

FATHER–CHILD PLAY DURING THE PRESCHOOL YEARS AND CHILD INTERNALIZING BEHAVIORS: BETWEEN ROBUSTNESS AND VULNERABILITY

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ABSTRACT: Play observations with a total of 400 toddlers and preschoolers were videotaped and rated for *Intensity* and *Quality* of play with their parents. Parents were asked about perceived stress and personality characteristics (Big 5). Child's motor, cognitive skills, temperament, and internalizing behaviors were assessed. Study 1 investigated the robustness of play across child age and gender, and examined differences between fathers and mothers. Study 2 explored the vulnerability of play with fathers of children born preterm (PT-fathers) and fathers who had experienced adverse childhoods (AC-fathers). Study 3 investigated child internalizing behaviors. Intensity of play was maintained almost independently of child age and gender. It was similar for AC- and PT-fathers, and similar to maternal Intensity. In contrast, paternal Quality of play was higher with boys and independent of fathers' personality and perceived parenting stress whereas maternal Quality of play was higher with girls and linked to mothers' perceived parenting competence, acceptability of the child, and neuroticism. AC-fathers scored significantly low on Quality, as did PT-fathers, but the Quality of their play became better with growing child age, birth weight, and cognitive (but not motor and temperament) scores. Finally, child internalizing behaviors were negatively related to paternal Quality of play.

Keywords: intensity of play, quality of play, father–mother distinction, preterm children, fathers with childhood adversities

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Research on play has clearly shown that children's striking need to play—almost from birth—offers a window for parents to support children's cultural learning (Tomasello, 2008). Parent–child play fosters a variety of child competencies ranging from cognitive to social, emotional, and behavioral skills (Cabrera & Tamis-Lemonda, 2013; Lamb, 2010). However, the quantity and quality of play may be compromised in the face of adversity. For example, in families where parents face undue stress due to illness or social and psychological difficulties, fathers in particular might not spend time playing with their children or get involved in much parenting. This reduced involvement is striking given that the majority of fathers are not peripheral figures in their children's lives, contribute remarkably to parenting, and may spend

significant time engaged in high-quality play with their children (Cabrera & Tamis-Lemonda, 2013; Lamb, 2010).

The present study examines factors that influence how fathers play with their young children and how fathers' play influences their children's lives. With some exceptions (see Tamis-Lemonda, Shannon, Cabrera, & Lamb, 2004), many studies on parent–child interaction during the preschool years have shown that fathers may be less positive and more restrictive in parenting than are mothers (see Kwon, Jeon, Lewsader, & Elicker, 2012; Volling, Blandon, & Gorvine, 2006). Fathers might favor sons over daughters, particularly when they are involved in physical play (e.g., Lindsey & Mize, 2001). In contrast to early evidence (e.g., Harrison & Magill-Evans, 1996; Kazura, 2000), later studies have reported that fathers can be more withdrawn from difficult children (e.g., Brown, McBride, Bost, & Shin, 2011), may interact in smaller social and emotional exchanges (e.g., Wilson & Durbin, 2013), and demonstrate more control and discipline. While studies have shown that fathers are as sensitive as mothers (Cabrera, Shannon, & Tamis-LeMonda, 2007; Notaro & Volling, 1999; Tamis-LeMonda et al., 2004), others found them to be less sensitive (e.g., Lewis & Lamb, 2003). Variability in sensitivity may depend on fathers' age, personality, and perceived stress (e.g., Cabrera, & Tamis-Lemonda,

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2013; Lamb, 2010; NICHD Early Child Care Research Network, 2000). It also may be influenced by fathers' own childhood experiences. For example, men who reported close relationships with their parents were more sensitive and maintained better relationships with their children than did fathers with less positive memories (e.g., Cowan, Cohn, Cowan, & Pearson, 1996; Shannon, Tamis-LeMonda, & Margolin, 2005; Steele, Steele, & Fonagy, 1996).

Despite the many equivocal results, fathers have been typically portrayed as behaving like playmates in interactions with their children, favoring physical games. Fathers like to excite, surprise, and encourage their children to take risks (Grossmann et al., 2002; Paquette, 2004; Roggman, Boyce, & Cook, 2001) whereas mothers are more likely to structure, guide, and teach and are more open to pretend-play situations (e.g., Gleason, 2005; John, Halliburton, & Humphrey, 2013). Because fathers may encourage their children to take risks in play more often than do mothers (Hagan & Kuebli, 2007; Moller, Majdandzic, de Vente, & Bogels, 2013), fathers' physical play has become a salient focus in fatherhood research. For example, scholars have examined active and physical father-child encounters (e.g., StGeorge, Fletcher, & Palazzi, 2016; Paquette & Bigras, 2010; Paquette & Dumont, 2013), including extreme forms of physical play such as rough-and-tumble play and chasing games that destabilize the child (e.g., Flanders, Leo, Paquette, Pihl, & Séguin, 2009; Flanders et al., 2010; Pellegrini & Smith, 1998).

The present study uses a play situation that allows for both physical- (father-preferred) and pretend- (mother-preferred) play behaviors, and therefore does not favor one parent over the other. Past studies of fathers either have borrowed the play situation from motherhood research or have observed only physical play, typically preferred by fathers (e.g., Lewis & Lamb, 2003). However, pretend-play situations, which also can be physical, might enable researchers to assess both fathers' and mothers' preferences for specific play behaviors. While mothers might provide imaginative narratives avoiding high intensity of physical behaviors, fathers might engage in intense and sustained bouts that result in high levels of activation. Sensitive playmates, however, need to adjust their behaviors with respect to significant emotion-, action-, and cognition-based elements of the play. Research on play (e.g., MacDonald, 1993) has shown that emotion-based elements of play are the pleasure and flow of joy by which emotions can be expressed and arousal can be regulated. Action-based elements help the high momentum of play activities, which vary in types and complexities, and by which play scripts can be developed. Finally, cognition-based elements of play serve for a parallel emerging play reality, which is individually framed and structured. All these elements reflect the quality of play and should be investigated along with the intensity of parent-child play.

The present article presents three studies. Study 1 explores how fathers from middle-class backgrounds (baseline fathers) engage in play with their children and how they adjust their behaviors according to the emotion-, action- and cognition-based elements of the play situations. We examine paternal intensity and quality

of play and compare them with maternal intensity and quality in the same play situations with the same child. This approach is explorative and aims to assess whether fathers' play behavior varies by child age and gender and whether fathers' age, personality, and perceived stress of parenting are influential on the play. Compared to mother-child play, we expect fathers to display higher intensity when using the physical features of the play situation whereas mothers might show low intensity while making use of the pretend features of the same play situation.

Study 2 examines play situations in the context of life difficulties and challenges, which may impact the intensity and quality of father's play with their children. Two such circumstances are fathers of children born preterm (PT-fathers) and fathers who had experienced adverse childhoods in foster or residential care (AC-fathers). For example, within the framework of the vulnerable child syndrome (Allen et al., 2004; Stern, Karraker, Sopko, & Norman, 2000), preterm children are often viewed as being less competent than are full-term children. Accordingly, parents of preterm children may exhibit difficulties in interacting with their children (Harrison & Magill-Evans, 1996), which might exacerbate difficult child behaviors (Arpi & Ferrari, 2013). In contrast to the play of fathers with full-term children, we thus expect PT-fathers' play to be cautious, less intense, and lower in quality even though they might vary according to the child's motor and cognitive status and temperament. Furthermore, AC-fathers who experienced chaos and family stress, inter-parental aggression, domestic violence, abuse, or neglect during childhood may not be able to provide pleasurable interactions, take on others' perspectives, pay emotional attention, or show empathy during play (e.g., Dixon, 2008; Horan & Widom, 2015; Murray & Goddard, 2014; Kitzmann, Gaylord, Holt, & Kenny 2003; Spila, Makara, Kozak, & Urbanska, 2008). We therefore expect these fathers to exhibit high intensity and low levels of quality in play.

Finally, Study 3 examines the impact of fathers' quality of play on children's internalizing behaviors. Because physical aspects of the play situations may excite and destabilize children to the point where children have difficulty monitoring and controlling their affective states, the play might help the child to adjust. If, however, children withdraw and worry about the emotional arousal of intense physical play, they might avoid it, preventing them from the opportunity to adjust and enjoy emotional arousal (e.g., LaFreniere, 2013). It follows that a physical play must be of high quality for these children to be engaged. We thus hypothesize that children who participate in high-quality physical play will have lower levels of internalizing behaviors than children who do not.

METHOD

Participants

A total of 400 children (12–68 months old) and their families were recruited from large cosmopolitan urban cities in Austria and Germany. Overall, four subsamples were collected. Sample 1 ($n = 200$) is the basic sample of fathers (baseline fathers) and

their children from middle-class backgrounds; this sample also served for later group comparisons. Sample 2 ($n = 70$) consisted of mothers, who participated along with the baseline fathers. Sample 3 ($n = 100$) consisted of fathers whose children were born preterm (PT-fathers). Sample 4 ($n = 30$) included fathers with adverse childhood experiences (AC-fathers); that is, they lived in foster families or residential care during childhood.

Design

All samples were analyzed in three different studies. Study 1 (Samples 1 and 2) sought to set the groundwork for a general view on father-child play throughout the preschool years by examining child age and gender differences in play. It also explored whether fathers differed from mothers in the intensity and quality of play. Study 2 (Samples 3 and 4) examined the challenges faced by PT-fathers and AC-fathers. Finally, Study 3 (Samples 1, 3, & 4) examined how father-child play is associated with child internalizing behaviors (for an overview of subsamples in the three studies, see Figure 1).

Procedure

Data for the present article were collected during two home visits as part of a large-scale, multisite project (for more details, see Ahnert, Supper, & CENOF, 2014). During the first visit, the parent-child play was videotaped with one randomly chosen parent, and fathers were interviewed about their childhood experiences; during the

second visit, the other parent played with the child. Afterward, we tested the child’s developmental status using the Bayley Scales of Infant and Toddler Development, Third Edition (BSID-III; Bayley, 2006) and asked parents to fill out questionnaires regarding their own personality on the Big Five Inventory (Big 5; German version: Rammstedt & John, 2005) and parenting stress on the Parenting Stress Index (PSI; Abidin, 1990; German version: Tröster, 2011). Mothers reported on their children’s temperament on the Toddler Temperament Scale (TTS; Fullard, McDevitt, & Carey, 1984) and behavioral adjustment on the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2000; German version: Arbeitsgruppe Deutsche Child Behavior Checklist, 1998).

Measures

Parent-child play. A pilot study developed two play situations. Children under 36 months of age played *Candy Bomber* with their parents. They were encouraged to imagine being an aircraft throwing candies into containers on the ground. Parents were instructed to hold the child in a vertical position on their hips and move him or her around so that the child could pick up a little ball from a basket and drop it into one of the bowls on the ground. Children older than 36 months of age played *Horse Polo*, a popular game in Europe. Children were instructed to imagine horseback riding while sitting on the parent’s back and use a long-handled mallet to hit small balls into a goal located in the corner of the room. Parents were asked to carry their children to the balls, sometimes smoothly and swiftly and sometimes, like a temperamental horse,

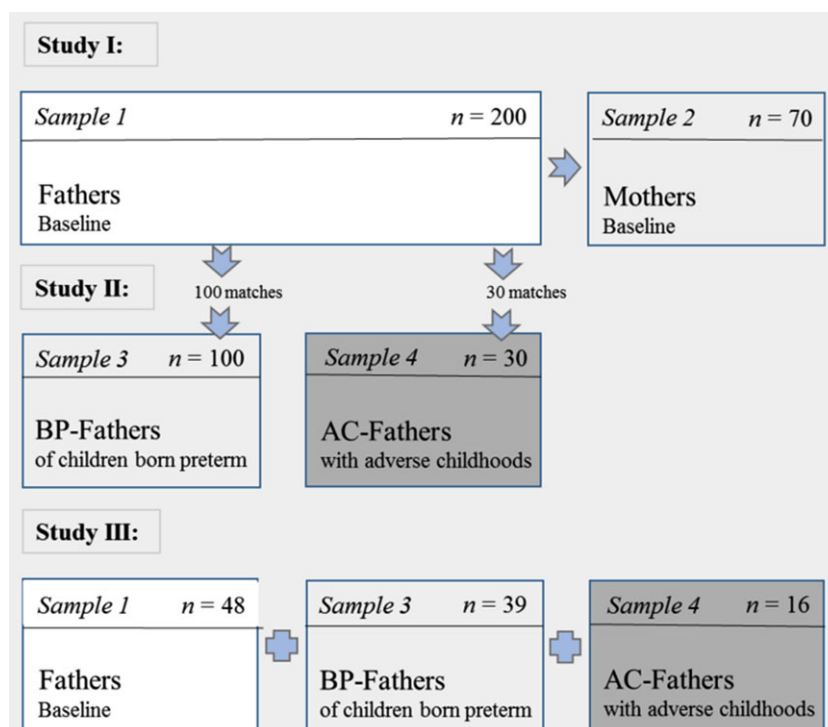


FIGURE 1. Analytical approach.



FIGURE 2. Play Situations as Candy Bomber (left) and Horse Polo (right).

in a manner that was difficult to control (Figure 2). The order of the play situations was balanced with respect to mothers and fathers to control for position effects. On average, Candy Bomber lasted 3.75 min ($SD = 3.15$), and Horse Polo lasted 3.16 min ($SD = 2.01$); both situations were videotaped for later ratings of intensity and quality of play.

Intensity. A 5-point Likert scale was developed to capture the *Intensity* of the play situations, with scores ranging from 1 (*parent is passive/child is bored*) to 5 (*parent stimulates intensively/child cannot get enough of playing and is almost overstimulated*). All videos were coded by 20 graduate students who underwent 4 months of training, with a reliability criterion of intraclass correlation coefficient (ICC) $> .70$ for Intensity. The interrater reliability was calculated based on 10.39% of the rated videotapes and reached an ICC of .80.

Quality. Three 5-point Likert scales were created to assess the *Quality* of the play situations: (a) *Familiarity* was assessed by scores ranging from 1 (*parent and child are distant to each other*) to 5 (*parent seems to know in advance how the child will react and feel/the child integrates the parents' actions in his/her own activity*), reflecting parent and child feelings of togetherness and joy and thus the social-emotional quality of the play; (b) *calibration* tapped into the coordination of the play situation with scores ranging from 1 (*parent and child separately pursue different aims of the game*) to 5 (*parent and child activities are related to each other; the parent participates in the play script in which the child has the lead, dialogue structures emerge to meet mutual goals*), focusing on how play scripts had been mutually developed; (c) *adjustment* captured cognitive-structural features of the play by scores ranging from 1 (*chaotic situation/no structure*) to 5 (*parent makes effective efforts*

to instruct the child in order to better structure the situation/child is compliant or raises new ideas/parent adjusts/mutual cognitive adjustments emerge), and adhering to individual play topics. The same 20 observers who had passed the 4-month training reached the reliability criterion of $ICC > .70$ for all Quality measures before rating the videotapes of the play situations. Interrater reliability of 12.78% of the videotapes was satisfying: $ICC = .70$ for Familiarity, $ICC = .83$ for Calibration, and $ICC = .75$ for Adjustment.

Assuming that the three scales correspond to a common latent variable of Quality, all data were subjected to a confirmatory factor analysis (CFA). We used the weighted least squares means and variance adjusted algorithm (Muthén, du Toit, & Spisic, 1997) for model estimation, treated the scales as ordered categories, and applied a graded response model (e.g., Samejima, 1969). Moreover, we considered the data from fathers and mothers within one model, but parallel factors of Quality, and dealt with the dependencies between both parents with correlated error variances (e.g., Card, Selig, & Little, 2008). To test metric and scalar invariance, factor loadings and thresholds were fixed, and changes in the model fits based on chi-square differences were evaluated (e.g., Savalei & Rhemtulla, 2013). Full scalar invariance displayed excellent fit indices, $\chi^2(18) = 16.6$, $p = .551$, comparative fit index (CFI) = 1.000, root mean square error of approximation ($RMSEA$) = 0.000, $p(RMSEA \leq .05) = .974$. This approach was further extended to assure measurement equivalence between two age groups of the children (toddlers and preschoolers), $\chi^2(46) = 56.1$, $p = .146$, $CFI = .994$, $RMSEA = 0.036$, $p(RMSEA \leq .05) = .750$. Thus, the factorized Quality is applicable to the entire data set without any traceable bias by parent gender or child age. The factor scores were rescaled to a 5-point Likert scale to represent Quality in parent-child play with scores ranging from 1 (*distant and chaotic play interaction with parent and child following different aims*) to

5 (reflecting togetherness and joy between the parent and the child, displays of mutual behavioral adjustment, and a dialog-like play structures with concurring goals).

Parents' personality. The Big 5 (German version: Rammstedt & John, 2005) assessed two major personality dimensions that might influence paternal play behaviors: (a) *Extraversion*, the need for social stimulation and interaction and the capacity to experience joy (Cronbach $\alpha = .86$), and (b) *Neuroticism*, the unstable processing of experience, moodiness, and tendencies to interpret ordinary situations as threatening or hopeless (Cronbach $\alpha = .74$).

Parents' perceived stress. The PSI (Abidin, 1990; German version: Tröster, 2011) included four scales which might compromise parent-child play: (a) *Demandingness*, parents experience the child as placing many demands upon them (Cronbach $\alpha = .73$); (b) *Acceptability*, parents are troubled with the child and worry that he or she does not meet their expectations (reverse-coded so that low scores reflect acceptability, Cronbach $\alpha = .79$); (c) *Attachment*, parents' perception that they cannot accurately understand the child's feelings and/or needs, resulting in less emotional bonding (reverse-coded so that low scores reflect attachment; Cronbach $\alpha = .75$); and (d) *Competence*, parents are insecure in their roles as parents and do not feel appreciated (reverse-coded so that low scores reflect competence; Cronbach $\alpha = .83$). In sum, high scores on the PSI scales mean higher levels of stress and problems in parenting.

Fathers' childhood adversity. AC-fathers reported about their lives and childhood experiences in interviews which yielded a wide range of adverse childhood experiences, including (a) high levels of chaos and family stress, (b) parental substance abuse, (c) parental mental illness, (d) verbal threats and harm, (e) witness of domestic violence, (f) psychological and sexual abuse, and (g) neglect (e.g., Kitzmann et al., 2003). Similar to the *Adverse Childhood Experience Score* (Chapman et al., 2004), we created an *adversity score* based on different types of adversities ranging from (a) to (g), which resulted into a five-level scale of the severity of these adversities. Scores ranged as follows: 1 = (a), 2 = (b) and/or (c), 3 = (d), 4 = (e), and 5 = (f) and/or (g). In addition to the general adversity status, thus AC-fathers attained an adversity score of $M = 3.15$ ($SD = 1.93$).

Child motor and cognitive development. The BSID-III (Bayley, 2006; for the German version, see Reuner & Rosenkranz, 2006) assessed (a) *Motor* development (Spearman-Brown split-half reliability: $r_{SB1} = .92$), capturing the quality of gross motor skills, spacious body movement and coordination, and fine motor skills of hands, fingers, and the facial expression; and (b) *Cognitive* development ($r_{SB1} = .91$), measuring a wide array of cognitive processes (e.g., imitation and problem solving) to be important for play situations.

Child temperament. Three scales of the TTS (Fullard et al., 1984) assessed child personalities which might restrain parents' play with children: (a) *Child approachability*, how flexibly the child responds to unfamiliar events (Cronbach $\alpha = .86$), (b) *Child distractibility*, how readily the child turns away from one event to another (Cronbach $\alpha = .74$), and (c) *Child vulnerability*, how sensitively the child responds to various experiences (Cronbach $\alpha = .82$).

Children's internalizing behaviors. Mothers answered the CBCL (Achenbach & Rescorla, 2000; German version: Arbeitsgruppe Deutsche Child Behavior Checklist, 1998). We used the *t* values of the *Internalizing* scale (Cronbach $\alpha = .89$), capturing internalizing child behaviors mainly characterized by negative emotions (e.g., nervous/highly strung/tense, unhappy/depressed, and/or too fearful and anxious) and fearful/withdrawn behaviors such as avoidance of eye contact and unresponsiveness of affection (for descriptive statistics on the measures, see Table 1).

STUDY 1

Samples

Study 1 included 200 Austrian full-term toddlers and preschoolers (108 girls) between 12 and 68 months of age ($M = 37.48$, $SD = 18.16$) and their fathers from two-parent families (Sample 1) of which 70 mothers also joined the study (Sample 2). All participants came from relatively homogeneous Austrian middle-class households; 4% of the fathers finished primary school, 15% vocational training, 24% high school, and 57% university. Of the participating mothers, 4% finished primary school, 13% vocational trainings, 27% high school, and 56% university. Fathers' ages ranged from 22 to 67 years ($M = 38.40$, $SD = 6.52$); mothers' ages ranged from 23 to 47 years ($M = 35.27$, $SD = 5.22$), and were no different than the ages of nonparticipating mothers.

Results

Intensity in father-child play as related to child age and gender, and mother-child play. A two-factorial ANOVA used child age (toddlers vs. preschoolers) and gender (boys vs. girls) to analyze Intensity scores of paternal play. Main effects were significant for child age, $F(1, 187) = 6.69$, $p = .010$, $d = 0.4$, but not significant for gender or the child age \times gender interaction, suggesting that paternal Intensity was not sensitive to child gender and hardly to child age. Furthermore, a repeated measures ANOVA for mothers and fathers with child age and gender as between-subject factors compared paternal and maternal Intensity scores. There were no significant differences in paternal and maternal Intensity, showing that fathers activated the children as much as did mothers. In addition, age and gender of the children were not associated with further distinctions between the parents' Intensity.

Quality in father-child play as related to child age, child gender, and mother-child play. A two-factorial ANOVA with child age

TABLE 1. Measures (Ms and SDs^a) Used in the Four Samples

Sample	Play		Parent						Child					
	(1)	(2)	Personality		Parenting Stress				Development		Temperament			Behavior
			(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
1	3.01 (1.03)	3.77 (1.03)	3.40 (0.92)	2.51 (0.25)	1.88 (0.67)	2.66 (0.77)	2.21 (0.82)	2.08 (0.79)	21.77 (4.75)	12.09 (2.87)	3.07 (0.77)	4.11 (0.79)	4.23 (0.67)	45.73 (8.62)
2	3.24 (1.05)	3.84 (0.83)	3.55 (0.94)	2.81 (0.89)	1.80 (0.62)	3.00 (0.89)	2.48 (0.94)	2.17 (0.72)						
3	3.16 (0.81)	2.68 (1.01)							18.74 (4.22)	10.40 (2.61)	2.94 (0.84)	4.10 (0.77)	4.37 (0.67)	45.99 (9.87)
4	2.97 (0.72)	2.47 (0.96)												51.93 (11.4)5

Note. (1) = Intensity, (2) = Quality, (3) = Extraversion, (4) = Neuroticism, (5) = Acceptability, (6) = Demandingness, (7) = Competence, (8) = Attachment, (9) = Motor Scores, (10) = Cognitive Scores, (11) = Child Approachability, (12) = Child Distractibility, (13) = Child Vulnerability, (14) = Internalizing.
^aStandard deviations are in parentheses.

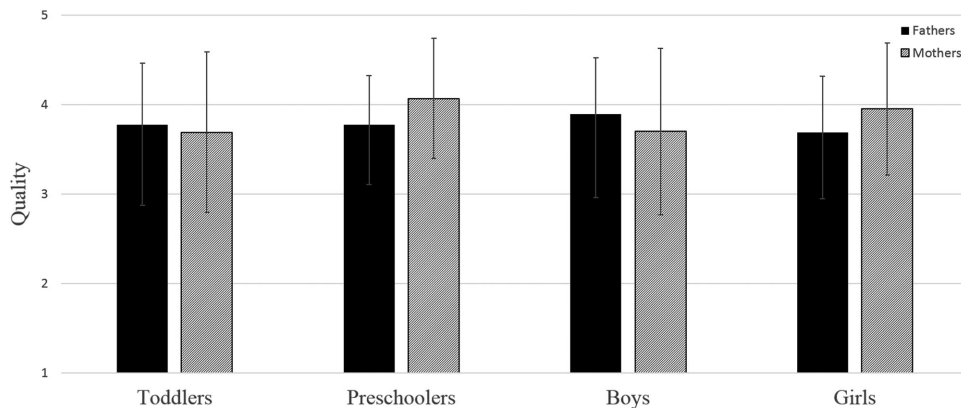


FIGURE 3. Fathers’ play Quality in children of different ages and gender as compared to mothers’ play Quality of the same child and play situation.

(toddlers vs. preschoolers) and gender (boys vs. girls) analyzed Quality scores of paternal play. This analysis resulted in a significant main effect for gender, $F(1, 187) = 4.34, p = .039, d = 0.3$, but not for age or age \times gender interaction, that is, fathers scored higher on play Quality with boys. We then added a repeated measures factor to the ANOVA—parent (mother vs. father)—to explore differences in the Quality of play between mothers and fathers. There were no significant age or gender main effects or age \times gender interaction and no significant differences in Quality between fathers and mothers. However, the interaction effect of parent \times child gender was significant, $F(1, 63) = 5.48, p = .022, d = 0.2$, suggesting that the Quality of play that fathers provided was higher for boys than for girls and the Quality of play that mothers provided was higher for girls than for boys. There also was a significant parent \times age interaction, $F(1, 63) = 5.56, p = .021, d = 0.2$, revealing that mothers engaged in higher play Quality with preschoolers than did fathers (see Figure 3).

Paternal and maternal influences on Quality of play. Hierarchical regression analyses (blockwise, separately for fathers and mothers) explored the associations of paternal and maternal characteristics

(i.e., age and personality characteristics) and Quality of play. In a first step (Model 1), we included parent’s age, Extraversion, and Neuroticism as aspects of parents’ personality structure. In the second step (Model 2), we added four scales of parenting stress: Demandingness, Acceptability, Attachment, and Competence.

The paternal regression model did not meet an accepted threshold for significance (i.e., father’s personality characteristics and parenting stress were thus not associated with quality in paternal play). In contrast, the maternal regression model was acceptable, $R^2 = .47, p = .036$. Mothers scoring high on Neuroticism engaged in low Quality in play with their children, $\beta = -.25, p = .033$, whereas mothers who were scored as low in accepting the child (high Acceptability score), $\beta = .43, p = .024$, and low in parenting competence (high Competence score), $\beta = .35, p = .038$, engaged in high play Quality (see Table 2).

STUDY 2

Samples

Study 2 utilized two contrasting samples: Sample 3 consisted of 100 fathers (PT-fathers) whose children (48 girls) were born

TABLE 2. Quality in Father-Child and Mother-Child Play Situations Predicted by Selected Parent-Related Characteristics

Predictors	Fathers (<i>n</i> = 189)			Mothers (<i>n</i> = 66)		
	<i>b</i>	<i>SD b</i>	<i>p</i>	<i>b</i>	<i>SD b</i>	<i>p</i>
	Model 1 ($R^2 = .10, p = .565$)			Model 1 ($R^2 = .29, p = .136$)		
Age	-0.00	0.01	.842	0.03	0.02	.172
Extraversion (Big 5)	0.06	0.05	.313	-0.04	0.11	.695
Neuroticism (Big 5)	0.07	0.06	.244	-0.19	0.12	.101
	Model 2 ($R^2 = .24, p = .140$)			Model 2 ($R^2 = .47, p = .036$)		
Age	-0.00	0.01	.892	0.01	0.02	.559
Extraversion (Big 5)	0.08	0.06	.132	-0.02	0.12	.845
Neuroticism (Big 5)	0.07	0.06	.294	-0.25	0.12	.033 ^a
Demandingness (PSI)	-0.17	0.08	.029	-0.32	0.17	.064
Acceptability (PSI)	0.07	0.09	.415	0.43	0.18	.021 ^a
Attachment (PSI)	0.13	0.08	.105	-0.13	0.18	.482
Competence (PSI)	0.05	0.08	.555	0.35	0.16	.038 ^a

Note. Big 5 = Big Five Inventory; PSI = Parental Stress Index.

^a $p < .05$.

preterm, aged between 12 and 34 months ($M = 18.01, SD = 5.30$) after adjusted for gestational age, but with no serious congenital defects. Preterm birth was reflected in both gestational age, ranging from 23 to 36 ($M = 28.56, SD = 3.53$) gestation weeks, and birth weight varied from 0.96 to 5.42 lb ($M = 2.75, SD = 1.18$). The preterm children and their families came from relatively homogeneous Austrian middle-class households. The PT-fathers ranged from 22 to 52 years ($M = 36.89, SD = 6.67$); 5% finished primary school, 13% vocational training, 27% high school, and 56% university. Sample 3 was carefully matched with father-child dyads from Sample 1, by selecting 100 (56 girls) children all born at term; average age of the child was 20.05 months ($SD = 5.57$), and fathers ages ranged from 22 to 62 years ($M = 36.60, SD = 6.47$) and did not differ in education. The outpatient clinic for preterm children at the Medical University of Vienna helped in the recruitment.

In contrast, Sample 4 came from a small urban city in Eastern Germany, where social services helped to find 30 fathers with adverse childhood experiences (AC-fathers). Their children ($n = 12$ girls) ranged in age from 11 to 67 months ($M = 46.31 (SD = 22.80)$); the majority (76.7%) lived with both parents whereas less than one fourth (23.3%) lived with only mothers even though fathers visited them on a regular basis. The AC-fathers ranged in age from 23 to 47 years ($M = 32.03, SD = 5.42$); 13.3% had not and 40% had finished primary school, 30% finished vocational training, and 16.6% obtained a high-school or university degree. Extended interviews revealed that the AC-fathers were taken away from their biological parents between the ages of 6 and 12 years; 26.7% of them had spent their lives with foster parents, and 46.7% were sent to residential care. Their independent lives started, on average, 13 years ago ($SD = 5.48$); some entered into marriage (10%), the majority were cohabiting (73.3%), and less than 20% were divorced and/or single. Most important, we carefully matched Sample 4 with father-child dyads from Sample 1, selecting 30 (13 girls) children ranging in age from 12 to 66 months ($M = 43.40, SD = 17.87$), and fathers ranging in age from 24 to 47

years ($M = 34.17, SD = 5.29$); their education was well-matched, though.

Results

Vulnerable children and father-child play. A two-factorial ANCOVA with preterm birth (preterm vs. full-term) and gender (boys vs. girls) as factors and child age as covariate tested differences in paternal Intensity scores. There were no significant effects of preterm birth or gender, or a preterm birth \times gender interaction. When we analyzed the paternal Quality scores using the same analytical approach, we found a significant main effect of preterm birth, $F(1, 193) = 7.42, p = .007, d = 0.4$, revealing lower Quality in play with preterm children than with full-term children. Whereas there were no significant effects of gender or a preterm birth \times gender interaction, children's ages (control factor) had a significant effect on play Quality, $F(1, 193) = 27.63, p = .000, d = 0.7$, revealing high paternal Quality in play with older children and children who were full-term.

To investigate whether the characteristics of preterm children were related to paternal Quality in play, we computed hierarchical regression analyses for Sample 3 only with multiple independent variables, but limited them to nine because of the sample of less than 100 (after removing outliers). Blockwise regressions revealed $R^2 = .47, p = .006$. Child age, $\beta = .07, p = .000$, and Cognitive (not Motoric) scores, $\beta = .12, p = .003$, related to paternal Quality in play (see Table 3).

AC-Fathers and father-child play. A two-factorial ANCOVA with adversity (with vs. without) and gender (boys vs. girls) as factors, controlling for child age, tested differences in Intensity as well as Quality in play of AC-fathers. Results on Intensity revealed no main effects of adversity or gender, or an adversity \times gender interaction. In contrast, results on Quality displayed a main effect of adversity, $F(1, 53) = 27.19, p = .000, d = 1.4$, but did not show a main

TABLE 3. Quality in Father–Child Play Situations With Preterm Children Predicted by Selected Child Characteristics ($n = 91$)

	<i>b</i>	<i>SD b</i>	<i>p</i>
Model 1 ($R^2 = .46, p = .002$)			
Birth Weight (lb)	0.00	0.00	.066
Child Age (adjusted for gestational age)	0.06	0.02	.001**
Motor Score (BSID-III)	−0.01	0.02	.706
Cognitive Score (BSID-III)	0.11	0.04	.003**
Birth Weight × Motor Score	0.00	0.00	.529
Birth Weight × Cognitive Score	0.00	0.00	.529
Model 2 ($R^2 = .47, p = .006$)			
Birth Weight (lb)	0.00	0.00	.062
Child Age (adjusted for gestational age)	0.07	0.02	.000***
Motor Score (BSID-III)	0.00	0.02	.851
Cognitive Score (BSID-III)	0.12	0.04	.003**
Birth Weight × Motor Score	0.00	0.00	.667
Birth Weight × Cognitive Score	0.00	0.00	.539
Child Approachability (TTS)	−0.01	0.10	.945
Child Distractibility (TTS)	−0.13	0.12	.260
Child Vulnerability (TTS)	0.01	0.13	.321

Note. BSID-III = Bayley Scales of Infant and Toddler Development (3rd ed.); TTS = Toddlers Temperament Scale. $p < .05$. ** $p < .01$. *** $p < .001$.

effect of gender or an adversity × gender interaction. Compared to fathers without adversity, AC-fathers had lower Quality during the play situations, regardless of the child's age and gender.

To test whether father adversity was associated with fathers' Quality of play, we conducted a regression analysis for Sample 4, with the adversity score as an independent variable and father's age as a control variable. Given a reduced sample for which sufficient data were available ($n = 20$), we relied on bootstrapping to compensate for potential influential cases and deviations from normal distribution (Fu, Carroll, & Wang, 2005). If zero was not included within the bootstrapped 95% confidence intervals (Efron, 1987) with $R = 1,000$, the parameter appeared significant, $\alpha = .05$. Results indicated that higher adversity scores were associated with lower Quality, $b = -0.17$ (−0.42; −0.02), while father's age was irrelevant, $b = 0.04$ (−0.03; 0.12). Overall, both predictors explained $R^2 = 17.4%$ of the variance in Quality, demonstrating that adverse childhood experiences had a negative effect on play quality of the AC-fathers.

STUDY 3

Samples

Because Study 3 aimed to investigate associations between child internalizing behavior and paternal Quality during play situations, we combined Samples 1, 3, and 4, including only children older than 18 months ($n = 103$) due to the measurement limitations of the CBCL for younger children. Data of 48 children from Sample 1, 39 children from Sample 3, and 16 children from Sample 4 were involved, ranging from 19 to 68 months of age ($M = 27.08, SD =$

TABLE 4. Child Internalizing Behavior Predicted by Father Play Quality, Father Adversity, and Preterm Birth (including ages and child gender) ($n = 103$)

	<i>b</i>	<i>SD b</i>	<i>p</i>
Birth Weight (lb)	−0.01	0.01	.009**
Child Age (adjusted for gestational age)	−1.18	0.64	.069
Fathers' Age	0.00	0.80	.995
Child Gender	−8.30	9.02	.360
Adversity	20.10	17.89	.264
Quality	−23.15	11.16	.041*
Quality × Child Age	0.42	0.19	.033*
Quality × Fathers' Age	0.02	0.23	.916
Quality × Child Gender	1.60	2.47	.519
Quality × Birth Weight	0.00	0.00	.028*
Quality × Adversity	−3.54	5.50	.521

Note. Adversity is coded as 1 if the father is from Sample 4 vs. 0 if the father is from another sample. $R^2 = .17, p = .002$. * $p < .05$. ** $p < .01$.

10.20); the combined sample represented 47% of baseline fathers, 38% of PT-fathers, and 15% of AC-fathers with their children.

RESULTS

To explore the impact of paternal Quality on child internalizing behaviors, we conducted a regression analysis for Internalizing and involved predictors such as (a) children's age, gender, and birth weight; and (b) fathers' age and adversity status (i.e., AC-fathers or not) as well as interactions of all predictors with paternal Quality (see Table 3). The regression model explained 17% of the variance in children's internalizing behaviors (see Table 4); preterm children's birth weight, $\beta = -0.01, p = .009$, and the paternal Quality of play, $\beta = -23.15, p = .041$, showed a significant association with Internalizing. A 1-point gain on the Quality scale lowered the Internalizing score by more than 2 *SDs*. Neither adversity nor the adversity × Quality interaction related significantly to Internalizing. Furthermore, there was a significant Quality × child age interaction, $\beta = .42, p = .033$; high play quality was more strongly associated with lower Internalizing scores for younger children than for older children. The Quality × birth weight interaction on children's internalizing behaviors also was significant, $\beta = .00, p = .028$. The interaction between Quality and birth weight was stronger in preterm children than it was in full-term children and decreased with child age (see Figure 4).

DISCUSSION

Fathers' play with their children has become an integral part of the study of fatherhood. The present article aimed to gain more insights into fathers who engaged in physical (i.e., father-preferred) and pretend (i.e., mother-preferred) interactions to examine factors associated with how fathers play, whether fathers' play differs from mothers' play, and how fathers' play is related to their children's

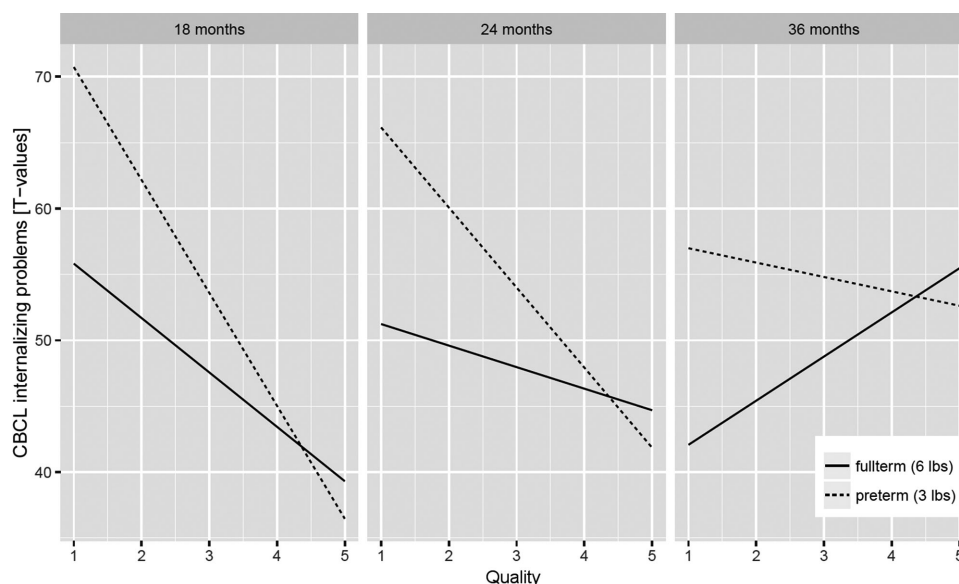


FIGURE 4. Child internalizing. t values of internalizing problems are regressed on father's scores of play Quality in preterm (3-lb) and full-term (6-lb) children differentiated by three age windows (18, 24 and 36 months).

development. We thus focused on the variation of paternal intensity and demonstrated that fathers activated their children throughout the preschool years regardless of child gender and age.

Unexpectedly, however, mothers activated the children as intensely as did fathers during the same play situation (with the same child), contradicting research suggesting that fathers are more likely to encourage risk-taking than are mothers (Moller et al., 2013). In contrast to risk-taking in other father-child encounters, the present results showed that fathers and mothers can engage in similar levels of activation during play that did not overstrain the child. Fathers activated their children with the same intensity regardless of whether the child was born preterm or full-term or was a boy or girl. In addition, fathers with adverse childhood experiences activated their children at quite moderate levels, and they did not do so in a wild manner as expected. We therefore conclude that the intensity of paternal play seemed to be highly robust against variations due to the child's maturation and the father's own childhood experience. Furthermore, we did not confirm commonly assumed gender differences in the intensity of play as a function of either gender of the child or gender of the parent (Lovas, 2005; Pruett, 1998). Our results suggest that both parents are adequately able to respond to their children's needs (see Cabrera et al., 2007; Laflamme, Pomerleau, & Malcuit, 2002; Lindsey & Mize, 2001; Tamis-LeMonda et al., 2004), even for stimulation.

We were, however, most interested in how sensitive fathers adjusted their activation to play and child. This article thus introduces a new measure for play quality that demonstrated excellent measurement invariance for father-mother as well as toddler-preschooler comparisons, and was thus applicable across the three studies. The quality score reflects how skillful a parent behaved as a playmate in general; that is, avoiding violating the child's

play concept by assuring the activity structure and supporting the cognitive-structural features of play. The properties of play might inform the activation theory on how to describe the father-child activation relationship in more detail. Fathers' tendency to destabilize (according to Paquette, 2004) might drive the child into emotional arousal which could be frightening, and therefore contradict the formation of a trustful relationship. However, quality as conceptualized in this study informs how to activate a child in the frame of child's felt security, and may therefore explain the possibility of forming trustful relationships (see Grossmann et al., 2002).

In the present study, fathers adjusted the quality of their play according to child gender, providing higher levels of play quality for boys, whereas mothers played better with girls, even though the types of play situations might not have been very gender-typed due to the specific design (i.e., pretending to act as an aircraft or to ride a horse). These results support research on gender development, which has demonstrated that children, as soon as they are aware of their gender, search for same-gender companions that fit with them behaviorally, and enjoy them more because a same-gender companion might provide the expected interactions better than might others (Ruble & Martin, 1998). Furthermore, the paternal play quality was rather independent of fathers' personality and stress. However, mothers' personality (e.g., neuroticism) was associated with low play quality, confirming associations of negative personality traits and parenting behaviors (e.g., Verhoeven, Junger, van Aken, Deković, & van Aken, 2007). Because enjoyment might be inhibited, neuroticism, as expected, worked against the maternal quality in the present play situations. Interestingly, the pressure to accept a child or to perceive low parenting competence improved the maternal play quality, perhaps to make up for current parenting problems. In addition, mothers' play quality, compared with

that of fathers, appeared to be more dependent on children's age, with mothers showing higher quality in play with preschoolers as compared with that of toddlers. This might be due to a better use of pretend features, which are developmentally more pronounced in play situations with preschoolers than with toddlers.

The results on quality of play altogether suggest that fathers behaved as sensitively as mothers, even during play interactions where the prospect of overstimulation is much greater than in other play situations. Moreover, fathers' sensitivity, as compared with mothers' sensitivity, appeared to be even disconnected from the adult's personality structure and stress. Perhaps the different views of the fathers on play, focusing on excitement, and mothers, orienting on teaching, demand different personal resources (e.g., Roggman, 2004).

Yet, even sensitive fathers have their limits, especially if the children are born early and are more vulnerable than children born full-term. The present study evidenced that less mature children (indicated by low birth weight) were faced with low paternal quality in play. Clearly, current research has shown that parents had more difficulties interacting with preterm children—however, only to the point where they seem like normal full-term children, indicating the parents had overcome the vulnerable child syndrome (e.g., Jackson, Ternstedt, & Schollin, 2003). This might have been the case in the present study because preterm children's better cognitive development (as well as higher age) predicted higher paternal play quality. Why better cognitive and not motoric development was associated with better paternal play quality can only be understood from the perspective of the emerging play scripts which might require more cognitive than motor skills in the present studies.

Although AC-fathers appeared indistinguishable regarding the intensity of their play situations from all the other fathers, they demonstrated very low play quality, reflecting low sensitivity and not being able to adjust the play behaviors to the major characteristics of the play. Moreover, when we related the play quality of these fathers to the severity of the adversities that they had experienced during their own childhood, we demonstrated that the more severe the adversities were, the lower the play quality of the AC-fathers appeared. Fathers' age had no effect on this association, suggesting that increased ages of these fathers did not weaken the association. Although lower play quality related to adverse experiences of the fathers during their own childhood, it remains a question whether the reduced opportunities for adult-child play of some fathers who did not live with their children also contributed to the lower quality.

After all, men with poor experiences with their own fathers may be motivated to provide good fathering, which they also associate with play. Although they might treat adult-child play situations as self-enriching experiences and gratifying social needs, their motivation to play can open a window to improve father-child relationships (e.g., Summers, Boller, Schiffman, & Raikes, 2006). On this account, the present article finally focused on child outcomes as related to paternal play quality and demonstrated strong beneficial effects of fathers' play on internalizing behaviors in most

children throughout the preschool years, but particularly in preterm children.

The generalization of these results is certainly limited due to the selectivity of the sample and the special play situation used in the present studies. Other types of play (e.g., cognitively stimulating or educating the child) might have revealed other insights into father-child play. Moreover, there is a requirement to not only explore the quality of father-child play but also to locate the frequencies and variations of play situations in day-to-day lives of the families to get more information on how play quality can be earned. Because this view on play situations in day-to-day lives were excluded in the present article, we also were not able to inform about influences that are rooted in the family dynamics and relational characteristics (e.g., Cabrera, Fitzgerald, Bradley, & Roggman, 2014; Fagan, 2014). When we provided a few insights into families with health-related and psychological difficulties, we demonstrated a strong link between difficulties caused in childhood and play quality. However, we were quite limited in the sample sizes of fathers with adverse childhood experiences and therefore unable to give details of specific influences on play quality for these fathers. Finally, we also are aware of the cross-sectional approach in our research, which did not allow for causal explanations. Research on the impact of father-child play on child behavioral or other outcomes, however, would need a longitudinal study design which could reveal how paternal play situations change with children's growing age, and how play behaviors serve in diverse manifestations of fatherhood.

In this article, father-child play has shown to be an established way of parenting, with fathers appearing as skilled in engaging in play as are mothers, and paternal play quality was sensitively adjusted in general, even though special family conditions made it harder for fathers to play. Because positive father-child relations prevent developmental delays (e.g., Shannon, Tamis-LeMonda, London, & Cabrera, 2002), we support the idea of anchoring the play motivation of fathers in interventions of overall caregiving patterns (e.g., Roggman, Boyce, Cook, Christiansen, & Jones, 2004), particularly for troubled families and families with nonresidential fathers or stepfathers.

REFERENCES

- Abidin, R. (1990). *Parenting Stress Index* (3rd ed.). Odessa, FL: Psychological Assessment Resources.
- Achenbach, T.M., & Rescorla, L.A. (2000). *Manual for the ASEBA Preschool Forms & Profiles*. Burlington: University of Vermont, Research Center for Children, Youth, & Families.
- Ahnert, L., Supper, B., & CENOF. (2014). Father-child attachment as central to the CENOF Research Study. *Attachment and Complex Systems (Attaccamento e Sistemi Complessi)*, 1, 33–42.
- Allen, E.C., Manuel, J.C., Legault, C., Naughton, M.J., Pivor, C., & O'Shea, T.M. (2004). Perception of child vulnerability among mothers of former premature infants. *Pediatrics*, 113, 267–273. <https://doi.org/10.1542/peds.113.2.267>

- Arbeitsgruppe Deutsche Child Behavior Checklist. (1998). Elternfragebogen für Klein- und Vorschulkinder (CBCL/1<FRAX;1;2>-5) [Questionnaire for parents of toddlers and preschoolers (CBCL/1<FRAX;1;2>-5)]. Köln: Arbeitsgruppe Kinder-, Jugend und Familiendiagnostik (KFJD).
- Arpi, E., & Ferrari, F. (2013). Preterm birth and behaviour problems in infants and preschoolage children: A review of the recent literature. *Developmental Medicine & Child Neurology*, 55, 788–796. <https://doi.org/10.1111/dmcn.12142>
- Bayley, N. (2006). *Bayley Scales of Infant and Toddler Development* (3rd ed.). San Antonio, TX: Psychological Corporation.
- Brown, G.L., McBride, B.A., Bost, K.K., & Shin, N. (2011). Parental involvement, child temperament, and parents' work hours: Differential relations for mothers and fathers. *Journal of Applied Developmental Psychology*, 32, 313–322. <https://doi.org/10.1016/j.appdev.2011.08.004>
- Cabrera, N.J., Fitzgerald, H.E., Bradley, R.H., & Roggmann, L. (2014). The ecology of father-child relationships: An expanded model. *Journal of Family Theory & Review*, 6, 336–354. <https://doi.org/10.1111/jftr.12054>
- Cabrera, N.J., Shannon, J.D., & Tamis-LeMonda, C. (2007). Fathers' influence on their children's cognitive and emotional development: From toddlers to pre-K. *Applied Developmental Science*, 11, 208–213. <https://doi.org/10.1080/10888690701762100>
- Cabrera, N.J., & Tamis-Lemonda, C.S. (Eds.). (2013). *Handbook of father involvement: Multidisciplinary perspectives*. East Sussex, United Kingdom: Routledge.
- Card, N.A., Selig, J.P., & Little, T.D. (2008). Modeling dyadic and interdependent data in the developmental and behavioral sciences. New York: Routledge.
- Chapman, D.P., Whitfield, C.L., Felitti, V.J., Dube, S.R., Edwards, V.J., & Anda, R.F. (2004). Adverse childhood experiences and the risk of depressive disorders in adulthood. *Journal of Affective Disorders*, 82, 217–225. <https://doi.org/10.1016/j.jad.2003.12.013>
- Cowan, P.A., Cohn, D.A., Cowan, C.P., & Pearson, J.L. (1996). Parents' attachment histories and children's externalizing and internalizing behaviors: Exploring family systems models of linkage. *Journal of Consulting and Clinical Psychology*, 64, 53–63. <https://doi.org/10.1037/0022-006x.64.1.53>
- Dixon, J. (2008). Young people leaving care: Health, well-being and outcomes. *Child and Family Social Work*, 13, 207–217. <https://doi.org/10.1111/j.1365-2206.2007.00538.x>
- Efron, B. (1987). Better bootstrap confidence intervals. *Journal of the American Statistical Association*, 82, 171–185. <https://doi.org/10.2307/2289144>
- Fagan, J. (2014). Adolescent parents' partner conflict and parenting alliance, fathers' prenatal involvement, and fathers' engagement with infants. *Journal of Family Issues*, 35, 1415–1439. <https://doi.org/10.1177/019251313491411>
- Flanders, J.L., Leo, V., Paquette, D., Pihl, R.O., & Séguin, J.R. (2009). Rough-and-tumble play and the regulation of aggression: An observational study of father-child play dyads. *Aggressive Behavior*, 35, 285–295. <https://doi.org/10.1002/ab.20309>
- Flanders, J.L., Simard, M., Paquette, D., Parent, S., Vitaro, F., Pihl, R.O., & Séguin, J.R. (2010). Rough-and-tumble play and the development of physical aggression and emotion regulation: A five-year follow-up study. *Journal of Family Violence*, 25, 357–367. <https://doi.org/10.1007/s10896-009-9297-5>
- Fu, W.J., Carroll, R.J., & Wang, S. (2005). Estimating misclassification error with small samples via bootstrap cross-validation. *Bioinformatics*, 21(9), 1979–1986. <https://doi.org/10.1093/bioinformatics/bti294>
- Fullard, W., McDevitt, S.C., & Carey, W.B. (1984). Assessing temperament in one- to three-year-old children. *Journal of Pediatric Psychology*, 9, 205–217.
- Gleason, T.R. (2005). Mothers' and fathers' attitudes regarding pretend play in the context of imaginary companions and of child gender. *Merrill-Palmer Quarterly*, 51, 412–436. <https://doi.org/10.1353/mpq.2005.0022>
- Grossmann, K., Grossmann, K.E., Fremmer-Bombik, E., Kindler, H., Scheuerer-Engelisch, H., & Zimmermann, P. (2002). The uniqueness of the child-father attachment relationship: Fathers' sensitive and challenging play as a pivotal variable in a 16-year longitudinal study. *Social Development*, 11, 307–331. <https://doi.org/10.1111/1467-9507.00202>
- Hagan, L.K., & Kuebli, J. (2007). Mothers' and fathers' socialization of preschoolers' physical risk taking. *Journal of Applied Developmental Psychology*, 28, 2–14. <https://doi.org/10.1016/j.appdev.2006.10.007>
- Harrison, M.J., & Magill-Evans, J. (1996). Mother and father interactions over the first year with term and preterm infants. *Research in Nursing & Health*, 19, 451–459. [https://doi.org/10.1002/\(SICI\)1098-240X\(199612\)19:6<451::AID-NUR1>3.0.CO;2-N](https://doi.org/10.1002/(SICI)1098-240X(199612)19:6<451::AID-NUR1>3.0.CO;2-N)
- Horan, J.M., & Widom, C.S. (2015). Cumulative childhood risk and adult functioning in abused and neglected children grown up. *Development and Psychopathology*, 27, 927–941. <https://doi.org/10.1017/s095457941400090x>
- Jackson, K., Ternestedt, B.-M., & Schollin, J. (2003). From alienation to familiarity: Experiences of mothers and fathers of preterm infants. *Journal of Advanced Nursing*, 43, 120–129. <https://doi.org/10.1046/j.1365-2648.2003.02686.x>
- John, A., Halliburton, A., & Humphrey, J. (2013). Child–mother and child–father play interaction patterns with preschoolers. *Early Child Development and Care*, 183, 483–497. <https://doi.org/10.1080/03004430.2012.711595>
- Kazura, K. (2000). Fathers' qualitative and quantitative involvement: An investigation of attachment, play, and social interactions. *Journal of Men's Studies*, 9, 41–57. <https://doi.org/10.3149/jms.0901.41>
- Kitzmann, K.M., Gaylord, N.K., Holt, A.R., & Kenny, E.D. (2003). Child witnesses to domestic violence: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 71, 339–352. <https://doi.org/10.1037/0022-006x.71.2.339>
- Kwon, K.A., Jeon, H.J., Lewsader, J.T., & Elicker, J. (2012). Mothers' and fathers' parenting quality and toddlers' interactive behaviours in dyadic and triadic family contexts. *Infant and Child Development*, 21, 356–373. <https://doi.org/10.1002/icd.1746>
- Laflamme, D., Pomerleau, A., & Malcuit, G. (2002). A comparison of fathers' and mothers' involvement in childcare and stimulation

- behaviors during free-play with their infants at 9 and 15 months. *Sex Roles*, 47, 507–518. <https://doi.org/10.1023/a:1022069720776v>
- LaFreniere, P. (2013). Children's play as a context for managing physiological arousal and learning emotion regulation. *Psychological Topics*, 22, 183–204.
- Lamb, M.E. (Ed.). (2010). *The role of the father in child development*. Chichester, United Kingdom: Wiley.
- Lewis, C., & Lamb, M.E. (2003). Fathers' influence on children's development: The evidence from two-parent families. *European Journal of Psychology of Education*, 18, 211–228. <https://doi.org/10.1007/bf03173485>
- Lindsey, E.W., & Mize, J. (2001). Contextual differences in parent-child play: Implications for children's gender role development. *Sex Roles*, 44, 155–176. <https://doi.org/10.1023/A:1010950919451>
- Lovas, G.S. (2005). Gender and patterns of emotional availability in mother-toddler and father-toddler dyads. *Infant Mental Health Journal*, 26, 327–353. <https://doi.org/10.1002/imhj.20056>
- MacDonald, K. (Ed.). (1993). *Parent-child play: Descriptions and implications*. Albany: State University of New York Press.
- Moller, E.L., Majdandzic, M., de Vente, W., & Bogels, S.M. (2013). The evolutionary basis of sex differences in parenting and its relationship with child anxiety in Western societies. *Journal of Experimental Psychopathology*, 4, 88–117. <https://doi.org/10.1007/s10802-013-9774-4>
- Murray, S., & Goddard, J. (2014). Life after growing up in care: Informing policy and practice through research. *Australian Social Work*, 67, 102–117. <https://doi.org/10.1080/0312407X.2013.868010>
- Muthén, B., du Toit, S.H., & Spisic, D. (1997). Robust inference using weighted least squares and quadratic estimating equations in latent variable modeling with categorical and continuous outcomes. Los Angeles: University of California.
- NICHD Early Child Care Research Network. (2000). Factors associated with fathers' caregiving activities and sensitivity with young children. *Journal of Family Psychology*, 14, 200–219. <https://doi.org/10.1037/0893-3200.14.2.200>
- Notaro, P.C., & Volling, B.L. (1999). Parental responsiveness and infant-parent attachment: A replication study with fathers and mothers. *Infant Behavior & Development*, 22, 345–352. [https://doi.org/10.1016/S0163-6383\(99\)00012-0](https://doi.org/10.1016/S0163-6383(99)00012-0)
- Paquette, D. (2004). Theorizing the father-child relationship: Mechanisms and developmental outcomes. *Human Development*, 47, 193–219. <https://doi.org/10.1159/000078723>
- Paquette, D., & Bigras, M. (2010). The risky situation: A procedure for assessing the father-child activation relationship. *Early Child Development and Care*, 180, 33–50. <https://doi.org/10.1080/03004430903414687>
- Paquette, D., & Dumont, C. (2013). Is father-child rough-and-tumble play associated with attachment or activation relationships? *Early Child Development and Care*, 183, 760–773. <https://doi.org/10.1080/03004430.2012.723440>
- Pellegrini, A.D., & Smith, P.K. (1998). Physical activity play: The nature and function of a neglected aspect of play. *Child Development*, 69, 577–598. <https://doi.org/10.1111/j.1467-8624.1998.tb06226.x>
- Pruett, K.D. (1998). Role of the father. *Pediatrics*, 102, 1253–1261.
- Rammstedt, B., & John, O.P. (2005). *Kurzversion des Big Five Inventory (BFI-K): Entwicklung und Validierung eines ökonomischen Inventars zur Erfassung der fünf Faktoren der Persönlichkeit [Short version of the Big Five Inventory (BFI-K): Development and validation of an economic inventory for measuring the five factors of personality]*. Göttingen, Germany: Hogrefe Verlag GmbH & Co. KG.
- Reuner, G., & Rosenkranz, J. (2006). *Bayley Scales of Infant and Toddler Development—Third Edition (Deutsche Bearbeitung)*. Göttingen, Germany: Hogrefe.
- Roggman, L.A. (2004). Do fathers just want to have fun? Commentary on theorizing the father-child relationship. *Human Development*, 47, 228–236.
- Roggman, L.A., Boyce, L.K., & Cook, J. (2001). Widening the lens: Viewing fathers in infants' lives. In H.E. Fitzgerald, K.H. Karraker, & T. Luster (Eds.), *Infant development: Ecological perspectives* (pp. 193–220). New York: Routledge Falmer.
- Roggman, L.A., Boyce, L.K., Cook, G.A., Christiansen, K., & Jones, D. (2004). Playing with daddy: Social toy play, Early Head Start, and developmental outcomes. *Fathering: A Journal of Theory, Research, and Practice about Men as Fathers*, 2, 83–108.
- Ruble, D.N., & Martin, C.L. (1998). Gender development. In W. Damon (Ed.), *Handbook of child psychology* (Vol. 3, pp. 933–1016). New York: Wiley.
- Samejima, F. (1969). Estimation of latent ability using a response pattern of graded scores. *Psychometrika Monograph Supplement*, 34, 100.
- Savalei, V., & Rhemtulla, M. (2013). The performance of robust test statistics with categorical data. *British Journal of Mathematical and Statistical Psychology*, 66, 201–223. <https://doi.org/10.1111/j.2044-8317.2012.02049.x>
- Shannon, J.D., Tamis-LeMonda, C.S., London, K., & Cabrera, N. (2002). Beyond rough and tumble: Low-income fathers' interactions and children's cognitive development at 24 months. *Parenting: Science and Practice*, 2, 77–104. https://doi.org/10.1207/s15327922par0202_01
- Shannon, J.D., Tamis-LeMonda, C.S., & Margolin, A. (2005). Fathers' involvement in infancy: Influence of past and current relationships. *Infancy*, 8, 21–41. https://doi.org/10.1207/s15327078in0801_2
- Spila, B., Makara, M., Kozak, G., & Urbanska, A. (2008). Abuse in childhood and mental disorder in adult life. *Child Abuse Review*, 17, 133–138. <https://doi.org/10.1002/car.1022>
- StGeorge, J., Fletcher, R., & Palazzi, K. (2016). Comparing fathers' physical and toy play and links to child behaviour: An exploratory study. *Infant and Child Development*, 26, 1–22. <https://doi.org/10.1002/icd.1958>
- Steele, H., Steele, M., & Fonagy, P. (1996). Associations among attachment classifications of mothers, fathers, and their infants. *Child Development*, 67, 541–555. <https://doi.org/10.2307/1131831>
- Stern, M., Karraker, K.H., Sopko, A.M., & Norman, S. (2000). The prematurity stereotype revisited: Impact on mothers' interactions with premature and full-term infants. *Infant Mental Health Journal*, 21, 495–509. [https://doi.org/10.1002/1097-355\(200011/12\)21:6<495::AID-IMHJ7>3.0.CO;2-F](https://doi.org/10.1002/1097-355(200011/12)21:6<495::AID-IMHJ7>3.0.CO;2-F)

- Summers, J.A., Boller, K., Schiffman, R.F., & Raikes, H.H. (2006). The meaning of good fatherhood: Low-income fathers' social constructions of their roles. *Parenting, 6*, 145–165. <https://doi.org/10.1080/15295192.2006.9681303>
- Tamis-LeMonda, C.S., Shannon, J.D., Cabrera, N.J., & Lamb, M.E. (2004). Fathers and mothers at play with their 2-and 3-year-olds: Contributions to language and cognitive development. *Child Development, 75*, 1806–1820. <https://doi.org/10.1111/j.1467-8624.2004.00818.x>
- Tomasello, M. (2008). *Origins of human communication*. Cambridge, MA: MIT Press.
- Tröster, H. (2011). EBI - Elterliches-Belastungs-Inventar. Deutsche Version des Parenting Stress Index (PSI) von R.R. Abidin – Manual [EBI – Parent-Stress-Inventary. German version of the Parenting Stress Index (PSI) of R. R. Abidin – Manual]. Göttingen, Germany: Hogrefe Verlag GmbH & Co. KG.
- Verhoeven, M., Junger, M., van Aken, C., Deković, M., & van Aken, M.A.G. (2007). Parenting during toddlerhood contributions of parental, contextual, and child characteristics. *Journal of Family Issues, 28*, 1663–1691. <https://doi.org/10.1177/019251307302098>
- Volling, B.L., Blandon, A.Y., & Gorvine, B. (2006). Maternal and paternal gentle guidance and young children's compliance from a within-family perspective. *Journal of Family Psychology, 20*, 514–525. <https://doi.org/10.1037/0893-3200.20.3.514>
- Wilson, S., & Durbin, C.E. (2013). Mother-child and father-child dyadic interaction: Parental and child bids and responsiveness to each other during early childhood. *Merrill–Palmer Quarterly, 59*, 249–279. <https://doi.org/10.1353/mpq.2013.0018>