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DOI

[10.1080/10409289.2016.1258928](https://doi.org/10.1080/10409289.2016.1258928)

Publication date

2017

Document Version

Final published version

Published in

Early Education and Development

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[Link to publication](#)

Citation for published version (APA):

van Polanen, M., Colonnesi, C., Fukkink, R. G., & Tavecchio, L. W. C. (2017). Is Caregiver Gender Important for Boys and Girls? Gender-Specific Child–Caregiver Interactions and Attachment Relationships. *Early Education and Development*, 28(5), 559-571. <https://doi.org/10.1080/10409289.2016.1258928>

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Is Caregiver Gender Important for Boys and Girls? Gender-Specific Child–Caregiver Interactions and Attachment Relationships

Marleen van Polanen^{a,b}, Cristina Colonnesi^{a,b}, Ruben G. Fukkink^{a,b}, and Louis W. C. Tavecchio^a

^aResearch Institute of Child Development, University of Amsterdam; ^bResearch Priority Area Yield, University of Amsterdam

ABSTRACT

Outcomes of studies with exclusively or predominantly female caregivers suggest that boys in child care are involved with interactions, attachment relationships, and care of lower quality than girls. We investigated to what extent child gender ($N = 38$, 19 boys) and caregiver gender ($N = 38$, 19 males) is associated with child–caregiver interactions and attachment relationships. Children’s involvement and caregivers’ sensitive and stimulation behaviors were observed using systematic observations of semistructured play. Children’s secure attachment with caregivers was observed using the Attachment Q-Sort. *Research Findings:* Male and female caregivers showed similar sensitive behaviors toward boys and girls, and children had similar levels of secure attachment with male and female caregivers. Female caregivers had a tendency to stimulate boys more than girls, and this behavior was associated with a lower secure attachment in boys. Girls’ involvement with the caregiver was associated with male and female caregivers’ sensitive behavior and with male but not female caregivers’ stimulation. Conversely, boys’ involvement with the caregiver was elicited by sensitive but not stimulating behavior of male caregivers but not by female caregivers. *Practice or Policy:* Boys and girls can have equally positive interactions and attachment relationships with both male and female caregivers.

In child care studies, samples consist exclusively or predominantly of female caregivers. Only a small number of studies in child care—some of them already published in the 1980s—have included male caregivers (e.g., Aigner, Huber, Traxl, Poscheschnik, & Burkhardt, 2013; Brandes, Andrä, Röseler, & Schneider-Andrich, 2015; Fagot, 1981; Perdue & Connor, 1978; Robinson, 1981; Robinson & Canaday, 1978), showing inconsistent results regarding gendered child–caregiver interactions. Whereas Brandes et al. (2015) found no differences in interactions of male and female caregivers with boys and girls, results of a study by Aigner et al. (2013) showed that male caregivers are more permissive, provoke more mobility, and provide a more relaxing structure than female caregivers. Hence, there is currently no clear empirical evidence that boys and girls can benefit from the presence of male professional caregivers in child care in terms of positive child–caregiver interactions and quality of attachment relationships.

According to gender schema theory (Bem, 1981), children can identify more easily and develop closer relationships with same-gender caregivers. Children play an active role in their gender development and tend to seek out environments that further strengthen their gender-typed expectations and interests (Leaper & Friedman, 2007). Thus, girls in child care experience female-specific opportunities when interacting with predominantly female caregivers, resulting in closer child–caregiver relationships between female caregivers and girls compared to boys (Ewing & Taylor,

CONTACT Ruben G. Fukkink  r.g.fukkink@uva.nl  Universiteit van Amsterdam, Research Institute of Child Development and Education, Postbus 15780, Amsterdam 1001 NG, The Netherlands.

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2009). Conversely, boys may have male-specific opportunities with male caregivers according to this theory.

According to gender socialization theory (Leaper & Friedman, 2007), children systematically experience gender-specific opportunities that contribute to the development of gender differences in expectations, values, preferences, and skills. Gender-typical behaviors and attitudes are reinforced by differential treatment of boys and girls. More specifically, both male and female caregivers favor male-specific behaviors (e.g., dominance and autonomy) in boys and encourage female-specific behaviors (e.g., calm and submissive behaviors) in girls (Basow, 2004). This socialization process starts early, and between 3 and 6 years of age children's understanding of their own and other people's gender becomes increasingly stable and consistent (Leaper & Friedman, 2007; Martin, Ruble, & Szkrybalo, 2002).

Both theoretical perspectives suggest gender-typed differences in the interactions between caregivers and children. More specifically, gender socialization theory predicts, in general, different behaviors of female and male caregivers toward boys and girls. Gender schema theory predicts that interactions between caregivers and children of the same sex are more positive than mixed-sex interactions. Gender schema theory also suggests that not only interactions but also relationships between caregivers and children are more positive in same-sex dyads than in mixed-sex dyads.

Approximately 3% of caregivers in early childhood care and education in countries all over the world are male, and child care is a highly feminized profession throughout the world (Organisation for Economic Co-operation and Development, 2012). Because of the gender imbalance in regular child care settings, interactions between children and caregivers may be different in a child care setting, and relationships may develop in different ways. In fact, some authors have expressed concerns about the lack of appropriate gender role models for boys in child care, and therefore boys are considered to have fewer opportunities to build close relationships with (predominantly female) professional caregivers (see Bullough, 2015, and Drudy, 2008, for an overview). The present study investigated child-caregiver interactions and child attachment relationships in same-sex and mixed-sex child-caregiver dyads, exploring possible gendered differences.

Child-Caregiver Interaction: Gendered Differences

There is a growing body of evidence showing that boys in regular child care are involved with interactions, care, and attachment relationships of lower quality than girls (Ahnert, 2006; Ahnert, Pinguet, & Lamb, 2006; De Schipper, Tavecchio, & Van IJzendoorn, 2008; National Institute of Child Health and Human Development Early Child Care Research Network [NICHD ECCRN], 1997; Wachs, Gurkas, & Kontos, 2004; Winer & Phillips, 2012). In a study by Winer and Phillips (2012), caregivers reported more behavior problems, less closeness, and more conflicts for boys. Also, boys are involved with poorer quality interactions (e.g., lack of stimulating interactions, low levels of involvement, use of negative language, and restrictive actions), experience more conflicts (Winer & Phillips, 2012), receive less sensitive care from caregivers (NICHD ECCRN, 1997), and are more likely to experience lower quality care than girls (Wachs et al., 2004; Winer & Phillips, 2012). Studies into caregiver interactions with children have thus reported disconcerting results for boys. The gender mismatch may underlie these findings (Ahnert et al., 2006), which suggests that the lack of male caregivers may have a negative influence on interaction quality for boys in child care.

To date, no studies have explored the relation between children's and caregivers' gender and their interactional behavior in child care. It might be that the reported lower pedagogical quality for boys in child care, such as less sensitive and less stimulating interactions (NICHD ECCRN, 1997; Winer & Phillips, 2012), is the result of poorer interactions between female caregivers and boys. Although male and female caregivers were found to have similar sensitive and stimulating interactions with boys and girls (Brandes et al., 2015), more research is needed to study this hypothesis.

Attachment Between Children and Professional Caregivers

Young children form attachment relationships with parents or primary caregivers, seeking proximity to and reassurance from them in times of distress (Ainsworth & Bell, 1970; Bowlby, 1982; Cassidy, 2008). Although we acknowledge that relationships with caregivers are not as exclusive and durable as relationships with parents (Verschuere & Koomen, 2012), children are also able to establish relationships with professional caregivers with an attachment component (Goossens & Van IJzendoorn, 1990; Hamilton & Howes, 1992; Howes & Spieker, 2008; van IJzendoorn, Sagi, & Lambermon, 1992).

Attachment theory stresses that sensitive parenting is needed in order to develop secure relationships (de Wolf & van IJzendoorn, 1997). On a related note, child care studies have shown that caregiver sensitivity contributes to the development of secure relationships (Goossens & Van IJzendoorn, 1990; Howes & Hamilton, 1992; Howes & Smith, 1995) and that the way in which caregiver and child are available to each other emotionally (i.e., sensitivity and stimulation of caregiver and responsiveness and involvement of child) is predictive of the attachment relationship with the caregiver (Shivers, 2008).

The relation between child gender and the development of secure attachment relationships in child care was reported in a meta-analytic study by Ahnert et al. (2006) and also in Ahnert (2006). These two studies on toddlers' attachment relationships with professional caregivers showed that girls develop secure relationships with their caregivers more often than boys do. Other child care studies have found similar results, stressing the importance of gender effects for attachment in a child care context (see De Schipper et al., 2008; NICHD ECCRN, 1997). Similarly, studies in which the relationship between teachers and students has been evaluated have found that female teachers have substantially less close relationships with boys than with girls (Pianta, 1999; Rudasill & Rimm-Kaufman, 2009; Spilt, Koomen, & Jak, 2012), also in early childhood classrooms (Howes, 2000).

Recent family studies of mother-child and father-child attachment have revealed that fathers contribute to attachment relationships with their children in a gender-specific way, defined as the father-child activation relationship (Dumont & Paquette, 2013; Paquette, 2004). In this unique bond, fathers satisfy children's needs to be stimulated, to overcome limits, and to learn to take chances in risky and unknown situations, contributing to a secure attachment relationship. It is possible that this specific relationship between male caregivers and children exists in child care too. Because most care providers are female, gender-biased behaviors might lead them to interact more in line with girls' expectations of adequate interactions (e.g., Leaper, 2002), thereby ensuring that girls form secure attachments more readily than boys do (Ahnert et al., 2006). Also, girls seek more proximity to their female caregivers than boys (Carpenter & Huston-Stein, 1980) and show more secure behavior compared to boys, who show more resistance and avoidance than girls (Cugmas, 2011). These studies included exclusively female caregivers, and hence it remains unclear whether boys would build less secure relationships with male caregivers too.

A recent small-scale study by Aigner et al. (2013) revealed that both male and female caregivers perceive relationships with girls as more secure than relationships with boys. However, male caregivers reported closer relationships with boys than female caregivers did. Also, observations showed that boys show more attachment-related behaviors (e.g., contact seeking) with male caregivers compared to female caregivers. Yet this study does not explain how children's attachment relationships are related to the gender of the caregiver or to the combination of the gender and the interaction behavior of the caregiver in terms of sensitivity and stimulating behavior during interactions with the child.

The Present Study

In the present study we investigated whether children's and caregivers' interactional behaviors and their attachment relationship were associated with gender. Both male and female caregivers as well as

3-year-old boys and girls were included in the study. Children's and caregivers' interactional behaviors during a semistructured play situation were systematically observed using a microanalytic approach to explore child-caregiver interaction. The microanalytic approach provides precise information about the occurrence of specific interactional behaviors. Microlevel analysis allowed for slow motion observation, enabling us to code even the smallest behaviors that cannot be captured by a macrolevel analysis (Feldman, 2007; Fivaz-Depeursinge & Favez, 2006; McHale & Fivaz-Depeursinge, 1999). Moreover, this approach allowed us to code who (male vs. female caregiver, boys vs. girls) performed a specific behavior and toward whom. Children's interactional behaviors were studied as indicators of their participation and involvement with the caregiver and caregivers' sensitive and stimulating behavior. Furthermore, we observed the quality of the attachment relationship of boys and girls with male and female caregivers during naturally occurring, daily situations. In accordance with Rohrmann and Brody's (2015) recommendation to use different types of data collection, we included multiple measures (i.e., microanalytic video observations of a semistructured situation and real-life observations of naturally occurring situations) to study the effect of gender in child-caregiver relationships with more detail.

First, a goal of this study was to investigate whether children's observed interactional behavior is affected by caregiver gender. Based on gender schema theory (Bem, 1981), we hypothesized that boys would be less involved in interactions with female caregivers than with male caregivers. Conversely, girls were expected to be more involved with female caregivers than with male caregivers. Second, we investigated differences in sensitivity and stimulation behaviors of male and female caregivers. Female caregivers were expected to show more sensitive behaviors, whereas male caregivers were expected to display more stimulation behaviors (Paquette, 2004). Third, we tested whether boys and girls have gender-specific attachment relationships with male and female caregivers. Based on earlier studies (Ahnert, 2006; Ahnert et al., 2006; Aigner et al., 2013; De Schipper et al., 2008), we hypothesized that girls would develop more secure attachment relationships with female caregivers than would boys. Furthermore, in line with Aigner et al. (2013) and gender schema theory (Bem, 1981), we hypothesized that boys would be more often securely attached to male caregivers than to female caregivers. Finally, we investigated the connection between children's secure attachment and involvement and caregivers' sensitive and stimulation behavior. Children's secure attachment and involvement with the caregiver were expected to be positively associated with more sensitive and stimulating caregiver behavior (Goossens & Van IJzendoorn, 1990; Howes & Hamilton, 1992; Howes & Smith, 1995). Moreover, based on gender socialization theory and earlier child care research (Aigner et al., 2013), we expected boys' attachment and involvement to be more related to male caregivers' sensitive and stimulating behavior than to female caregivers' behavior.

Method

Participants

Participants in this study were 38 children (19 boys) in day care groups throughout The Netherlands with children 0–4 years of age ($n = 3$) or 2–4 years of age ($n = 18$). Children were on average 36.2 months old ($SD = 1.4$, range = 33–38 months) and had participated in the current group for at least 3 months. Caregivers ($N = 38$, 19 males) had been employed as permanent pedagogical staff for at least 3 months in the children's groups. All caregivers had completed the regular vocational pedagogical training. Caregivers had worked in the same day care group for an average of 32.93 months ($SD = 17.45$). They were on average 37.8 years old ($SD = 8.1$, range = 21–50 years) and had on average 11.5 years of work experience in child care, of which 4 years was in the participating day care group. No significant difference was found between male and female caregivers in their work experience in child care. On average, caregivers worked 27 hr per week in the participating day care group, with a minimum of 16 hr a week. In each group, both male and female

caregivers were paired with the same children (one boy and one girl), resulting in a total of four child-caregiver dyads.

Procedure

Male and female caregiver dyads, working together in the same care group, received an informed consent letter prior to participation. After caregivers agreed to participate, two children (a boy and a girl) who met the selection criteria (i.e., age and gender) were randomly chosen for each caregiver dyad by the experimenter. An active consent form was sent to the parents of the participating children to inform them about the study and ask permission to observe and videotape their children. When a child could not participate, another child from the group was selected. In three cases caregivers were not able to select a child matching in age and gender; these groups were excluded from participation. No reward was given for participation. The study was approved by the Ethics Committee of the Faculty of Social and Behavioral Science of the University of Amsterdam, Registration No. 2013-CDE-3290.

Each participating group was visited for two full days by a trained observer. On the first day two child-caregiver dyads were observed (e.g., male caregiver with boy and with girl or male caregiver with girl and female caregiver with girl), one in the morning and one in the afternoon, counterbalanced for both caregiver and child gender. Observations took place during naturally occurring situations, like playing outside, lunchtime, and structured group activities. In addition, on each observation day the male or female caregiver participated in semistructured play with both the boy and the girl (i.e., children participated twice in this activity, once with the male caregiver and once with the female).

Measures

Observation and Coding of Child-Caregiver Interactions

The semistructured play was videotaped and used for the measurement of children-caregiver interactions. Two fine motor skills games were selected for these sessions: animal upon animal (HABA®, Bad Robach, Germany) and buckaroo (Hasbro®, Pawtucket, Rhode Island, USA). The game animal upon animal consists of small wooden figures that can be built into a tower. In the game buckaroo, small objects can be hung on the back of a horse that jumps when too much pressure is put on its saddle. The difficulty level of these games was assumed to provide opportunities for caregivers to stimulate the children and provide support. The male and female colleagues, from the same care group, each played a different game with the children (i.e., either animal upon animal or buckaroo) so that children played both games once. Type of game was counterbalanced across caregiver gender. Short instructions for the games were provided to the caregiver before starting the session, emphasizing that caregivers were free to use the game by their own interpretation. The duration of each game was approximately 10 min.

We conducted a microanalysis of the child-caregiver interaction to analyze child-caregiver interaction using a 1-s interval exactness. The computer program The Observer XT 11.5 was used to code child and caregiver behaviors (Noldus, Trienes, Hendriksen, Jansen, & Jansen, 2000). The design with mutually exclusive behaviors enabled us to precisely compare the caregiver's interactions directed toward the boy, toward the girl, or toward both children.

Coding of child interactional behavior. To measure child interactional behavior on a microlevel as proposed by Feldman (2007), Fivaz-Depeursinge and Favez (2006), and McHale and Fivaz-Depeursinge (1999), we developed a multicategorical coding scheme (see Table 1). We coded interactional behaviors of both children in the same observation separately, once for the boy and once for the girl, counterbalancing for child gender. We divided child interactional behavior into *involvement with the caregiver* (i.e., responsiveness and initiation) and *involvement with the game* (i.e., involvement). *Responsiveness* was defined as the number of verbal and nonverbal interactions

Table 1. Description of observed child and caregiver interaction behavior.

Behavior	Description
Child	
Involvement with caregiver	
Initiation	Child tells caregiver something, asks a question of caregiver, or clearly seeks nonverbal contact
Responsiveness	Child answers caregiver's question or reacts to what caregiver says, verbally or nonverbally (e.g., nods or shakes head, laughs when caregiver jokes)
Involvement with game	
Involvement	Child interacts with caregiver or the other child, concentrates on the game, and does not get easily distracted, also when it is the other child's turn
Proactive ^a	Child is hyperactively engaged in the game and very energetic (e.g., screaming, laughing loudly, overenthusiastic)
Disturbing ^a	Child is disturbing the game (e.g., throwing toys, playing aggressively with toys)
Not involved ^a	Child is not engaged with the game or interactions with caregiver and gets easily distracted (e.g., does not respond to caregiver's questions, walks away, or plays with other toys)
Caregiver	
Sensitivity	
Responsiveness	Caregiver responds adequately to child (e.g., reacts to questions, confirms what child is doing or saying)
Comforting	Caregiver comforts child, responds to emotions of child
Praising	Caregiver gives positive feedback, such as compliments, applause, or thumbs up
Touching—affectionate	Caregiver touches child in an affectionate way (e.g., cuddling, patting)
Stimulation	
Encouraging	Caregiver supports child to fulfil action independently (e.g., saying "You can do it," "Try again")
Stimulating	Caregiver stimulates child to explore the game (e.g., sets a higher aim, suggests playing the game in a different way, challenges children to perform a difficult action) or to think by prompting or asking activating questions ("Think again," "Is it really a shoe?")
Informing	Caregiver provides children with general knowledge (e.g., "A mole lives underground"), corrects what child says, or informs children about the rules of the game or demonstrates game
Giving space	Caregiver provides space for child initiatives (e.g., accepts idea of child, lets child choose how to play the game)
Organizational support	Caregiver structures the game (e.g., saying "It's not your turn yet" or "Wait")

^aSub-behaviors were not included in further analyses.

with the caregiver (e.g., child answers caregiver's question or nods or shakes head). *Initiation* was defined as the number of interactions initiated by the child (e.g., child asks a question or tells the caregiver what he or she sees or does). When the child was involved with the game, we coded *involvement*, which refers to the extent to which the child was engaged in the game. Two children participated in the interaction session with the caregiver, and a child could be engaged during his or her own turn in the game (the child plays the game) but also during the other child's turn (e.g., the child is observing the other child when he or she is playing the game); behaviors included involvement, proactive involvement, disrupting behavior, and not involved. Responsiveness and initiation were coded as point events (i.e., the number of occurrences was coded). Involvement with the game was coded as a state event (i.e., duration in seconds was coded).

Four trained observers who were blind to the observations of caregiver interaction behavior independently coded the videos after training with three observations and consultation with a trained coder. Both children in each videotape were coded by the same observer. To estimate interrater reliability, two observers coded 20% of the observations. Mean interrater reliability rates (Cohen's kappa) within the main category of involvement with the caregiver were .83 for initiation and .80 for responsiveness. Mean interrater reliability for involvement with the game was $\kappa = .91$.

Coding of caregiver sensitivity and stimulation. This measure was developed to investigate professional caregivers' interactional patterns regarding two attachment-based dimensions: sensitivity and stimulation (see Table 1). Behaviors in the *sensitivity* dimension indicated the extent

to which caregivers responded adequately to the signals of children (behaviors included responsiveness, comforting, praising, and affective touching). The *stimulation* dimension included behaviors that related to caregivers' activation of children's independent exploration of the game (encouraging, stimulating, informing, giving space, and organizational support). Behaviors in this dimension related to the way caregivers guided, stimulated, and taught children during the game. Caregiver behaviors were scored as state events, with mutually exclusive subcategories. The frequencies of these behaviors were used in the analyses. Both verbal and nonverbal caregiver behaviors were scored (e.g., the caregiver saying to the child "You did very well!" or the caregiver applauding the child). In addition, each behavior was coded as directed to the boy, directed to the girl, or directed to both children, as mutually exclusive categories. The frequencies of occurrences of sensitive and exploration behaviors directed toward the boy or directed toward the girl were used in the analyses as indexes of individual interactional behavior of the caregiver toward the child.

Four trained observers independently coded the videos after training with three observations and consultation with a trained coder. Because all children participated in two play situations, two different observers coded each child-caregiver dyad. Mean interrater reliability rates for 20% of the observation scale were $\kappa = .83$ for sensitivity and $\kappa = .81$ for stimulation.

Child-Caregiver Attachment Relationship

The Attachment Q-Sort 3.0 (Waters, 1995; Waters & Deane, 1985) was used to examine the quality of attachment relationships in child-caregiver dyads after a 3-hr observation. In previous studies, this instrument was used to assess child-caregiver relationships and was found to accurately reflect relationship qualities in group settings (as compared to the Strange Situation test; see, e.g., Ahnert, 2006; Ahnert et al., 2006; Van IJzendoorn, Vereijken, Bakermans-Kranenburg, & Riksen-Walraven, 2004). Attachment security scores were calculated using the criterion sort method (see Waters, 1995). Attachment security scores range in theory from -1.00 to $+1.00$, with scores above the cutoff score of $.33$ indicating secure relationships. The observer was trained in the use of the Attachment Q-Sort 3.0 observation and sorting procedure using videotaped observations at Purdue University, West Lafayette, Indiana. Attachment security scores of four observations from trainer and observer were compared, and interobserver reliability (Cohen's kappa) was $.84$ prior to data collection. Two child-caregiver dyads were observed by two raters, with interobserver reliability of $\kappa = .81$.

Statistical Analyses

Child and caregiver data were not normally distributed, and therefore we used the nonparametric Mann-Whitney test to analyze gender differences and nonparametric Spearman correlations to examine the relationship between child and caregiver behaviors. In order to analyze the affective relationship between children and caregivers, we used generalized estimating equations (GEE; Zeger & Liang, 1986; Zeger, Liang, & Albert, 1988). GEE serve as an extension of the generalized linear model and can be used to analyze correlated data with binary, discrete, or continuous outcomes when assumptions of normality and independent observations are not met, as is the case in repeated measures designs. The normally distributed attachment data were analyzed using a linear regression model. Child and caregiver gender were entered as within factors to control for shared variance in the sample, and an independent correlation structure was applied. The Wald test was used to test the significance of effects. In order to test the direction of the effects, we computed regression coefficient betas and Sidak's pairwise comparisons.

Effect sizes for caregiver and child interactions as well as attachment relationships were computed in order to measure the strength of the effect. Effect sizes are calculated as Cohen's d , with 0.20 , 0.50 , and 0.80 , respectively, denoting small, medium, and large effects (Cohen, 1992). Preliminary analyses showed no significant effect of type of group (i.e., groups with children ages 0-4 or groups with

children ages 2–4) on attachment relationships of boys or girls, responsiveness of boys or girls, initiation of boys or girls, sensitivity or stimulation of caregivers, or caregiver age and work experience: attachment relationships of boys, $F(2, 37) = 2.17$, $p = .129$, F values between 2.17 and 0.04, p values between .129 and .449.

Results

Child–Caregiver Interactions

Child Interactional Behavior

Both boys and girls were responsive as well as initiating toward caregivers and were involved with the game for most of the time (see Table 2). Proactive, disruptive, and uninvolved behaviors were barely observed and were therefore excluded from the analyses. No significant effects of child gender or caregiver gender were found for responsiveness, initiation, or involvement; effect sizes indicated only small or small-to-medium effects. Our results indicated that boys and girls were equally involved during the play with male and with female caregivers.

Caregiver Sensitivity and Stimulation

Outcomes related to caregiver interactions toward boys and girls are summarized in Table 3. No significant difference was found for sensitivity between male and female caregivers. A close to significant trend was found showing that female but not male caregivers stimulated boys more often than girls ($p = .068$).

Table 2. Descriptive and inferential statistics for observed child behaviors (in seconds or frequencies) toward male and female caregivers in child care.

Involvement	Male Caregivers	Female Caregivers	Cohen's d (Male-Female)	U	p
	M (SD)	M (SD)			
Involvement with caregiver					
Initiation (f)					
Boys	13.13 (7.54)	12.73 (7.59)	0.05	157.50	.681
Girls	10.39 (8.94)	10.46 (8.08)	–0.01	165.00	.864
Cohen's d (boys-girls)	0.33	0.29			
Responsiveness (in frequencies)					
Boys	20.56 (9.90)	21.22 (10.68)	–0.06	153.00	.576
Girls	22.94 (10.14)	20.78 (10.37)	0.21	128.50	.203
Cohen's d (boys-girls)	–0.24	0.04			
Involvement with game					
Involvement (s)					
Boys	457 (24)	500 (32)	0.26	134.50	.266
Girls	500 (38)	453 (35)	–0.09	155.00	.623
Cohen's d (boys-girls)	0.23	–0.09			

Table 3. Descriptive and inferential statistics for observed number of caregiver behaviors toward boys and girls.

Caregiver Interaction	Descriptive Statistics			Test Statistics	
	Boys M (SD)	Girls M (SD)	Cohen's d (Boys-Girls)	U	p
Sensitivity					
Male caregivers	30.21 (9.89)	26.37 (12.83)	0.34	139.00	.772
Female caregivers	30.72 (8.51)	26.50 (10.16)	0.45	151.50	.500
Cohen's d (male-female)	–0.06	–0.01			
Stimulation					
Male caregivers	13.74 (6.56)	12.84 (7.34)	0.13	102.50	.780
Female caregivers	16.22 (5.64)	12.39 (7.17)	0.55	147.00	.068
Cohen's d (male-female)	–0.41	0.06			

Table 4. Spearman's correlations for child–caregiver interaction behaviors and child attachment.

Involvement	Male Caregivers		Female Caregivers	
	Sensitivity	Stimulation	Sensitivity	Stimulation
Boys				
Involvement with caregiver				
Initiation	.44 [†]	–.07	.12	.02
Responsiveness	.13	.24	.37	.09
Involvement with the game				
Involvement	–.05	–.29	.15	.30
Girls				
Involvement with caregiver				
Initiation	.35	.25	.36	.16
Responsiveness	.72**	.51*	.49 [†]	.10
Involvement with the game				
Involvement	.11	.04	.17	.10

[†] $p < .10$, * $p < .05$, ** $p < .01$ (2-tailed).

Child Secure Attachment

The GEE analysis revealed no main effects or interaction effect of child or caregiver gender. Both boys and girls were on average securely attached to both male and female caregivers (boys to male caregivers: $M = .53$, $SD = .04$, range = .21–.72; boys to female caregivers: $M = .47$, $SD = .03$, range = .19–.73; girls to male caregivers: $M = .51$, $SD = .05$, range = .01–.73; girls to female caregivers: $M = .49$, $SD = .03$, range = .22–.73). Both boys and girls had on average higher attachment security scores with male caregivers than with female caregivers, but this difference was only close to significant, Wald $\chi^2(1, N = 84) = 3.69$, $p = .068$.

Relation Between Child and Caregiver Interaction Behaviors

Exploration of the relation between child involvement and caregiver sensitivity and stimulation (see Table 4) revealed no association between boys' responsiveness and male and female caregivers' sensitivity and stimulation. For girls, responsiveness was significantly associated with sensitive and stimulating behavior of male caregivers, whereas a close to significant correlation was found between girls' responsiveness and female caregiver sensitivity.

Relation Between Child Secure Attachment And Caregiver Interaction Behavior

Spearman correlations for children's secure attachment and caregiver sensitivity and stimulation showed a negative relation between boys' secure attachment and female caregivers' stimulation ($r_s = -.79$, $p = .001$). For girls, no significant association was found between secure attachment and caregiver sensitivity and stimulation behaviors.

Discussion

This is, to our knowledge, the first child care study in which the role of the gender of both children and professional caregivers in child–caregiver interactions and child attachment was investigated. Our results indicate that boys and girls were equally involved during the interactions with male and female caregivers and that both male and female caregivers were sensitive toward boys and girls. Furthermore, boys initiated more interactions when male caregivers showed higher levels of sensitivity, whereas girls' responsiveness was found to be associated with male and female caregivers' sensitivity and to male caregivers' stimulation. No relation was found for girls' attachment and caregiver interactions. A hypothesis related to more positive relations for same-sex caregiver–child

dyads was not confirmed: Boys and girls appeared to be securely attached to male and female caregivers.

An interesting finding is that girls' responsiveness was more positively related to male interactional behavior, which suggests an opposite-gender match. A substantial, close to significant association was found for boys' initiation and male caregiver sensitivity as well. An earlier study (Siegal, 1987) on gender effects in parent-child interactions showed that compared to mothers, fathers differentiate more between sons and daughters. However, in our study we did not find gender effects on the number of male caregivers' sensitive and stimulating interactions with boys and girls, and male caregivers interacted as often with boys as with girls.

Our study does also provide some evidence for gendered relations in a child care context. Both boys and girls had positive attachment relationships with their caregivers, but boys were less securely attached to female caregivers with higher levels of stimulation; for girls, no association was found between attachment and caregiver stimulation. These findings suggest that both boys and girls may develop secure relationships with professional caregivers, but in distinct ways. It is possible that boys develop more secure relationships with female caregivers who provide an adequate level of support but also give room for individual initiatives. Furthermore, female caregivers, who stimulated boys more often than male caregivers, may overstimulate boys, so that boys may experience a lack of respect for autonomy during the task. Another possible explanation is that female caregivers' stimulation toward boys might be less appropriate for boys, hampering boys' secure feelings.

Our findings did not support the importance of same-sex child-caregiver relationships, as hypothesized by gender socialization theory and researchers in the field (e.g., Basow, 2004; Leaper & Friedman, 2007). Caregiving is considered a typically feminine task, and male caregivers in professional child care show less stereotypically masculine behaviors than men in other professions (Paquette, 2004). The fact is that male and female caregivers in our study behaved in similar ways (see also Bullough, 2015). Frequent exposure to colleagues' gender-specific behavior in preservice education and child care work might stimulate a socialization process in which both male and female caregivers adapt to each other's behaviors and possible gender differences become less visible. Hence, children may be less likely to detect same-gender roles and may interact similarly with caregivers of both sexes in a child care context.

Even though male caregivers did not stimulate children more than female caregivers in our study, we found evidence that activating behavior of males has a greater impact on both boys and girls, and thus the activation relationship seems to apply to male caregivers in child care as well.

Limitations of the Current Study

This study into gender effects on interactions and relationships in child care is not without limitations. First, the statistical power in this study was limited. The modest sample size is a direct reflection of the very small and diminishing population of male caregivers in Dutch day care, and this context puts practical limits on this field of research. Second, the observations of the attachment relationships occurred during regular routines in daily situations (e.g., during lunch, play, or bed time). However, the semistructured play situations that were used for the measurement of child-caregiver interactions included one boy and one girl to enable a controlled study of gender effects; this does not fully reflect the group dynamics of child care. To gain deeper insight into naturally occurring group dynamics, future research should also include group interactions during diverse natural situations as well, like having lunch or playing outside. Finally, this study focused on the type of interaction (i.e., either responsive or initiating to caregiver) children had with caregivers. We did not explore the content of the interactions, including expressions of assertion and affiliation, for example (Leaper, 1994; Strough & Berg, 2000). To conclude, a broader analysis of (gendered) interactions during various natural contexts, with a focus on both pedagogical quality and content, in a larger sample of men and women in child care would be an important next step in this line of study.

Conclusion

This study is a first step in exploring the relation between the gender of both child and caregiver and mutual interactions and the child–caregiver attachment relationship. We found evidence that male and female caregivers in child care have similar, equally positive interactions with boys and girls. Furthermore, both male and female caregivers were able to provide a secure base for boys and girls. Our findings therefore do not support strong claims from gender schema theory that predict more positive interactions and relationships between same-sex dyads (i.e., male caregivers with boys, female caregivers with girls). The sensitivity and stimulation of male caregivers was positively related to initiatives of girls during play, which suggests that the role of the male is important for girls' behavior during play.

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