings ranged from 0.80 to 0.83 for mother reports and from 0.77 to 0.86 for father reports. Both constructs were interdependent ($r = .53$, $p < .001$). Scale-composite reliability (ρ) was 0.86 for the mothers as well as for the fathers.

Role restrictions were measured according to four items, adapted from a study by Van den Troost (2005). Both mothers and fathers rated the degree to which they feel restricted by their parenting and childrearing roles in arranging their personal lives and fulfilling their personal interests (e.g., "Raising my children prevents me from doing things that are important to me" and "Because of your children, you cannot plan your life as you want it"). All the items were scored along a 7-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The initial model showed a good fit, $\chi^2(19) = 35.08$, $p < .05$; $\chi^2/df = 1.85$, CFI $= 0.97$, TLI $= 0.96$, RMSEA $= 0.060$, SRMR $= 0.036$. Factor loadings ranged from 0.57 to 0.81 for

mother reports and from 0.59 to 0.85 for father reports. Both constructs were interdependent ($r = .33$, $p < .001$). Scale-composite reliability (ρ) was 0.82 for mothers and 0.83 for fathers.

Marital relationship

Positive marital relationship was measured using the Quality of Marriage Index (QMI; Norton, 1983) and a five-item Partner-Support Scale (Dykstra, van Tilburg, & Gierveld, 2005). Negative marital relationship was measured using the Ineffective Arguing Inventory (IAI; Kurdek, 1994).

The QMI (Norton, 1983) consists of six items measuring global perceptions of marital satisfaction. The six items assess the nature of the marriage and quality of the relationship (e.g., "My relationship with my partner makes me happy"). Both mothers and fathers rated the extent to which they agreed with evaluative statements about their marriages, with five items anchored with 1 (*very strong disagreement*) and 7 (*very strong agreement*) and the sixth anchored with 1 (*very unhappy*) and 10 (*perfectly happy*). High scores on all items indicate a quality marriage. All fit indices of the initial model were acceptable, with the exception of one score (RMSEA = 0.096). A modification index suggested to freely estimate the error covariance between two similarly worded mother-reported items: "My relationship with my partner is very stable" and "My relationship with my partner is strong". By allowing this covariance, the model provided an adequate fit for the data, $\chi^2(52) = 112.68$, $p < .001$; $\chi^2/df = 2.17$, CFI = 0.98, TLI = 0.97, RMSEA = 0.072, SRMR = 0.030. Factor loadings ranged from 0.79 to 0.94 for mother reports and from 0.74 to 0.96 for father reports. Both constructs were interdependent ($r = .71$, $p < .001$). Scale-composite reliability (ρ) was 0.94 for both mothers and fathers.

Partner support was measured according to five items adapted from the Netherlands Kinship Panel Study (Dykstra et al., 2005). Mothers and fathers rated the extent to which they receive support from their partners regarding various life domains (e.g., use of leisure and decisions about work). All the items were scored along a 4-point Likert scale ranging from 1 (*no support from the partner*) to 5 (*strong support from the partner*). The initial model showed a good fit, $\chi^2(34) = 39.79$, $p = .23$; $\chi^2/df = 1.17$, CFI = 0.99, TLI = 0.99, RMSEA = 0.027, SRMR = 0.033. Factor loadings ranged from 0.71 to 0.85 for mother reports and from 0.54 to 0.79 for father reports. Neither construct was independent ($r = .50$, $p < .001$). Scale-composite reliability (ρ) was 0.88 for mothers and 0.83 for fathers.

The eight-item IAI (Kurdek, 1994) was used to assess the extent to which respondents and their spouses engaged in couple-level patterns of ineffective arguing. Mothers and fathers were instructed to indicate the extent to which they agreed (1 = *strongly disagree* to 5 = *strongly agree*) that each statement (e.g., "Overall, our arguments are brief and quickly forgotten") fits their relationship. Confirmatory factor analysis revealed that all indicators loaded significantly with the latent construct, although one father-reported indicator loaded only 0.34. We decided to omit this item. The model showed a relatively acceptable fit, but it could be improved by allowing an error covariance between two closely related father-reported items ("Overall, I'd say we're pretty good at solving our problems" and "Overall, our arguments are brief and quickly forgotten"). This resulted in an adequate-to-good fit of the model, $\chi^2(102) = 199.39$, $p < .001$; $\chi^2/df = 1.95$, CFI = 0.93, TLI = 0.92, RMSEA = 0.065, SRMR = 0.057. Factor loadings ranged from 0.45 to 0.89 for mother reports and from 0.47 to 0.86 for father reports. Both constructs were interdependent ($r = .60$, $p < .001$). Scale-composite reliability (ρ) was 0.86 for mothers and 0.85 for fathers.

Parenting style

The Parenting Style Inventory II (Darling, Cumsille, & Peña-Alampay, 2005; Darling & Toyokawa, 1997) was administered to children to assess the parenting styles of mothers and fathers. The Parenting Style Inventory

was designed to assess the construct of parenting style independently of parenting practice (Darling & Toyokawa, 1997). *Responsiveness* assesses the extent to which parents show affective warmth, acceptance, and involvement (e.g., "I can count on my mother to help me out if I have a problem"). *Demandingness* refers to the extent to which parents show control and supervision in their parenting (e.g., "My mother really expects me to follow family rules"). All the items were scored along a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

Confirmatory factor analysis on the items of the demandingness subscale revealed that one indicator ("If I don't behave myself, my mother/father will punish me") did not load significantly with the latent construct of mothers and that of fathers. After omitting this item, all indicators loaded significantly on the latent construct, although one indicator's loading was still low (0.18 for mothers and 0.17 for fathers). We therefore omitted this indicator as well, resulting in a model with three indicators for demandingness on the part of the mother and on the part of the father. To improve the model, we freed up an error covariance between the same items in the latent construct of mothers and that of fathers ("My mother/father really lets me get away with things"). The model then showed a good fit, $\chi^2(7) = 10.93$, $p = .14$; $\chi^2/df = 1.56$, CFI = 0.99, TLI = 0.97, RMSEA = 0.050, SRMR = 0.040. Factor loadings ranged from 0.38 to 0.92 for mothers' demandingness and from 0.52 to 0.95 for fathers' demandingness. Both constructs were interdependent ($r = .55$, $p < .001$). Scale-composite reliability (ρ) was 0.63 for mothers' demandingness and 0.74 for fathers' demandingness.

Confirmatory factor analysis on the items of the responsiveness subscale revealed that all indicators loaded significantly with the latent construct, although one indicator with fathers' responsiveness loaded only 0.22. Because the responsiveness of both mothers and fathers was rated by the same person, we decided to omit this item in the latent constructs of both fathers and mothers. After omitting this item, factor loadings ranged from 0.46 to 0.79 for mothers' responsiveness and from 0.44 to 0.78 for fathers' responsiveness. The model showed an acceptable fit to the data, $\chi^2(19) = 46.94$, $p < .01$; $\chi^2/df = 2.47$, CFI = 0.94, TLI = 0.91, RMSEA = 0.080, SRMR = 0.053. Both constructs were interdependent ($r = .45$, $p < .001$). Scale-composite reliability (ρ) was 0.71 for mothers' responsiveness and 0.76 for fathers' responsiveness.

Control variables

Researchers who have investigated parenting indicate that sociodemographic characteristics (e.g., educational level of the parents) are often associated with parenting styles (Frias-Armenta & McCloskey, 1998; Simons, Whitbeck, Conger, & Melby, 1990). To determine whether sociodemographic variables should be included as covariates in the analyses, we examined the relation between the age and gender of the child, the age and educational levels of the mother and the father, and the outcome variables. The analysis revealed a number of significant associations among the sociodemographic variables considered. Mother's age was significantly associated with mother's demandingness ($\beta = -.173$, $SE = 0.075$, $p = .02$), and father's age was significantly associated with father's demandingness ($\beta = -.155$, $SE = 0.076$, $p = .041$). Mother's age and father's age were therefore included as covariates in the analyses predicting mother's and father's demandingness, respectively. Child age was significantly associated with father's responsiveness ($\beta = -.154$, $SE = 0.080$, $p = .054$), and it was therefore included as a covariate in the analyses predicting father's responsiveness.

Results

Measurement models

We evaluated the model fit of all measurement models. As shown in Tables 1 and 2, all measurement models fitted the data well. Because the objectives of our research require the inclusion of separated scores for mothers' and fathers' latent constructs, we conducted for each construct a test to specify

Table 1. *Parenting stress, marital relationship, and demandingness*

		Testing for actor partner effects		Testing for gender differences		Mother	Father	Model fit[a]							
Demandingness		β	*SE*	*B*	*SE*	R^{2b}	R^{2c}	χ^2	*df*	*p*	χ^2/df	CFI	TLI	RMSEA	SRMR
Childrearing stress															
Actor	Mother	0.07	0.10	0.06	0.02*	5.7	7.5	66.6	63	0.353	1.06	1.00	1.00	0.016	0.040
	Father	0.22	0.10*					67.7	65	0.384	1.04	1.00	1.00	0.014	0.039
Partner	Mother	0.14	0.10	0.03	0.03										
	Father	0.03	0.10												
Role restriction															
Actor	Mother	0.03	0.09	0.01	0.02	2.4	2.4	111.3	90	0.064	1.24	0.98	0.97	0.032	0.048
	Father	0.02	0.08					112.3	92	0.074	1.22	0.98	0.97	0.031	0.048
Partner	Mother	−0.06	0.09	0.00	0.02										
	Father	0.04	0.09												
QMI						4.6	2.9								
Actor	Mother	0.23	0.11*	0.04	0.03			244.7	155	0.000	1.58	0.97	0.97	0.050	0.043
	Father	−0.10	0.11					246.4	157	0.000	1.57	0.97	0.97	0.050	0.043
Partner	Mother	−0.18	0.11	−0.02	0.03										
	Father	0.09	0.11												
Partner support						3.9	2.3								
Actor	Mother	−0.04	0.09	−0.04	0.05			143.6	121	0.079	1.19	0.98	0.98	0.029	0.046
	Father	−0.03	0.10					144.6	123	0.088	1.18	0.98	0.98	0.028	0.046
Partner	Mother	−0.11	0.10	−0.06	0.05										
	Father	−0.03	0.09												
IAI						2.6	3.5								
Actor	Mother	−0.10	0.11	0.01	0.08			300.4	215	0.000	1.40	0.95	0.95	0.042	0.053
	Father	0.14	0.11					301.8	217	0.000	1.39	0.95	0.95	0.041	0.053
Partner	Mother	0.05	0.11	−0.02	0.07										
	Father	−0.08	0.10												

Note. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; QMI = Quality of Marriage Index; IAI = Ineffective Arguing Inventory.

[a]First lines refer to the model fit of measurement model, second lines refer to the fit of structural models. [b]Including mother age. [c]Including father age.

* $p \leq .05$.

Table 2. *Parenting stress, marital relationship, and responsiveness*

		Testing for actor partner effects		Testing for gender differences		Mother	Father	Model fit							
Responsiveness		B	*SE*	*B*	*SE*	R^{2a}	R^{2b}	χ^2	*df*	*p*	χ^2/df	CFI	TLI	RMSEA	SRMR
Childrearing stress															
Actor	Mother	−0.10	0.11	−0.03	0.02	<1	6.3	116.6	81	0.006	1.44	0.97	0.96	0.044	0.046
	Father	−0.06	0.11					117.2	82	0.007	1.43	0.97	0.96	0.043	0.047
Partner	Mother d	0.04	0.11	−0.02	0.02										
	Father	−0.14	0.10												
Role restriction															
Actor	Mother	−0.13	0.09	−0.06	0.02**	0.03	7.3	156.9	110	0.002	1.43	0.96	0.95	0.043	0.054
	Father	−0.21	0.09*					158.8	111	0.002	1.43	0.96	0.95	0.044	0.055
Partner	Mother	−0.07	0.10	0.02	0.02										
	Father	0.16	0.09†												
QMI															
Actor	Mother	0.03	0.12	−0.03	0.03	<1	9.5	263.3	179	0.000	1.47	0.98	0.97	0.046	0.044
	Father	−0.16	0.12					263.9	180	0.000	1.47	0.98	0.97	0.045	0.044
Partner	Mother	−0.01	0.13	0.09	0.03**										
	Father	0.34	0.11**												
Partner Support															
Actor	Mother	0.03	0.10	−0.01	0.05	<1	6.9	196.1	143	0.002	1.37	0.96	0.96	0.040	0.051
	Father	−0.06	0.10					197.0	144	0.002	1.27	0.96	0.96	0.040	0.050
Partner	Mother	0.05	0.11	0.12	0.05*										
	Father	0.23	0.09*												
IAI															
Actor	Mother	−0.12	0.11	−0.02	0.08	1.1	6	372.9	242	0.000	1.54	0.93	0.92	0.049	0.057
	Father	0.06	0.11					373.7	243	0.000	1.54	0.93	0.92	0.049	0.052
Partner	Mother	0.06	0.12	−0.08	0.09										
	Father	−0.21	0.11*												

Note. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; QMI = Quality of Marriage Index; IAI = Ineffective Arguing Inventory.

[a]Including child age. [b]First lines refer to the model fit of measurement model, second lines refer to the fit of structural models.

† $p < .10$. * $p \leq .05$. ** $p \leq .01$.

whether such a distinction was warranted. Following a procedure used in a study by Yucel and Gassanov (2010), we compared models in which each maternal and paternal constructs are modeled separately to produce a model in which both constructs are combined into a single latent construct. The χ^2 difference tests indicated that combining the parent-reported determinants decreased the fit significantly, with $\chi^2(1) = 177.61$, $p < .001$ for childrearing stress, $\chi^2(1) = 246.02$, $p < .001$ for role restriction, $\chi^2(1) = 650.1$, $p < .001$ for marital quality, $\chi^2(1) = 222.50$, $p < .001$ for partner support, and $\chi^2(1) = 239.12$, $p < .001$ for ineffective arguing. Furthermore, χ^2 difference tests indicated that combining the child-reported outcome constructs decreased the fit significantly, with $\chi^2(1) = 126.99$, $p < .001$ for responsiveness and $\chi^2(1) = 52.14$, $p < .001$ for demandingness. As such, all latent constructs were modeled separately in our analyses.

Structural models: APIMs

To test our research questions and hypotheses, we conducted several APIM structural equation models involving (a) the relations between each of the five latent predictors and parents' demandingness and (b) the relations between each of the five latent predictors and parents' responsiveness. We chose to use single latent predictors of both mothers and fathers in our models (e.g., mothers' and fathers' childrearing stress) rather than multiple latent predictors (e.g., mothers' and fathers' childrearing stress and role restriction), as the latter would have generated models with too many manifest variables in relation to the sample size of this study.

For each relation, analyses were conducted in three steps. First, we investigated the possibility of significant actor and partner effects of the independent variables on parenting style. The models included two latent predictors and two latent outcome variables (e.g., the relation between mothers' childrearing stress and mothers' responsiveness and the relation between fathers' childrearing stress and fathers' responsiveness), thus allowing us to test for the actor and partner effects of both mothers and fathers simultaneously.

Second, we tested whether the actor or partner effects differed significantly between fathers and mothers by specifying equality constraints (i.e., nested models). Because constraining one path to be equal to another path yields a gain of one degree of freedom, a statistically significant change in the chi-square value as compared with the model with no equality constraints indicates that actor or partner effects are statistically different from each other and stronger for one parent. A nonsignificant change in the chi-square value as compared with the model with no equality constraints indicates no differences between the two parents.

Finally, we examined whether the models are more actor, partner, couple, or contrast oriented. To do so, we followed the procedure described by Kenny and Ledermann (2010): We calculated the ratio of the partner effect to the actor effect, also called the k parameter. If k is near zero, the actor-only pattern is indicated; if k is near 1, we have a couple pattern; and the contrast pattern occurs if k is -1. However, if the partner effects were much stronger than the actor effects, we defined k as the ratio of actor to partner effects, whereby a k near zero indicates a partner-only effect (see also Kenny and Ledermann, 2010, p. 364). We then computed the bootstrap confidence interval (CI) for k. These CIs provide direct information on whether a specific pattern takes place. Defining k as the partner–actor ratio, the actor-only pattern is verified when 0 but not 1 and -1 is in the CI, the couple pattern is supported when 1 but not 0 is in the interval, and the contrast pattern is verified when -1 but not 0 is in the interval. Defining k as the actor–partner ratio, the partner-only pattern is verified when 0 but not 1 and -1 is in the CI. Next, all ks that support a specific pattern are fixed to 0 (actor-only or partner-only pattern), -1 (contrast pattern), or 1 (couple pattern). Then, we reestimate this simpler model and compare it with the more general model implying no specific pattern. A nonsignificant change in the chi-square value indicates that the more parsimonious model is consistent with

the data. We refer to Kenny and Ledermann (2010) and Ledermann, Macho, and Kenny (2011) for a more detailed description of the procedure.

Demandingness: Testing the APIM

We evaluated five SEM APIMs in which stress or support on the part of mothers and fathers predicted demandingness on the part of mothers and fathers. As shown in Table 1, all models had an adequate to good fit. The models revealed a significant actor effect between fathers' childrearing stress and fathers' demandingness ($\beta = .22$, $p < .05$), indicating that higher levels of childrearing stress on the part of fathers results in more demandingness. Constraining the actor effects to be equal revealed no gender differences, $\chi^2(1) = .37$, *ns*, indicating that the actor effects of childrearing stress on demandingness are similar for mothers and fathers ($b = .05$, $p < .05$). The k, defined as the partner–actor ratio, for the effects of childrearing stress was .06. The 95% CI ranged from $-.001$ to .131, which supports the actor-only pattern as zero is included in the CI. After placing constraints on k, the model comparison test supported the more parsimonious model, which indicates that the model can be described as an actor-only model.

Furthermore, the APIM tests revealed a significant actor effect of mothers' quality of marriage (QMI) on mothers' demandingness ($\beta = .23$, $p < .05$). To test for gender differences, we constrained the actor paths to be equal. The χ^2 difference test revealed no significant differences, $\chi^2(1) = .93$, *ns*, with $b = .04$, *ns*. In other words, the actor effects of QMI on demandingness that were found are similar for mothers and fathers, although the constrained model revealed that these spillover effects are not significant.

Responsiveness: Testing the APIM

Table 2 shows five SEM APIM in which the stress or support levels of mothers and fathers predict the responsiveness of mothers and fathers. The fits of all models were adequate to good. The models showed a significant actor effect between fathers' role restriction and responsiveness ($\beta = -.21$, $p < .05$). The partner effect of mothers' role restriction on fathers' responsiveness was significant at the trend level ($\beta = .16$, $p = .07$). Constraining the actor effects to be equal revealed no gender differences, $\chi^2(1) = 1.05$, *ns*, indicating that the actor effects of role restriction on responsiveness are similar for mothers and fathers ($b = -.05$, $p < .01$). Constraining the partner effects to be equal revealed no gender differences, $\chi^2(1) = 1.99$, *ns*, and it resulted in the absence of the above-mentioned trend effect ($b = .05$, *ns*). The k, defined as the partner–actor ratio, for the effects of role restriction was $-.059$. The 95% CI ranged from $-.130$ to $-.007$. Albeit the near-zero value of k indicated an actor-oriented model, the actor-only pattern was not supported (i.e., zero is not included in the CI).

With regard to marital relationship, significant partner effects were found between the QMI of mothers ($\beta = .34$, $p < .01$), mothers' perception of partner support ($\beta = .22$, $p < .05$), ineffective arguing on the part of mothers ($\beta = -.20$, $p < .05$), and responsiveness on the part of fathers. Further tests, however, revealed no gender differences in these partner paths, with $\chi^2(1) = 2.60$, *ns*, $b = .08$, $p < .01$ for the QMI; $\chi^2(1) = 1.13$, *ns*, $b = .11$, $p < .05$ for partner support; and $\chi^2(1) = 2.35$, *ns*; $b = -.07$, *ns* for ineffective arguing. The k, defined as the actor–partner ratio, was .086 for QMI and .116 for partner support. The 95% CIs ranged from $-.007$ to .221 for QMI and from $-.041$ and .349 for partner support, which support partner-only patterns as zero is included in the CIs. After placing constraints on the ks, model comparison tests supported the more parsimonious models, which indicates that both models can be described as partner-only models.

Discussion

Over the past decades, the parenting literature has contained frequent calls for the systematic inclusion of both mothers and fathers. In this study, we investigated how two sources of stress and support experienced by fathers and mothers influence their own parenting

styles, as well as the parenting styles of their partners. Focusing on the APIM, the aim was to assess actor and partner effects of parenting stress, positive and negative aspects of marital relationship on parenting styles, to examine possible gender differences in the pathways and to assess whether the models are more actor, partner, contrast, or couple oriented. Although the results provide evidence for both actor- and partner-oriented patterns, no gender differences were found. The interpretation of the data is complicated, however, as the effects seem to depend on both type of determinants and parenting style.

More specifically, we found significant actor effects of parenting stress on parenting styles for both mothers and fathers, whereas no actor effects were found between positive and negative aspects of marital relationship and parenting styles. The latter finding is inconsistent with other studies, which have reported modest but consistent interrelatedness between global marital quality and parenting (Erel & Burman, 1995), as well as between marital conflict and parenting (Krishnakumar & Buehler, 2000). Conversely, we found partner effects between positive aspects of marital relationship and responsive parenting style for both fathers and mothers, whereas no partner effects were found between parenting stress and parenting styles. The results thus suggest that the patterns for the effects of parenting stress on demanding and responsive parenting styles are actor oriented, whereas the patterns for the effects of positive aspects of marital relationship on responsive parenting style are partner oriented, in that an individual's parenting is influenced by the partner's feelings of marital quality and support, instead of the individual's own feelings of marital quality and support. One possible explanation is that parenting stress is more covert for the partner as it may be something individually determined, and therefore leading to actor effects and not to partner effects. The partner relationship, on the other hand, is shared between partners and is more overt. An alternative explanation for the absence of actor effects of marital relationship on parenting is that most studies on the influence of marital relationship on parenting use a single score or construct to represent the marital relationship, thereby neglecting differences in the feelings of the two spouses with regard to the marital relationship. Indeed, the few parenting studies that use reports from both fathers and mothers regarding marital relationship and/or marital discord either total or average the scores of both spouses (Sturge-Apple, Davies, Boker, & Cummings, 2004) or use the summed scores as manifest indicators to create a single latent construct (Kaczynski et al., 2006). In addition, many parenting studies assess marital relationship according to one reporter (Davies, Sturge-Apple, Woitach, & Cummings, 2009) or according to one spouse and an independent observer (Buehler et al., 2006). As such, these studies are not able to assess truly relational phenomena (Kenny et al., 2006). Moreover, the actor effects found in prior studies that used summed or average scores might actually reflect both actor and partner effects. In this study, we view marital relationships as well as parenting styles as climates in which behaviors are expressed. Although parenting style is a constellation of attitudes toward the child (Darling & Steinberg, 1993), marital relationship can be seen as a compilation of feelings and attitudes between two spouses, with each parent experiencing the quality of his or her marriage somewhat differently. It can be further assumed that men and women want to maintain the same climate in their roles as parents and in their roles as spouses. Although parents might acquiesce in their own feelings of marital quality and support, this does not implicate that they acquiesce in their partner's feelings of marital quality and support. It is therefore plausible that an individual's parenting style might be more influenced by the partner's perceptions of the marital quality and support than it is by the individual's own perception of marital quality and support. Another possible explanation for the lack of actor effects between marital relationship and parenting styles is that our measurement of marital relationship and parenting styles differs from previous studies. In this study, we were interested in marital quality and partner support as positive measures

of marital relationship and ineffective arguing as a negative measure of marital relationship. Although the meta-analytic study by Erel and Burman (1995) provided evidence for linkages between positive aspects of marital relationship and parenting, the greater part of the studies on the association between marital relationship and parenting, however, focused on negative aspects of marital relationship, whereby Krishnakumar and Buehler (2000) found that the strongest associations between interparental conflict and parenting occur when interparental conflict is measured as a combination of disagreement and overt conflict style or purely as overt conflict style. Furthermore, we focused on demandingness and responsiveness, two parenting styles that are not necessarily ineffective, whereas some other scholars focused on harsh punishment or lax control. In future studies, it might be interesting to further investigate the relative size of actor and partner effects, taking into account different dimensions of marital relationship and parenting behaviors.

Interestingly, actor effects were found for the demandingness and responsiveness of parenting styles, whereas partner effects were found only for responsive parenting. These results are somewhat similar to those reported in a study by Nelson and colleagues (2009), albeit in a different context. Nelson and colleagues investigated spillover and crossover effects between family stress and the supportive and nonsupportive techniques that parents use to teach children about emotions. The authors found spillover effects for both supportive and nonsupportive parent responses to children's negative emotions, whereas crossover effects were found only with supportive responses. Although demandingness might be somewhat similar to nonsupportive parenting discussed in the study by Nelson and colleagues, responsiveness is more similar to their notion of supportive parenting. As suggested by Nelson and colleagues, one possible explanation for the findings is that "spillover, which results from stress in other contexts of one's own life, is more personal and therefore, has the possibility to be more negative than stress stemming from one's partner" (p. 677). We concur with this possibility.

We also investigated whether the strength of the pathways differs between mothers and fathers. Previous studies have suggested that, for men, the role of father and husband may be less distinct than are the roles of mother and wife for women. It is therefore possible that fathering may be more likely determined by the state of the marital relationship (Coiro & Emery, 1998; Parke, 2002). This hypothesis has been endorsed mostly by studies that do not directly test the effects of parent gender (Cummings et al., 2010). In a review on mothering and fathering, however, Coiro and Emery (1998) suggested that the pattern of supportive evidence for the fathering-vulnerability hypothesis may not be as pervasive as it may seem at first glance, as few analyses of mother–father differences are based on within-couple comparisons and, as such, are not able to grasp the interrelational uniqueness of the dyads. Indeed, our results clearly demonstrate that, at first glance, when we did not constraint the pathways of the dyads to be equal (i.e., in the unrestricted analyses), fathering appears to be more affected than mothering. When testing for gender differences, however, the strength of the pathways between stress and parenting appeared equally strong for mothers and fathers. As such, our findings do not lend support to the fathering-vulnerability hypothesis.

This study contributes to the current body of research using rigorous methods to examine the associations of parenting stress, positive and negative aspects of marital relationship with the parenting styles of mothers and fathers. Among others features, our study uses latent constructs for parenting stress, marital relationship, and parenting styles, adjusted for measurement error. Another advantage of this research involves the use of parent reports of parenting stress and marital relationship, combined with child reports of parenting styles, thus avoiding the problem of common-method variance. Furthermore, the framework of the APIM enabled us to explore gender differences and to test whether the models are more actor, partner, contrast, or couple oriented. Nonetheless, it is important

to note a number of limitations that attenuate the clarity of the current results. First, given the small sample size and the use of latent constructs, it was impossible to investigate different measures of marital relationship and parenting stress simultaneously as determinants of parenting styles. Given the actor effects of parenting stress on parenting styles and the partner effects of marital relationship on parenting styles, future studies (with larger sample sizes) should consider the mutual influence of various sources of stress on mothering and fathering. Second, although it was not the focus of this study, the influence of several background variables should be examined in a more sophisticated way. For example, in this study, the gender of the child was not significantly related to parenting of either the mother or the father, despite the suggestions of some authors that child gender moderates the relation between interparental discord and changes in parenting practices (Cummings et al., 2010; Sturge-Apple et al., 2004). It might be interesting for future studies to conduct more thorough investigation of the influence of the gender of the child, using multiple-group SEM with larger sample sizes. Finally, the cross-sectional nature of the data makes causality difficult to establish. Although associations between stress and parenting styles can be examined, the time ordering among the variables is not clear. Despite the fact that results from the few available longitudinal studies indicate that marital discord and parenting stress seem to proceed parenting (Abidin, 1990; Floyd, Gilliom, & Costigan, 1998), corroboration of our findings produced by longitudinal data would lend credibility to the findings.

Despite its limitations, this study contributes to the literature by demonstrating actor effects of parenting stress on demanding and responsive parenting styles, as well as partner effects of positive aspects of marital relationship on responsive parenting style. This study further shows that the strength of these pathways is similar for both mothers and fathers, and thus do not support the hypothesis that the parenting of fathers is more vulnerable than the parenting of mothers is to stress derived from the marital relationship.

References

Abidin, R. (1990). Introduction to the special issue: The stresses of parenting. *Journal of Clinical Child Psychology, 19*, 298–301.

Amato, P. R., Meyers, C. E., & Emery, R. E. (2009). Changes in nonresident father–child contact from 1976 to 2002. *Family Relations, 58*, 41–53.

Aunola, K., Stattin, H., & Nurmi, J. E. (2000). Parenting styles and adolescents' achievement strategies. *Journal of Adolescence, 23*, 205–222.

Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296–3319.

Barnett, M., Deng, M., Mills-Koonce, W., Willoughby, M., & Cox, M. (2008). Interdependence of parenting in mothers and fathers of infants. *Journal of Family Psychology, 22*, 561–573.

Baumrind, D. (1991). The influence of parenting style on adolescent competence and substance use. *Journal of Early Adolescence, 11*, 56–95.

Belsky, J. (1984). The determinants of parenting. A process model. *Child Development, 55*, 83–96.

Belsky, J., Gilstrap, B., & Rovine, M. (1984). The Pennsylvania Infant and Family Development Project: Stability and change in mother–infant and fahter–infant interaction in a a family setting at one, 3 and 9 months. *Child Development, 55*, 692–705.

Belsky, J., Woodworth, S., & Crnic, K. (1996). Trouble in the second year: Three questions about family interaction. *Child Development, 67*, 556–578.

Belsky, J., Youngblade, L., Rovine, M., & Volling, B. (1991). Patterns of marital change and parent–child interaction. *Journal of Marriage and the Family, 53*, 487–498.

Benson, M. J., Buehler, C., & Gerard, J. M. (2008). Interparental hostility and early adolescent problem behavior—Spillover via maternal acceptance, harshness, inconsistency, and intrusiveness. *Journal of Early Adolescence, 28*, 428–454.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246.

Bronfenbrenner, U. (1989). Ecological systems theory. *Annual Child Development, 6*, 187–249.

Bronte-Tinkew, J., Horowitz, A., & Carrano, J. (2010). Aggravation and stress in parenting: Association with coparenting and fahter engagement among resident fathers. *Journal of Family Issues, 31*, 525–555.

Brown, T. (2006). *Confirmatory factor analysis for applied research.* New York, NY: Guilford.

Buehler, C., Benson, M. J., & Gerard, J. M. (2006). Interparental hostility and early adolescent problem behavior: The mediating role of specific aspects of parenting. *Journal of Research on Adolescence, 16*, 265–291.

Buehler, C., & Gerard, J. (2002). Marital conflict, ineffective parenting, and children's and adolescent's maladjustment. *Journal of Marriage and the Family, 64*, 78–92.

Byrne, B. (2001). *Structural equation modeling with Amos: Basic concepts, applications and prgramming.* Mahwah, NJ: Erlbaum.

Coiro, M. J., & Emery, R. E. (1998). Do marriage problems affect fathering more than mothering? A quantitative and qualitative review. *Clinical Child and Family Psychology Review, 1*, 23–40.

Cooper, C., McLanahan, S., Meadows, S., & Brooks-Gunn, J. (2009). Family structure transitions and maternal parenting stress. *Journal of Marriage and the Family, 71*, 558–574.

Cox, M. J., & Paley, B. (1997). Families as systems. *Annual Review of Psychology, 48*, 243–267.

Crnic, K., Arbona, A. P. Y., Baker, B., & Blacher, J. (2009). Mothers and fathers together: Contrasts in parenting across preschool to early school age in children with developmental delays. *International Review of Research in Mental Retardation, 37*, 3–30.

Crnic, K., Gaze, C., & Hoffman, C. (2005). Cumulative parenting stress across the preschool period: Relations to maternal parenting and child behaviour at age 5. *Infant and Child Development, 14*, 117–132.

Crnic, K., & Greenberg, M. (1990). Minor parenting stresses with young children. *Child Development, 61*, 1628–1637.

Crnic, K., Greenberg, M., Ragozin, A., Robinson, N., & Basham, R. (1983). The effects of stress and social support on mothers of premature and full-term infants. *Child Development, 45*, 209–217.

Crnic, K., & Low, C. (2002). Everyday stresses and parenting. In M. Bornstein (Ed.), *Handbook of parenting: Vol. 5. Practical issues in parenting* (2nd ed., pp. 243–267). Mahwah, NJ: Erlbaum.

Cummings, E. M., Goeke-Morey, M. C., & Raymond, J. (2004). Fathers in family context: Effects of marital quality and marital conflict. In M. Lamb (Ed.), *The role of the father in child development* (4th ed., pp. 196–221). New York, NY: Wiley.

Cummings, E. M., Merrilees, C. E., & George, M. W. (2010). Fathers, marriages and families: Revisiting and updating the framework for fathering in family context. In M. Lamb (Ed.), *The role of the father in child development* (5th ed., pp. 154–176). Hoboken, NJ: Wiley.

Cummings, E. M., & O'Reilly, A. W. (1997). Fathers in family context: Effects of marital quality on child adjustment. In M. Lamb (Ed.), *The role of the fahter in child development* (3rd ed., pp. 49–65). New York, NY: Wiley.

Darling, N., Cumsille, P., & Peña-Alampay, L. (2005). Rules, legitimacy of parental authority, and adolescent autonomy in Childe, the Phillipines and the United States. *New Directions in Child and Adolescent Development, 108*, 47–60.

Darling, N., & Steinberg, L. (1993). Parenting style as context. An integrative model. *Psychological Bulletin, 113*, 487–496.

Darling, N., & Toyokawa, T. (1997). *Construction and validation of the Parenting Style Inventory II.* Unpublished manuscript, The Pensylvania State University.

Davies, P. T., Sturge-Apple, M., Woitach, M., & Cummings, E. M. (2009). A process analysis of the transmission of distress from interparental conflict to parenting: Adult relationship security as an explanatory mechanism. *Development Psychology, 45*, 1761–1773.

Deater-Deckard, K. (1998). Parenting stress and child adjustment: Some old hypotheses and new questions. *Clinical Psychologist, 5*, 314–332.

Deater-Deckard, K., Dodge, K. A., Bates, J. E., & Pettit, G. S. (1998). Multiple risk factors in the development of externalizing behavior problems: Group and individual differences. *Development and Psychopathology, 10*, 469–493.

Deater-Deckard, K., & Scarr, S. (1996). Parenting stress among dual-earner mothers and fathers: Are there gender differences? *Journal of Family Psychology, 10*, 45–59.

Deater-Deckard, K., Smith, J., Ivy, L., & Petrill, S. A. (2005). Differential perceptions of and feelings about-sibling children: Implications for research on parenting stress. *Infant and Child Development, 14*, 211–225.

Dykstra, P. A., van Tilburg, T. G., & Gierveld, J. D. (2005). Changes in older adult loneliness—Results from a seven-year longitudinal study. *Research on Aging, 27*, 725–747.

Erel, O., & Burman, B. (1995). Interrelatedness of marital relations and parent–child relations. A meta-analytic review. *Psychological Bulletin, 118*, 108–132.

Fagan, J., Bernd, E., & Whiteman, V. (2007). Adolescent fathers' parenting stress, social support, and involvement with infants. *Journal of Research on Adolescents, 17*, 1–22.

Fincham, F. D., & Beach, S. R. (2010). Marriage in the new millenium: A decade in review. *Journal of Marriage and the Family, 72*, 630–649.

Floyd, F., Gilliom, L., & Costigan, C. (1998). Marriage and the parenting alliance: Longitudinal prediction of change in parenting perceptions and behaviors. *Child Development, 69*, 1461–1479.

Frias-Armenta, M., & McCloskey, L. A. (1998). Determinants of harsh parenting in Mexico. *Journal of Abnormal Child Psychology, 26*, 129–139.

Grych, J. H. (2002). Marital relationships and parenting. In M. H. Bornstein (Ed.), *Handbook of parenting* (Vol. 4, pp. 231–252). Mahwah, NJ: Erlbaum.

Hakvoort, E., Bos, H., Van Balen, F., & Hermanns, J. (2011). Spillover between mothers' postdivorce relationships: The mediating role of parenting stress. *Personal Relationships.* doi: 10.1111/j.1475-6811.2011.01351.x

Hu, L., & Bentler, P. (1999). Cut off criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.

Hutch-Bocks, A., & Hughes, H. (2008). Parenting stress, parenting behavior, and children's adjustment in families experiencing intimate partner violence. *Journal of Family Violence, 23*, 243–251.

Isacco, A., Garfield, C., & Rogers, T. (2010). Correlates of coparental support among married and nonmarried fathers. *Psychology of Men and Masculinity, 11*, 262–278.

Kaczynski, K. J., Lindahl, K. M., Mailik, N. M., & Laurenceau, J. P. (2006). Marital conflict, maternal and paternal parenting, and child adjustment: A test of mediation and moderation. *Journal of Family Psychology, 20*, 199–208.

Kashy, D. A., & Kenny, D. A. (2000). The analysis of data from dyads and groups. In H. T. Reis & C. M. Judds (Eds.), *Handbook of research methods in social psychology*. (pp. 451–477). New York, NY: Cambridge University Press.

Kenny, D., Kashy, D., & Cook, W. (2006). *Dyadic data analysis*. New York, NY: Guilford.

Kenny, D. A., & Ledermann, T. (2010). Detecting, measuring, and testing dyadic patterns in the actor–partner interdependence model. *Journal of Family Psychology, 24*, 359–366.

Kjobli, J., & Hagen, K. A. (2009). A mediation model of Interparental collaboration, parenting practices, and child externalizing behavior in a clinical sample. *Family Relations, 58*, 275–288.

Kline, R. (2005). *Principles and practices of structural equation modeling* (2nd ed.). New York, NY: Guilford.

Krishnakumar, A., & Buehler, C. (2000). Interparental conflict and parenting behaviors: A meta-analytic review. *Family Relations, 49*, 25–44.

Kurdek, L. A. (1994). Conflict-resolution styles in gay, lesbian, heterosexual nonparent and heterosexual parent couples. *Journal of Marriage and the Family, 56*, 705–722.

Lamb, M. (2010). How do father influence children's development? Let me count the ways. In M. Lamb (Ed.), *The role of the father in child development* (5th ed., pp. 1–26). Hoboken, NJ: Wiley.

Ledermann, T., & Macho, S. (2009). Mediation in dyadic data at the level of the dyads: A structural equation modeling approach. *Journal of Family Psychology, 23*, 661–670.

Ledermann, T., Macho, S., & Kenny, D. A. (2011). Assessing mediation in dyadic data using the actor–partner interdependence model. *Structural Equation Modeling, 18*, 595–612.

Litovsky, V., & Dusek, J. (1985). Perceptions of child rearing and self-concept development during the early adolescent years. *Journal of Youth and Adolescence, 14*, 373–387.

Minuchin, S. (1974). *Families and family therapy*. Cambridge, MA: Harvard University Press.

Muthén, L., & Muthén, B. (2008). *Mplus user's guide. Version 5.2*. Los Angeles, CA: Author.

Nelson, J. A., O'Brien, M., Blankson, A. N., Calkins, S. D., & Keane, S. P. (2009). Family stress and parental responses to children's negative emotions: Tests of the spillover, crossover, and compensatory hypotheses. *Journal of Family Psychology, 23*, 671–679.

Norton, R. (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family, 45*, 141–151.

Parke, R. (2002). Fathers and families. In M. H. Bornstein (Ed.), *Handbook of parenting: Vol. 3. Being and becoming a parent* (2nd ed., pp. 27–74). Mahwah, NJ: Erlbaum.

Pleck, J. (2010). Paternal involvement: Revised conceptualization and theoretical linkages with child outcomes. In M. Lamb (Ed.), *The role of the father in child development* (5th ed., pp. 58–93). Hoboken, NJ: Wiley.

Purdie, N., Carroll, A., & Roche, L. (2004). Parenting and adolescent self-regulation. *Journal of Adolescence, 27*, 663–676.

Raykov, T. (2009). Evaluation of scale reliability for unidimensional measures using latent variable modeling. *Measurement and Evaluation in Counseling and Development, 42*, 223–232.

Raykov, T., & Marcoulides, G. A. (2006). On multilevel model reliability estimation from the perspective of structural equation modeling. *Structural Equation Modeling—A Multidisciplinary Journal, 13*, 130–141.

Repetti, R. L. (1987). Individual and common components if the social-environment at work and psychological well-being. *Journal of Personality and Social Psychology, 52*, 710–720.

Rodgers, A. (1998). Multiple sources of stress and parenting behavior. *Children and Youth Services Review, 20*, 525–546.

Simons, R. L., Whitbeck, L. B., Conger, R. D., & Melby, J. N. (1990). Husband and wife differences in determinants of parenting: A social-learning and exchange model of parental behavior. *Journal of Marriage and the Family, 52*, 375–392.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research, 25*, 173–180.

Sturge-Apple, M., Davies, P. T., Boker, S., & Cummings, E. M. (2004). Interparental discord and parenting: Testing the moderating roles of child and parent gender. *Parenting—Science and Practice, 4*, 361–380

Tucker, L. R., & Lewis, C. (1973). Reliability coefficients for maximum likelihood factor-analysis. *Psychometrika, 38*(1), 1–10.

Van den Troost, A. (2005). *Marriage in motion*. Leuven: University Press.

Wentzel, K. R. (1994). Relations of social goals pursuit to social acceptance, classroom behavior and perceived social support. *Journal of Educational Psychology, 86*, 173–182.

Woodworth, S., Belsky, J., & Crnic, K. (1996). The determinants of fathering during the child's second and third years of life: A developmental analysis. *Journal of Marriage and the Family, 58*, 679–692.

Yucel, D., & Gassanov, M. A. (2010). Exploring actor and partner correlates of sexual satisfaction among married couples. *Social Science Research, 39*, 725–738.