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Changes in the Organization of Paternal Behavior during Early and Middle Childhood


Robert H. Bradley, Amy L. Pennar, Masumi Iida, Margaret Tresch Owen, and Deborah Lowe Vandell

SYNOPSIS

Objective. The focus of this study is on changes in the strength of relations among four types of paternal behaviors (supportive presence, respect for autonomy, stimulation, and hostility) from early childhood through middle childhood. **Design.** Father-child interaction was observed for 718 dyads at four time periods: 54 months ($M = 56$ months), 1st grade ($M = 7.0$ years), 3rd grade ($M = 9.0$ years), and 5th grade ($M = 11.0$ years) using similar and age-appropriate observational paradigms. **Results.** The association between paternal supportive presence and respect for autonomy grew stronger with age. Supportive presence showed a moderate relation with stimulation at 54 months; but this association became weaker over time. A similar pattern of weakening association emerged in the relation between respect for autonomy and stimulation. Both supportive presence and respect for autonomy showed a continuing robust negative association with hostility. Finally, the relation between hostility and stimulation became stronger over time. **Conclusions.** There appears to be an evolving dialectic in the organization of paternal behavior during interactions with offspring, with some relations strengthening and others becoming weaker. Critically, the bonds fathers have with their children in early childhood tend to remain firm through middle childhood, with paternal support less often reflecting itself in directly teaching a child but more often in showing respect for the child's growing independence.

INTRODUCTION

Family life has changed over the past several decades. Two-parent households are less the norm; more mothers are employed; more children spend time in non-parental care; fathers in two-parent households are spending more time taking care of children (Pew Research Center, 2015a, 2015b; U.S. Bureau of Labor Statistics, 2019). These changes have sparked interest in the roles played by fathers in children's lives (Cabrera, Fitzgerald, Bradley, & Roggman, 2014; Palkovitz & Trask, 2014). Even granting important recent advances in research on fathers (Feldman, Bamberger, & Kanat-Maymon, 2013; Grossmann et al., 2002; McMunn, Martin, Kelly, & Sacker, 2017; NICHD Early Child Care Research Network, 2000; Scott, Nelson, & Dix, 2018), critical details about paternal behavior are lacking. For

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example, there is little documentation of how paternal behavior is organized when fathers interact with children in common situations and whether the organization of paternal behaviors during such encounters changes as children develop. More complete characterization of how the organization of paternal behavior may evolve as children age seems important given growing recognition that children respond not simply to a given behavior as it is manifest in a situation but to the aggregate or “bundle” of behaviors manifest during situations (Maccoby, 2000; Ryan, Martin, & Brooks-Gunn, 2006; Stormshak, Bierman, McMahon, Lengua, & Conduct Problems Prevention Research Group, 2000). The goal of this study is to document patterns of relations between four paternal behaviors (supportive presence, respect for autonomy, stimulation, and hostility) as they occur during interactions between fathers and their children and how the relations between those parenting behaviors shift across early and middle childhood.

The four types of paternal behavior examined in this study were selected because theory and research indicate the potential importance of each with respect to meeting children’s needs (Joussemet, Landry, & Koestner, 2008; Pleck, 2010). The first type of paternal behavior, *supportive presence*, represents the father’s emotional support and warmth provided to the child. According to Interpersonal Acceptance-Rejection Theory, paternal expressions of warmth and affection enable children to cope well with life’s challenges and engage in productive everyday activity (Rohner & Lansford, 2017). Overall, the experience of support from adult caregivers reduces the likelihood children will manifest maladaptive behavior (Lik & Meier, 2017). Having support from parents also motivates children to act in a mutually responsive way with others (Grusec, 2011); and, in accordance with Self-Determination Theory, having support from parents fulfills a child’s basic need for relatedness (Ryan & Deci, 2000). The second type of paternal behavior, *respect for autonomy*, entails the degree to which the father acknowledges and conveys respect for the child’s perspective and interests and does not impose his own in ways that undermine the child’s views. Such actions help fulfill a child’s need for autonomy; thus, enabling the child to become more motivated and self-directed (Feng, Xie, Gong, Gao, & Cao, 2019; Fousiani, Van Petegem Soenens, Vansteenkiste, & Chen, 2013; Ryan & Deci, 2000; Won & Yu, 2018). The third type of paternal behavior, *stimulation*, involves the father’s attempt to foster learning and understanding via explicit, effortful teaching. Carefully directed stimulation can foster learning and help fulfill a child’s need for competence (Bransford, Brown, & Cocking, 2000; Ryan & Deci, 2000). Lastly, *hostility* reflects the father’s expression of anger or rejection of the child. In some respects, hostility is the antithesis of supportive presence, but the two are not precise opposites in that supportive presence is a broader domain (Rohner & Lansford, 2017). Experiencing hostility works against a child’s need for relatedness and can make it difficult for a child to cope (Rohner & Lansford, 2017; Ryan & Deci, 2000). Parental expressions of hostility during interactions with children tend to undermine parent-child relationships and can foster maladaptive behavior in children (Carrasco, Holgado,

Rodríguez, & Del Barrio, 2009; Chang, Schwartz, Dodge, & McBride-Chang, 2003; Newland, Ciciolla, & Crnic, 2015; Stormshak et al., 2000).

In overview, children would seem to benefit from high levels of supportive presence, autonomy support, and at least modest levels of stimulation; and they would generally benefit from low levels of expressed hostility. That said, to more fully understand paternal behavior requires appreciating that the meaning of any particular parenting action for children depends on the broader affordances present in a situation, including other features of parental behavior in that setting (Holland, 2006). In effect, the “impact” of any particular type of paternal behavior likely derives from the fact that other types of paternal behavior tend to co-occur with the particular type of behavior in question; that is, the overall organization of paternal behaviors in given types of situations. Unfortunately, little is known about the organization of paternal behavior as the behavior is manifest in exchanges with children (i.e., how often different types of behavior tend to co-occur); and even less is known about how the organization of particular types of behavior changes as children age (Ryan et al., 2006).

Evolving Dialectics in Father-Child Relationships

A variety of personal and contextual factors contributes to the likelihood a father will enact a particular type of behavior when interacting with a child (Belsky & Jaffee, 2006; Cabrera et al., 2014). Accordingly, these factors will help determine the likelihood particular behaviors will co-occur during the interactions. These factors include the father’s own history, father’s personality, family and work context, the overall social context, and child characteristics. For many adults, the personal factors (i.e., personal history and individual personality) remain relatively constant, so there is reason to believe that personal factors would lead to fairly stable patterns of paternal behavior. Likewise, they should facilitate fairly stable patterns of co-occurrence of those behaviors. For example, DeHaan, Dekovic, and Prinzie (2012) and McCabe (2014) found that parents high in agreeableness tended to be both higher in warmth and lower in their tendency to exert control than parents low in agreeableness. Parents high in agreeableness were also likely to show support for their children, including support for autonomy, and unlikely to show hostility (Hampson, 2012; Prinzie, Stams, Dekovic, Reijntjes, & Belsky, 2009). By contrast, parents high in neuroticism tended to be lower in both warmth and autonomy support (Prinzie et al., 2009). That said, not all aspects of personality are consistently connected to multiple forms of parenting behavior (Carver & Connor-Smith, 2010; Huver, Otten, de Vries, & Engels, 2010). For example, neither extraversion nor conscientiousness showed a consistent relation with parental autonomy support; but both parents high in conscientiousness and parents high in extraversion were more likely to exhibit warmth toward their children (Prinzie et al., 2009). Although the

majority of studies of parental personality involve mothers, the effect sizes for relations between particular personality types and particular classes of parenting behavior tend to be similar for mothers and fathers (Prinz et al., 2009).

Broad macro-level and many micro-level contextual conditions also tend to remain relatively constant for most families. A good example is household SES. Although household income can fluctuate some from year to year, parental education and overall household wealth tend to be more stable (Pfeffer & Griffin, 2017; Wolf & Morrissey, 2017). In general, higher SES fathers tend to display more warmth toward their children as well as provide the children more stimulation and autonomy support; whereas, lower SES parents more often act in hostile or neglectful ways (Bradley, 2019; Conger & Donnellan, 2007; Kiernan & Huerta, 2008; McMunn et al., 2017). The general stability of these contextual factors suggests that the organization of paternal behavior toward children would tend to be relatively stable as well.

A factor that would seem particularly likely to drive some restructuring of paternal behaviors in joint activities is child age. Child age would seem a particularly relevant characteristic given that children's capacities for engagement in many activities tend to evolve as children age and develop greater cognitive and self-regulatory competence (Cole, Ram, & English, 2019; Gopnik & Wellman, 2012). Social Relational Theory suggests that the nature of engagement between members of a dyad is likely to change as members of the dyad change, such as happens as children grow and gain greater skill (Ben-Ari, 2012; De Graaf, Hoogenboom, De Roos, & Bucx, 2018; Kuczynski & De Mol, 2015). Specifically, fathers will tend to appraise a given situation (and the child's behavior in that situation) based on what they believe the child understands about the situation and is likely to do in the situation (Holmes, 2002; Rusbult & Van Lange, 2003; Wilson & Durbin, 2013). As a child becomes more autonomous, there is likely to be some transformation in how the father evaluates particular behaviors of his child and attempts to exert control and provide support during a given encounter (Rusbult & Van Lange, 2003). As an example, paternal sensitivity toward a child during free play changed somewhat over the first five years of life (Hallers-Haalboom et al., 2017). These broad propensities, notwithstanding, research does not make clear exactly how the co-occurrence of particular paternal behavior during joint interactions may weaken or strengthen during early and middle childhood.

Studies using fMRI and other biological approaches are increasingly demonstrating that humans (both mothers and fathers) tend to be wired so that they are sensitive to their children's needs (Swain, Dayton, Kim, Tolman, & Volling, 2014; Swain, Kim, Spicer, Ho, Dayton, Elmadih, & Abel, 2014). The propensity to act in a sensitive manner is perhaps best exemplified by supportive presence in this study. Assuming that this propensity remains present as children age – which it likely does – the propensity may help determine how the organization of paternal behavior during typical encounters with a child evolves as children age (i.e., how

a father would behave so that he could continue to maintain a supportive relationship with the child). This pattern of re-organization as children age would also seem consistent with the idea of constructive re-organization of paternal behavior, driven by a desire to maintain positive connections with the child, which would also fulfill a father's own need for relatedness (Joussemet et al., 2008).

Compared to school-age children, preschoolers often lack the cognitive skills to fully understand the requirements involved in pursuing goals in many situations. Moreover, limitations in their self-regulatory skills make it difficult for preschoolers to stay on task. In such circumstances, fathers who are generally supportive of their children may nonetheless be inclined to offer various sorts of information and guidance to help a child stay focused (Ben-Ari, 2012). Prior studies done with fathers and mothers of 2- and 3-year olds using very similar data collection methodologies showed strong intercorrelations between parental sensitivity, positive regard, paternal engagement and cognitive stimulation displayed to children (Sethna et al., 2017; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004). Such findings suggest that correlations between paternal behaviors such as supportive presence, respect for autonomy, and stimulation would likely remain moderately strong during early childhood. By comparison, as children move into middle childhood, they tend to manifest greater cognitive and self-regulatory competence (Cole et al., 2019). Accordingly, fathers may back off somewhat and let the child manage his/her own behavior in commonly occurring situations. They may do so because their own sense of identity, as it connects to the role of fathering, is likely to undergo adjustments as a child gains skills and there are new expectations pertaining to the child's behavior (Koepke & Denissen, 2012). Thus, as children advance into middle childhood, parents who are strongly supportive of their children are often motivated to allow those children more autonomy in recognition of the child's increased self-directedness (Koepke & Denissen, 2012). As a consequence, the father's provision of support for the child could become even more strongly connected to his respect for the child's autonomy but less strongly connected to his efforts to provide direction and stimulation during a goal-connected task. In a simple sense, movement toward allowing the child more independence could change the dialectics somewhat. More specifically, a supportive parent who is inclined to provide substantial stimulation to a young child during goal-directed tasks could gravitate toward providing less stimulation to the same child during later stages of childhood because the parent senses that the child does not need as much guidance as in the past. In effect, the supportive parent would have increased motivation to follow the child's autonomous lead. Thus, paternal behaviors that co-occur during one era of the father-child relationship may co-occur less frequently during a later developmental period.

The general tendencies connected with child age notwithstanding, parent-child system dialectics are anything but simple. When children are young and have limited capacity for self-regulation, fathers may experience

ambivalence between their proclivity to be supportive and their need to keep a child on task (Kuczynski & De Mol, 2015). When paternal behavior is considered through the lens of Self-Determination Theory, allowing a child to engage in off-task behavior could challenge the father's own sense of autonomy and competence (Joussemet et al., 2008) and the father's identity (Koepke & Denissen, 2012). If so, a father may be more assertive with a younger child, sometimes even expressing frustration and anger when a child does not follow directions. Consequently, a father's efforts to provide useful stimulation to a child during a task with a goal may show a stronger relation with paternal hostility during early childhood than is the case with older children.

Affordances of Situations

Ideas taken from ecological-developmental systems theory, cultural theory, personality theory, and social relationship theory suggest that certain types of parenting behaviors will tend to co-occur during particular classes of situations (Hampson, 2012; Kuczynski & De Mol, 2015; Sameroff, 2009). For example, when fathers and children are engaged in spontaneous play, parents will be less likely to provide directions and instructions than when they are engaged in an activity where there is a learning goal or a game that has rules and specified objectives (Jin, Tirassa, & Borghi, 2019). Those theories suggest that organizational themes of parental behavior will tend to arise as a consequence of the affordances typically present in those circumstances, together with the proclivities of the actors present (Sameroff, 2009). Accordingly, it is more likely that certain behaviors would co-occur in situations that involve joint activity and involve a goal for both parent and child than in situations where parent and child are engaged in separate activities and situations where there is little focus on a particular goal.

The aim of this study is to examine the co-occurrence of paternal behaviors in situations that have the potential to meet children's basic needs for competence, autonomy, and relatedness (Joussemet et al., 2008; Ryan & Deci, 2000), with specific attention to situations where there is some evaluative pressure on fathers themselves (Grolnick, Price, Beiswenger, & Sakuck, 2007). Such situations more often involve joint activity aimed at a common goal pursuit and, thus, may evoke controlling on the part of fathers as well as behavior that supports the child's autonomy. In keeping with these ideas, the study (as stated earlier) focuses on relations between four types of parenting behavior relevant to joint activity that has a goal: supportive presence, autonomy support, stimulation, and hostility (Joussemet et al., 2008).

The framework presented by Cabrera et al., (2014), together with theories about the dynamics of social relationships and the impact of situational affordances on human behavior, make clear that many factors come into play with respect to the

organization of paternal behavior. It would be difficult for any one study to deal with such complexity fully. However, since negative behavior on the part of a child is especially likely to disrupt a father's inclination to act in a supportive manner, we include child negative behavior as a covariate in the models tested. We also consider child gender based on the premise that fathers adjust their behavior in accordance with their perception of their son's and daughter's capacity and willingness to deal with the affordances present in a situation (Russell & Seabel, 1997). Using the determinants of parenting framework and theories pertaining to social relationships as guides, we also included paternal level of education and beliefs about child rearing in the models we tested.

Although research shows that various kinds of micro-contextual factors (e.g., household risk, marital conflict) and child factors (e.g., difficult temperament, disabilities, complex health problems) can affect parenting behavior, there is limited theory and research to suggest how any particular factor might influence the organization of the four paternal behaviors being examined or how a particular factor might influence the re-organization of those behaviors over the course of early and middle childhood (Cabrera et al., 2014). According to Social Relationship Theory, some of these factors could lead to contradictory impulses on the part of parents, making it difficult to formulate strong hypotheses pertaining to the likely impact on the organization of paternal behavior (Kuczynski & De Mol, 2015).

The total number of studies that address associations between relatively discrete forms of paternal behavior (e.g., associations between autonomy support and stimulation, between monitoring and hostility, between warmth and providing directions) is limited. However, in a prior study conducted with mothers that included data spanning multiple developmental periods, there were some adjustments in both the frequency and quality of particular parenting behaviors (Bradley, Iida, Pennar, Owen, & Vandell, 2017). For example, there was a strong relation between supportive presence and respect for autonomy during early and middle childhood, but the association strengthened over that time period. By contrast, the association between supportive presence and stimulation decreased over time. Particularly revealing was the curvilinear relation between respect for autonomy and stimulation; it strengthened between 36 months and 54 months, then weakened. A study using a different sample, spanning several years, found that fathers reduced the number of "influence bids" (controlling behaviors) directed at their children over the course of early childhood while maintaining their level of "social bids" (behaviors aimed at maintaining interpersonal connectedness) (Wilson & Durbin, 2013). As well, there are a small number of studies that address stability of particular paternal behaviors. For example, a study by Haalers-Hallboom, van Berkel, Endendijk, van der Pol and Mesman (2017) found that observed paternal sensitivity was moderately stable during infancy and early childhood. Likewise, Sethna et al. (2014) found that child reported paternal positive affect was reasonably stable

during early adolescence, whereas paternal hostility was somewhat less stable. These findings lead to the expectation that there could be some adjustments in the pattern of co-occurrence among paternal behaviors across developmental periods.

The Present Study

Given that many factors can come into play in determining how fathers behave when interacting with their children, it can be difficult to predict whether parenting practices that are highly associated when children are young will become even more strongly associated as children grow older or will become more weakly associated. Such complexities acknowledged, the following hypotheses are offered based on the arguments articulated earlier: (1) the relation between supportive presence and respect for autonomy is strong and shows increasing strength as children age; (2) relations between paternal supportive presence and paternal provision of cognitive stimulation and between paternal respect for autonomy and stimulation weaken as children age; (3) negative relations between paternal supportive presence and paternal hostility and between paternal respect for autonomy and hostility are strong and show little change as children age; and (4) relations between paternal hostility and paternal provision of stimulation are negative but become less so as children age.

METHOD

Participants

Participants are father-child dyads from the NICHD Study of Early Child Care and Youth Development (SECCYD). SECCYD is a prospective longitudinal study of 1,364 children enrolled at birth in 1991 from hospitals near 10 data collection sites across the United States. The study was managed by a steering committee consisting of personnel from NICHD, contracted experts in data analysis, and investigators from the 10 collaborating institutions. Families recruited for participation had a healthy newborn and varied by socioeconomic, ethnic, and educational background (NICHD Early Child Care Research Network, 2001). All data collection procedures were approved by the steering committee for the study and IRBs at the 10 collaborating institutions.

The current sample consisted of 718 families for whom father-child observational data were available for the scheduled for the age 54 months and in 1st, 3rd, and 5th grades. The actual mean ages for children during those observations were as follows: 54-month assessment ($M = 56.01$ months, $SD = 1.14$), 1st grade assessment (M age = 83.78 months, $SD = 3.66$), 3rd grade assessment ($M = 107.87$ months, $SD = 3.72$), 5th grade assessment ($M = 131.81$ months, $SD = 4.01$). Only biological fathers and father figures (i.e., step-father or mother's

partner) who resided in the home with the child from 54 months to at least 3rd grade were eligible for inclusion in the current study. Data were available from 618 families at all four waves, and 61, 55, and 17 families for any three, two, or one of the waves, respectively. Half of the children were male (51.3%), and 13.2% of fathers were ethnic-minority (0.3% American Indian, 2.2% Asian American, 8.9% African American, 1.8% other). Nearly half (44.6%) of fathers held at least a Bachelor's degree, and 82% of households had an income-to-needs ratio above 2.0. Compared to the entire NICHD SECCYD sample, the sample studied in the current investigation was more likely to be European American, be more highly educated, and have higher incomes.

Procedures

Father-Child Interaction

Fathers' parenting behaviors (supportive presence, stimulation of cognitive development, respect for autonomy, hostility) and children's negativity were rated from 15-min videotaped father-child observations collected in the home. The observational paradigms were designed to allow and elicit similar types of behavior from parent and child at each age point, bearing in mind the difficulties of presenting the same basic affordances for younger and older children (Vandell, Burchinal, Belsky, Steinberg, Vandegrift, & the NICHD Early Child Care Research Network, 2010). Activities were chosen, from piloted options, that were engaging for the children at each of the ages studied. They activities were chosen to provide some degree of challenge for the dyad and some fun. Parents and children often commented that they particularly enjoyed the parent-child interaction procedures in the visits. The 54-month home visit involved two activities: (1) father and child jointly constructing a structure comprised of chutes and ramps through which a marble could be rolled, and (2) playing together with a set of jungle animals and props. The father-child dyadic observation at 1st grade included: (1) drawing a sailboat together using an Etch-A-Sketch with instructions that the father was to control one knob and the child control the other, (2) a geometric block activity requiring the child to match pictured block patterns with the father assisting as needed, and (3) playing a simple but competitive card game. The father-child observations during 3rd grade involved: (1) a discussion task during which the father and child were to discuss their views of different "rules" chosen randomly regarding what children and parents should do, and (2) an activity that involved sorting and sequencing three sets of cards each illustrating a story (e.g., a birthday party, a haircut). In 5th grade there were two activities: (1) a discussion task in which the father and child discussed issues regarding potential parent-child disagreements that they identified jointly (e.g., chores, homework, watching TV), and (2) an activity in which the father and child had 7 minutes to construct a "tower" using provided supplies (Model Magic, 100

toothpicks, four tongue depressors, four rubber bands, and ruler). The procedures and materials used for the observations were identical across all study sites.

Observational Coding Schemes

Father and child behaviors were coded at a central, non-data collection site location using a rating system devised for the longitudinal study. The system included making age appropriate adjustments for each assessment point (Owen, Klausli, & Murrey, 2000; Owen, Vaughn, Barfoot, & Ware, 1996). To make the ratings, notes were taken regarding features of each of the different behaviors to be rated while viewing the 15-minute videotaped observation. Typically this involved two viewings. An overall rating of each of the behavior items for the entire period of observation was made using a 7-point scale (1 = *very low* to 7 = *very high*). A single coder rated all of the behaviors considered in the coding system. *Supportive presence* represents the father's emotional encouragement and warmth provided to the child. The positively supportive father would demonstrate verbal and physical nurturance and encouragement and convey confidence in the child's ability to engage in the tasks in the observation paradigm. High scores reflected frequent, well-timed, and concordant positive affect and encouragement whereas low scores represented a lack of positive connection or unavailability. *Stimulation of development* represents the father's attempt to foster cognitive development via explicit, effortful teaching meant to facilitate learning and acquiring knowledge. Higher scores indicate the father clearly and consistently sought to teach the child a higher level of mastery or understanding throughout the observation task. Low scores reflect no attempt by the father to teach the child or no involvement during the activity. *Respect for autonomy* is the degree to which the father acknowledged and conveyed appreciation for the child's perspective and activities. A father scoring high would encourage the child's actions and point of view, and acknowledge the validity of the child's individuality by allowing the child to direct engagement in the activity or toy and work autonomously without undue interference. A father scoring low was intrusive in interactions with the child, rejecting and undermining the child's actions, perspective, and individuality. *Hostility* reflects the father's expression of anger or rejection of the child. A father scoring high would overtly reject or blame the child for mistakes or clearly express anger or rejection of the child, possibly with barely controlled if not overtly negative emotions. A father scoring low on hostility showed no signs of anger, negative emotion, or rejection of the child. *Child negativity* reflects the degree to which the child displayed anger or dislike directed toward the father. A high score represents the child's repeated and overt anger or rejection of the father's behavior or ideas expressed whereas a low score indicates no signs of the child's anger or rejection.

All coding was done under the supervision of Margaret T. Owen, one of the measure's developers. Across the four assessments, teams of four raters, on average, were trained to apply the ratings with reliability, with at least one member of the previous assessment period serving as a member of the subsequent assessment's rating team. Raters were blind to all other data about the individual families, and individuals serving as raters on two of the assessment periods were not assigned to rate the same dyad more than once.

Reliability estimates for parenting behaviors were calculated via the intra-class correlation (ICC) coefficient, based on two coders independently rating the same video. The number of videotapes coded by two independent raters was: 54 months ($N = 155$), 1st grade ($N = 159$), 3rd grade ($N = 123$), and 5th grade ($N = 160$). ICCs were calculated using both Pearson correlations and repeated measures analysis of variance. Across the four assessments, ICCs ranged as follows: supportive presence (.72 to .85); respect for autonomy (.70 to .80); stimulation (.74 to .83); hostility (.39 to .78); and child negativity (.54 to .83).

Time

Time was coded 0 to 3, where 0 represents age 54 months (the first point examined in the current study), and times 1, 2, and 3 correspond to first (M age = 83.78 months), third (M age = 107.87 months), and fifth (M age = 131.81 months) grades, respectively.

Demographics and Paternal Child-Rearing Beliefs

Mothers reported child sex and paternal education at the 1-month interview. Fathers' authoritarian beliefs about rearing children were measured during the home visit component of the 1st grade assessment using the Parental Modernity Scale (PMS, Schaefer & Edgerton, 1985). PMS contains 30 items, each rated on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*). The items measure more traditional authoritarian beliefs and more progressive democratic beliefs pertaining to parenting. A total score was used, with higher scores representing more authoritarian parenting beliefs ($\alpha = .89$).

Data Analysis

To address the primary study questions, we used multilevel modeling (MLM). It was used to examine associations between two distinct father behaviors over the 4 time points. The authors chose MLM to account for residual dependency arising from the nested structure of the data. Data were nested by repeated observations of father-child dyads. Each model had two levels: level 1 (within dyads) and level 2 (between dyads). The level 1 equation modeled a particular paternal behavior during father-child observations (e.g., stimulation of cognitive development) as a function of another paternal behavior (e.g., respect for autonomy), time, and the interaction of the paternal behavior and time. All paternal behaviors were within

person centered (Raudenbush & Bryk, 2002). Each pair of parenting behaviors was examined separately; therefore, we ran a total of six models: (1) *supportive presence* predicting *stimulation*, (2) *supportive presence* predicting *respect for autonomy*, (3) *supportive presence* predicting *hostility*, (4) *respect for autonomy* predicting *stimulation*, (5) *respect for autonomy* predicting *hostility*, and (6) *hostility* predicting *stimulation*. The decision pertaining to which variable to treat at the independent variable in an analysis and which to treat as the dependent variable was based on theory suggesting which of the two behaviors was likely to be more fundamental with respect to parent motivations regarding the child. In effect, a parent's propensity to be supportively present was considered most fundamental; thus, it was used to predict the other three behaviors. Likewise, a parent who had a tendency to respect a child's autonomy was assumed to be more likely to provide information and guidance (stimulation) during interplay and less likely to behave in a hostile manner. Finally, a parent who was inclined to be hostile seemed less likely to offer meaningful stimulation.

Child *negativity* was included as a level 1 time-varying covariate in all six models and was person-centered. Level 2 equations included 3 covariates (paternal education, paternal childrearing beliefs, and child sex). SAS software MIXED procedure was used to model all analyses (v9.4, 2013). For each model of father's parenting behavior, the significance of random effects of the other parenting variable were tested using the nested comparison of likelihood ratio (Singer & Willett, 2003). Degrees of freedom were based on Satterthwaite estimations.

Prior to executing MLM analyses for each pair of paternal behaviors, we examined the stability of each behavior using simple bivariate correlations. As expected, there was low to moderate stability for each of the four behaviors: supportive presence ($r = .23$ to $.36$), respect for autonomy ($r = .27$ to $.40$), stimulation ($r = .21$ to $.38$), and hostility ($r = .12$ to $.28$).

RESULTS

Fathers displayed moderate to high levels of supportive presence ($M_s = 5.18$ to 5.36 on the 7-point scale) and respect for autonomy ($M_s = 5.19$ to 5.49), and moderate levels of stimulation of cognitive development ($M_s = 3.98$ to 4.87). By contrast, fathers showed low levels of hostility ($M_s = 1.18$ to 1.38), with less than 2.5% rated above 3.0 and no fathers rated above 6.0 at any time. The distribution for hostility was positively skewed with SD_s ranging from 0.56 to 0.69. Results from the six multilevel models are summarized in [Tables 1–6](#).

As hypothesized, fathers' supportive presence showed strong associations with their stimulation of children ($\gamma = 0.63$, $t(2031) = 12.71$, $p < .0001$) and their respect for autonomy ($\gamma = 0.48$, $t(918) = 14.73$, $p < .0001$). The association between supportive presence and stimulation decreased from 54 months to grade 5 ($\gamma = -0.08$, $t(2145) = -2.76$, $p = .01$); whereas, the association between

Table 1. Multilevel analysis results for supportive presence and stimulation of cognitive development.

	Γ	se
Fixed effects		
Intercept	3.952***	.304
Supportive presence	.632***	.050
Time	.080***	.019
Supportive presence X time	-.080*	.029
Child Negativity	-.043	.036
Child Sex	.096	.061
Paternal Education	.090***	.013
Paternal Childrearing Beliefs	-.014***	.002

Note. * $p < .05$. *** $p < .001$.

Table 2. Multilevel analysis results for supportive presence and respect for autonomy.

	Γ	se
Fixed effects		
Intercept	5.652***	.253
Supportive presence	.475***	.032
Time	-.043**	.012
Supportive presence X time	.046*	.019
Child negativity	-.142***	.022
Child sex	.085	.051
Paternal Education	.052***	.011
Paternal childrearing beliefs	-.015***	.002

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

Table 3. Multilevel analysis results for supportive presence and hostility.

	Γ	se
Fixed effects		
Intercept	1.318***	.163
Supportive presence	-.0131***	.027
Time	.004	.010
Supportive presence X time	-.020	.015
Child negativity	.183***	.018
Child sex	-.071*	.033
Paternal Education	-.014*	.007
Paternal childrearing beliefs	.003*	.001

Note. * $p < .05$. *** $p < .001$.

supportive presence and respect for autonomy increased ($\gamma = 0.05$, $t(1581) = 2.48$, $p = .01$). Also as hypothesized, fathers' supportive presence was negatively associated with their expressed hostility ($\gamma = -0.13$, $t(1288) = -4.84$, $p < .0001$), an association that did not change over time ($\gamma = -0.02$, $t(2042) = -1.36$, $p = .18$). In addition, the random effect of supportive presence was significant (random effect = .06, $\chi^2(1) = 99.1$, $p < .001$), suggesting that the relation between fathers' supportive presence and expressed hostility differs across families. Fathers' respect for autonomy was strongly associated with stimulation ($\gamma = 0.57$, t

Table 4. Multilevel analysis results for respect for autonomy and stimulation of cognitive development.

	Γ	se
Fixed effects		
Intercept	3.965***	.304
Respect for autonomy	.574***	.056
Time	.084***	.021
Respect for autonomy X time	-.072*	.032
Child negativity	-.057	.038
Child sex	.093	.061
Paternal education	.089***	.013
Paternal childrearing beliefs	-.014***	.002

Note. * $p < .05$. *** $p < .001$.

Table 5. Multilevel analysis results for respect for autonomy and hostility.

	Γ	se
Fixed effects		
Intercept	1.324***	.164
Respect for autonomy	-.166***	.029
Time	.000	.010
Respect for autonomy X time	-.014	.016
Child negativity	.178***	.018
Child sex	-.072*	.033
Paternal education	-.014*	.007
Paternal childrearing beliefs	.003*	.001

Note. * $p < .05$. *** $p < .001$.

Table 6. Multilevel analysis results for hostility and stimulation of cognitive development.

	Γ	se
Fixed effects		
Intercept	4.012***	.305
Hostility	-.302**	.090
Time	.056*	.022
Hostility X time	.137*	.050
Child negativity	-.172***	.041
Child sex	.088	.061
Paternal education	.089***	.013
Paternal childrearing beliefs	-.014***	.002

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

(2013) = 10.20, $p < .0001$), but this relation grew weaker over time ($\gamma = -0.07$, $t(2094) = -2.25$, $p = .02$). Respect for autonomy showed a robust negative association with expressed hostility ($\gamma = -0.17$, $t(1295) = -5.65$, $p < .0001$), an association that did not change over time ($\gamma = -0.01$, $t(1990) = -0.87$, $p = .38$). The random effect of respect for autonomy was significant (random effect = .06, $\chi^2(1) = 81.4$, $p < .001$), suggesting that the association between fathers' respect for autonomy and expressed hostility differs across families. Finally, paternal

expressed hostility demonstrated an expected negative association with stimulation ($\gamma = -0.30$, $t(2082) = -3.34$, $p = .001$), and this association weakened over time ($\gamma = 0.14$, $t(2075) = 2.77$, $p = .01$).

Child negativity was a significant factor in four of the six models examined. It was a robust factor in models involving paternal hostility. A positive association was observed in models involving supportive presence ($\gamma = 0.18$, $t(1595) = 10.26$, $p < .0001$) and respect for autonomy ($\gamma = 0.18$, $t(1588) = 9.94$, $p < .0001$), and a negative association was observed for stimulation ($\gamma = -0.17$, $t(1582) = -4.24$, $p < .0001$). Moreover, child negativity was significant in the model relating paternal supportive presence and respect for autonomy ($\gamma = -0.14$, $t(1478) = -6.38$, $p < .0001$). By contrast, child negativity was not significant in models examining the relation between paternal stimulation and supportive presence ($\gamma = -0.04$, $t(1527) = -1.20$, $p = .23$) and respect for autonomy ($\gamma = -0.06$, $t(1562) = -1.50$, $p = .13$).

Among the level 2 covariates included in models, fathers' education and childrearing beliefs showed robust relations with the outcome variable in all models (see [Tables 1–6](#)). Child sex was only significant in the two models predicting hostility, with fathers expressing less hostility toward female children than male children (see [Tables 3 and 5](#)).

DISCUSSION

Despite increased attention to fathers, much remains unclear about how fathers act during common exchanges with children and how paternal behavior evolves as children age (Cabrera et al., 2014; Kuczynski & De Mol, 2015). The goal of this study was to advance understanding about fathers as caregivers by examining patterns of relations between four paternal behaviors (supportive presence, respect for autonomy, stimulation, and hostility) as they occur during interactions between fathers and their children and to trace how relations between those parenting behaviors shift across early and middle childhood.

Changes in the Organization of Paternal Behavior with Child Age

Consistent with frameworks on the determinants of parental behavior, we observed a great deal of consistency in how fathers interacted with their children during early and middle childhood (Cabrera et al., 2014). The mean levels of paternal supportive presence, respect for autonomy, and hostility varied little from 54 months to 5th grade and there tended to be moderate levels of stability for each of the four behaviors examined. During the observations, fathers generally displayed relatively high levels of supportive presence and support for autonomy and very low levels of hostility. As expected there was somewhat more variation in the amount of stimulation fathers provided during the joint, goal-directed activities observed over this age span. The strength of associations

between supportive presence and hostility, and between respect for autonomy and hostility also remained fairly constant over the four time points examined. However, there were some shifts in the strength of association between some pairs of paternal behavior over those time points. Notably, associations between supportive presence and respect for autonomy became more positive over time. By contrast, the links between all three types of socio-emotional behavior (supportive presence, respect for autonomy, hostility) and stimulation decreased somewhat. The shifts would seem to reflect an evolving dialectic that appears to derive from the child's growing autonomy and the father's reappraisal of what makes sense to do in recognition of the child's growing autonomy (Feldman et al., 2013; Kuczynski & De Mol, 2015; Rusbult & Van Lange, 2003).

As expected, the strength of association between fathers' supportive presence and the other three behaviors examined evolved from early childhood through middle childhood, likely as a consequence of children's growing competence and independence (Ben-Ari, 2012). In this regard, it is not surprising to see that the connection between supportive presence and respect for autonomy reached its highest level in 5th grade, the assessment point when children were oldest. When children are young and have limited self-regulatory and cognitive skills, supportive fathers may be inclined to provide a significant amount of guidance during tasks that have concrete goals. In such cases, a generally supportive father may feel it is important to redirect a young child's behavior rather than allowing the child to act with full autonomy. In effect, with young children, somewhat contradictory impulses for paternal behavior may emerge (Kuczynski & De Mol, 2015) such that supportive presence and respect for autonomy may not be highly correlated in fathers who are highly invested in their children. However, these contradictory impulses may weaken as the child's skills increase and the father feels increasingly comfortable allowing the child to make independent decisions during a goal-oriented task (Kuczynski & De Mol, 2015). Indeed, a highly invested father may derive pleasure from seeing his older child pursue a goal independently as it may foster the father's own sense of competence and identity as a parent (Joussemet et al., 2008; Koepke & Denissen, 2012).

As children age and presumably gain competence, fathers are more likely to reappraise what a situation requires by way of information given to the child regarding how to accomplish tasks (Holmes, 2002). The declining strength of relation between paternal supportive presence and provision of stimulation in this study would seem to bear this out. Recognizing their children's greater understanding of what the task required, fathers appeared less likely to provide information about what to do in favor of allowing the child to behave with greater autonomy (Rusbult & Van Lange, 2003). These findings would appear to extend findings by Wilson and Durbin (2013) showing the parents (both mothers and fathers) reduced the number of "influence bids" directed at children (i.e., controlling behaviors) over the course of early childhood while maintaining the number of "social bids" directed at the children (i.e., efforts to

foster interpersonal engagement). In effect, when fathers are highly attached to their children, they are more likely to see things from the child's perspective and to adjust their behavior with the child in ways that meet the child's needs.

Variations by Child Gender

Fathers expressed less hostility to girls than to boys during the observed interactions – granted, fathers manifested very low levels to boys as well as to girls. The gender difference favoring girls would seem to comport with recent findings in behavioral neuroscience showing that fathers respond more positively to girls than boys (Mascaro, Hackett, & Riling, 2017). One of the challenges that emerges in trying to interpret findings such as the child gender difference in paternal expressions of hostility, is that hostility is not simply the polar opposite of positive behaviors such as supportive presence and respect for autonomy (Skinner, Johnson, & Snyder, 2005). A behavior that in some ways reflects hostility or negative regard can in other ways reflect sternness or demandingness. Future research should be focused on more fully delineating these variations, including a consideration of behaviors other than the four considered in this study.

In their perspective of research on fathers, Cabrera, Volling, and Barr (2018) posed the question: How do fathers matter for children? They argued that a more definitive answer to the question requires more research on father-child interactions; and they recommended that such studies consider new forms of paternal behavior and new settings for parent-child exchanges. To this we would add that future research also needs to consider the extent to which various forms of paternal behavior tend to co-occur in various types of settings and how the pattern of co-occurrences changes as children age or find themselves in different macro-level circumstances. The goal of this study was to advance knowledge in this third area of inquiry.

Kuczynski and De Mol (2015) discussed the idea that parents are often confronted with contradictory impulses in their interactions with their offspring (e.g., the need to provide guidance and assure child comfort in situations that present challenges to a child versus the need to promote autonomy in the child). When children are young, these contradictory impulses can easily arise due to children's limited skills and understanding. However, as a child gains skill, parents who are generally invested in their children are more likely to allow the child self-direction. In these circumstances the general tendencies of a parent to offer support, avoid hostility, and promote autonomy are more likely to be manifested in the same situation, such as was demonstrated in this study. It is likely that reduction of the same contradictory impulses also led to a weakening of the connections between socio-emotional aspects of parenting (supportive presence, low hostility, respect of autonomy) and paternal provision of stimulation. In effect, as children age, fathers are more likely to recognize the growing

autonomy of the child and do less to insert their own proclivities in directing the child's behavior. In doing so, fathers would seem to fulfill their own needs for both competence and relatedness (Ryan & Deci, 2000).

Adjustments in the strength of relations between paternal behaviors were observed as children moved through early and middle childhood despite the fact that economic conditions remained relatively stable for most families in the sample, as did household composition. Such adjustments in the strength of relations between paternal behaviors are consistent with the idea of separation-individuation promulgated by developmentalists (Ben-Ari, 2012). Such adjustments are also consistent with the idea that a father's sense of identity as a parent (i.e., what role a father believes he should be playing with respect to a child) is likely to undergo some adjustments as the child gains skills and develops greater independence (De Graaf et al., 2018). More specifically, expectations for the child are likely to change and fathers may pull back from the idea that good fathers should constantly focus on assuring safety and providing guidance/direction (Koepke & Denissen, 2012). A father's evolving perceptions in the sense of who he is and who the child is allows the paternal supportive presence and autonomy support to become more tightly bound. At the same time, the evolving perceptions of paternal identity reduce the connection between each of those behaviors and paternal provision of stimulation (the father director/guider).

According to Self-Determination Theory, humans have three basic needs: competence, relatedness, and autonomy (Joussemet et al., 2008). Findings from this study indicate that parenting behaviors that would generally support all three of these needs are fairly consistently displayed by fathers during shared activities with their children. In effect, there tends to be co-occurrence of the kinds of behaviors needed to support each of the three needs during father-child encounters. Sethna et al. (2017) similarly observed a moderate correlation between paternal sensitivity and paternal stimulation in 24 month olds. Such findings would appear consistent with theoretical models of parenting in that the paternal characteristics that help drive paternal behavior and the child characteristics that help drive paternal behavior create proclivities that are enacted in a multiplicity of forms aimed at more general goals (Cabrera et al., 2014).

How Fathers Compare to Mothers

Findings observed for fathers in this study largely mirror the findings observed for mothers (Bradley et al., 2017). For both mothers and fathers, there was a positive association between supportive presence and respect for autonomy, one that became slightly stronger over time. Likewise, there was a fairly strong relation between supportive presence and stimulation, but one that weakened over time. These patterns of association suggest that caregiving as the child ages in many ways operates the same for male and female parents (Abraham et al., 2014; Aznar & Tenenbaum, 2016) – an idea supported by recent neuropsychological studies

pertaining to parenting (Swain et al., 2014). Even so, findings from this study suggest variability in father-child versus mother-child relationships. For example, relations between paternal respect for autonomy and paternal hostility showed little change during early and middle childhood, whereas findings from the previous study done with mothers showed a slight weakening of this association (Bradley et al., 2017). These differences in shifting patterns would again seem to speak to some of the contradictory impulses that help shape human relationships (Kuczynski & De Mol, 2015). Based on theoretical models concerning the determinants of parental behavior, future research will need to consider how culture and other aspects of family context may contribute to both similarities and differences in mother versus father parenting. Interesting in this regard is the growing number of children living in father-only households (National Council on Family Relations, 2017).

Limitations

Interpreting the findings must be approached with caution given several limitations in the study. First, given that situational affordances determine how individuals act, it is a limitation that we made observations using only 2 or 3 semi-structured situations (materials, tasks) at each assessment point. Second, despite efforts to make the affordances of the situations observed at each assessment point similar, one should not assume that the situations were experienced as similar across the four points in development. Neither can one assume that the scoring of the four key variables represent exactly the same behavioral phenomena at each of the four time points. Third, at 3rd grade the inter-class correlation for hostility fell into the “poor” range, likely owing to the low levels of hostility manifest in the tasks observed. Thus, there is some uncertainty about robustness of findings pertaining to this behavior at 3rd grade. Fourth, the sample included relatively few families living in poverty or highly unstable circumstances. Thus, we did not look at household risk as a moderator. Given the presumed impact of context on parenting behavior, it would be important not to assume that the findings would apply to fathers living in more adverse circumstances. Fifth, the sample examined – albeit, demographically diverse – did not include a sizable percentage of nonwhite, ethnic minority families. Prior research indicates that the rates at which parenting behaviors co-occur during interactions with children vary by race/ethnicity in the United States (Fuligni & Brooks-Gunn, 2013). Relatedly, all the data were gathered in the United States. Thus, the applicability of findings to cultures outside of the United States is uncertain – especially for societies in which fathers are minimally involved in caregiving (Bornstein, 2012). Sixth, despite using the framework promulgated by Cabrera et al. (2014) to help guide the study, the analysis gave little attention to child characteristics beyond age and gender as determinants of paternal behavior. Future research would do well to consider

child characteristics that may enhance the difficulties of engaging in positive parenting (e.g., emotional temperament, ADHD, cognitive limitations).

A seventh limitation pertains to the way we conducted the analyses. Although we think of the associations between paternal behaviors as correlations, given that the behaviors were measured at the same point in time, we decided to treat Behavior A (e.g., supportive presence) as the exogenous variable in a model and Behavior B (e.g., respect for autonomy) as the endogenous variable with covariates. If we were to conduct the model where Behavior B was the exogenous variable and Variable A was the endogenous variable, the coefficients could differ slightly due to the difference in variance for the two variables and the inclusion of covariates. We selected to only report findings from six models described rather than from all twelve possible models based on theory suggesting that the overall pattern of findings for the two variables would not vary a great deal by reporting findings from models that reversed the direction of prediction. That said, to make sure that findings that emerged when Behavior B was used to predict Behavior A were not substantially different from the findings that emerged when Behavior A was used to predict Behavior B, we ran all models in reverse. As expected, very few differences emerged. There were two exceptions, both involving the use of stimulation as a predictor. Specifically, the interaction between stimulation and time as a predictor was non-significant when stimulation was used to predict respect for autonomy and hostility. This contrasts to findings pertaining to the significant interactions observed when respect for autonomy was used to predict stimulation (respect for autonomy X time) and when hostility was used to predict stimulation (hostility X time). As it happens, findings from the models where the two socio-emotional behaviors were used to predict stimulation seem more useful, particularly since the bivariate correlation between respect for autonomy and stimulation went from $r = .49$ at 54 months to $r = .47$ at 5th grade; and the bivariate correlation between hostility and stimulation went from $r = -.19$ to $r = -.13$ (see Supplementary Table 1). Finally, the analyses involved only examining changes in the association between two variables at a time. However, a model with all four of the parenting behaviors examined simultaneously would be complicated. Furthermore, given that these parenting variables are all moderately correlated, some effects could be due to statistical artifacts (i.e., suppression effect) due to multicollinearity of these variables. Optimally, future research could consider looking at even more complex sets of association involving three or more variables simultaneously.

IMPLICATIONS FOR RESEARCH AND PRACTICE

There is increasing interest in recruiting fathers into programs aimed at improving parenting (Stahlschmidt, Threlfall, Seay, Lewis, & Kohl, 2013). Even so, there remain a number of challenges to implementing effective programs. Part of the problem pertains to creating a training milieu that is interesting and comfortable

for fathers, and part pertains to limited information on what fathers do, how they interact with their children, and how each is affected by the contexts in which fathers engage their children. Most current programs derive from a maternal template and what is known about maternal caregiving, leading to limited effectiveness for many programs (Bronte-Tinkew, Burkhauser, & Metz, 2012). Thus, there is need for deeper understanding about how fathers engage their children and how paternal behavior toward children changes over time.

Findings from this study offer more complete documentation of the pattern of behaviors fathers use when interacting with their children in relatively normal situations with goals to be accomplished by both father and child. The study also presents additional documentation of how paternal behavior during those exchanges tend to evolve as children grow older. Such information can help make agencies that implement parenting programs more confident when approaching fathers and make it easier for professionals to engage men who care for children, particularly in middle childhood, an age that is vastly understudied in father-child relationships. Further delineation of how particular father behaviors change in the strength of their connections to particular child behaviors during situations such as those examined in this study would enhance applicability to practice even more. As well, it would be helpful to have more information on father-child interaction in different situations (e.g., fathers reading to their children, fathers helping with children's homework, or fathers helping children learn how to build things or become more competent in a particular skill). Particularly valuable would be studies of father-child exchanges when others were also present (e.g., mothers, siblings, team mates), as both father and child may respond differently in such circumstances (Cabrera et al., 2014).

These limitations granted, the current findings speak to the value of looking at the whole (all the behaviors that occur during a given situation or setting) as there are likely to be meaningful connections between those behaviors and predictable adjustments in how behaviors are put together to accomplish the goals in various types of situations as children grow. Looking at the whole may be particularly important when offering services to father's who live in conditions of risk or who have characteristics that present potential risks for parenting as paternal patterns of behavior may not show the same levels of interconnectedness as is often observed in non-risk populations.

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The authors affirm having followed professional ethical guidelines in preparing this work. These guidelines include obtaining informed consent from human participants, maintaining ethical treatment and respect for the rights of human or animal participants, and ensuring the privacy of participants and their data, such as ensuring that individual participants cannot be identified in reported results or from publicly available original or archival data.

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