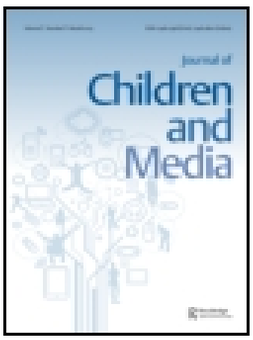

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Parent versus child report of young children's parasocial relationships in the United States

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ABSTRACT

This study examines parent perceptions of their young children's one-sided, emotionally tinged relationships with media characters, also known as parasocial relationships (PSR). Prior research has collected data on young children's PSR by surveying parents, while other studies have relied directly on child interview. The current study is the first to compare children's answers to those of their parents. Factor analyses revealed that parents and children both reported three components of children's PSR: *social realism, attachment and character personification* (parents) or *attachment and friendship* (for their children), and *humanlike needs*. Both parent and child reports accounted for approximately 60% of the variance in children's PSR. Nonetheless, only approximately one-third of parents and children reported on the same favorite character. The implications for research on children's PSR using both parent and child reports are discussed.

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Children's lives are embedded in media, with an abundance of potential social partners available as peers and friends (Richert, Robb, & Smith, 2011). When children wake up, many watch Elmo on Sesame Street, they head to school and see the Disney princess Elsa on their friend's backpack, they use a Dora iPad app during the drive home, and they play with their Thomas the Tank Engine figurine before going to bed. Children sometimes form a *parasocial relationship (PSR)* with these characters (Horton & Wohl, 1956), which is a relationship that is inherently one-sided, yet filled with feelings and emotions just like relationships formed between real individuals (Bond & Calvert, 2014a).

Although research on adult PSR is relatively common (Eyal & Rubin, 2003; Kassing & Sanderson, 2009; Perse & Rubin, 1989; Rubin & McHugh, 1987), much less scholarly thought has focused on children's PSR (Giles, 2002). This lack of research on children's PSR is particularly problematic, as childhood is now saturated with media use, with 0–8-year-old children spending approximately two hours each day with screens (Common Sense Media, 2013). Technological advances have also divided children's screen time among many different types of devices, including television, tablets, and mobile phones. One element that remains

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consistent for children as they switch from device to device is the characters featured in this media content.

Media characters can influence children's learning, behavior, and personal identity (Calvert, Richards, & Kent, 2014; Gola, Richards, Lauricella, & Calvert, 2013; Hoffner, 2008; Meyer, 1973). In particular, media characters can act as powerful teachers during the critical timeframe of early childhood (Calvert & Richards, 2014). Indeed, research demonstrates that children as young as 21 months of age learn best from onscreen characters with whom they have developed a parasocial nurturing relationship over time (Calvert et al., 2014).

In addition to behavioral measures (i.e., nurturance) of children's PSR (Calvert et al., 2014; Gola et al., 2013), parents or children have also been asked about children's favorite characters (Bond & Calvert, 2014a; Hoffner, 1996; Wilson & Drogos, 2007). Our goal here was to develop and compare measures of children and their parents to assess early PSR.

Parasocial relationships

PSR were originally referred to as parasocial interaction (PSI) in early research in which adults' relationships and trust in onscreen figures, such as news anchors, were examined (Horton & Wohl, 1956; Houlberg, 1984). Since then a distinction has been drawn between the two terms (Krcmar, 2010; Schramm & Hartmann, 2008). PSI now refers to the one-sided interactions that children have with media characters while viewing them on a screen, such as waving, talking, and saying hello (Lauricella, Gola, & Calvert, 2011; O'Doherty et al., 2011). *PSR* are longer term, affective relationships that children and adults form with their favorite media characters (Calvert, 2015; Gola et al., 2013; Hoffner, 2008; Schramm & Hartmann, 2008). Thus, it is possible for a child to engage in PSI without having a parasocial relationship with the character onscreen, or to have a parasocial relationship without engaging in PSI (Calvert et al., 2014).

The research on children's PSR suggests that when quantified, PSR have multiple dimensions and components (Bond & Calvert, 2014a; Calvert & Richards, 2015; Richards & Calvert, 2014; Rosaen & Dibble, 2008). The current study compares parent and child reports to examine the components of children's PSR that have been identified in previous literature. We focus on a child's favorite character, as it is most likely to represent an emotionally tinged relationship, which is the essence of a parasocial relationship (Calvert & Richards, 2014).

Parent report

Asking parents to report on their children's thoughts and behaviors is one viable method of measuring childhood phenomena. Bond and Calvert (2014a) conducted the most extensive parent survey to date on children's PSR for children between the ages of zero and eight. The authors designed a large survey that not only asked parents to report on their child's PSR with their child's favorite character but also their child's general media use, parental behaviors around media use, and child toy play with media character-based toys. The parasocial relationship component of their parent survey yielded three main conceptual categories: *social realism, attachment*, and *character personification*. Physical attractiveness, a fourth component, was dropped from their model as only one item loaded on that factor. Because other scholars have found physical attractiveness to be an important aspect of children's PSR (see Hoffner, 1996; Rubin & McHugh, 1987), it was included in the current measure.

Social realism

Whether or not children believe that their favorite characters exist in the real world (Wright, Huston, Reitz, & Piemyat, 1994) is an essential component of PSR (Bond & Calvert, 2014a). In particular, both adults' and children's beliefs that characters exist in real life are positively related to PSR with media personalities (Giles, 2002; Rosaen & Dibble, 2008). Young children differ in their beliefs about whether their favorite media characters are totally real or completely pretend (Calvert & Richards, 2015; Richards & Calvert, 2014), partly because they encounter these characters onscreen, but also in real-life theme parks and live shows. Between the ages of two and six, children also get much better at understanding whether something is real or pretend, as their conceptions of reality begin to become more logical, like those of adults (DiLalla & Watson, 1988; Piaget, Tomilson, & Tomilson, 2007; Sharon & Woolley, 2004).

Attachment

An essential part of human connection is attachment (Bowlby, 1969). When children feel stressed and need to be soothed, they gravitate toward people that make them feel comfortable and safe (Bowlby, 1969). People, including children, also form attachments to media characters (Bond & Calvert, 2014a; Cole & Leets, 1999), including bonding that takes place through plush toy versions of media characters that they can hug and cuddle (Calvert et al., 2014; Gola et al., 2013).

Character personification

Just as children personify inanimate objects during the preschool years (Wellman & Hickling, 1994), so too do many children attribute these qualities to their favorite characters. Indeed, before children even begin to form a parasocial relationship, they need to ascribe personhood to the character (Giles, 2002). The personification process involves looking at these characters as trusted friends who have thoughts and emotions (Bond & Calvert, 2014a).

Physical attractiveness

A media character's physical attractiveness is an important facet of older children's PSR (Hoffner, 1996; Reeves & Greenberg, 1977). Girls in particular find attractive characters more worthy of being a favored media character (Hoffner, 1996). We included physical attractiveness as a potential component of PSR in the current study, even though it had been dropped in the model of Bond and Calvert (2014a).

Child interview

Another method for surveying children's PSR is to ask children directly about their favorite characters (Calvert & Richards, 2015; Hoffner, 1996; Richards & Calvert, 2014; Rosaen & Dibble, 2008; Wilson & Drogos, 2007). With this methodology, researchers can obtain a first-hand perspective on children's thoughts and feelings about their favorite characters.

To create a child measure, Calvert and Richards (2015) converted the parasocial relationship survey items from Bond and Calvert (2014a) into a child-friendly format with simpler words and a visual and verbal Likert-type scale that children could respond to by saying the answer or pointing to smiley faces. Consistent with the findings of Bond and Calvert (2014a), *social realism* emerged again as a component of children's PSR when interviewing

a child directly. *Attachment and friendship*, the latter including questions that had been part of *character personification* during parental report (Bond & Calvert, 2014a), emerged as a second factor of PSR in children's reports (Calvert & Richards, 2015; Richards & Calvert, 2014).

Finally, a unique factor, *humanlike needs,* emerged from the child report (Calvert & Richards, 2015; Richards & Calvert, 2014). This factor included children's beliefs that their favorite character got hungry, sleepy, and felt sad when the character made a mistake. The emergence of this factor is consistent with prior research on children's play behaviors with character-based toys: children's nurturing behaviors directed toward media-based plush characters (feeding them, tucking them in for a nap) increased significantly over time (Calvert et al., 2014; Gola et al., 2013). Because these character-based nurturing behaviors were a behavioral indicator of an emotionally tinged parasocial relationship (Calvert et al., 2014), they had been modified from the more abstract character personification items about character wants and needs in the parent survey (Bond & Calvert, 2014a) and made more concrete in their wording (e.g., does the character get hungry?) for the child interview (Calvert & Richards, 2015; Richards & Calvert, 2014).

Given the similarities and differences that occurred between the first sample of parents in Bond and Calvert (2014a) and the sample of children (Calvert & Richards, 2015; Richards & Calvert, 2014), our hypotheses about how the current set of parents would compare with the prior two samples (i.e., their own children and a separate sample of parents) were as follows:

H_1: *Social realism*, a factor that emerged both in the parent data from Bond and Calvert (2014a), as well as with the child-only data from Calvert and Richards (2015), will also emerge as a component of PSR in the current sample of parents.

H_2: Because attachment had emerged as a factor of PSR for a prior parent sample (Bond & Calvert, 2014a) and as the factor *attachment and friendship* for the child sample (Calvert & Richards, 2015; Richards & Calvert, 2014), *attachment* will also emerge as a factor for parasocial relationships in the current parent sample.

H_3: Consistent with the earlier findings of Bond and Calvert (2014a), *character personification* will emerge as a factor in the current sample of parents.

H_4: Due to developmental differences that exist in how abstractly adults and children think (Piaget et al., 2007), there will be a discrepancy between children's concrete *humanlike needs* factor and what is found for their parents.

Child report vs. parent report

In the current study, we compared children's PSR via child interview data (Calvert & Richards, 2015; Richards & Calvert, 2014) to survey reports by their parents. Thus, we are examining parent–child dyad reports of these PSR, which has not yet been conducted in the literature on PSR. Although rarely studied, parent–child dyad data have the potential to provide rich insight into children's PSR through the unique, yet supplementary perspectives of parents and their children.

When examining the two samples of different participants (one children, the other their parents), we compared the overall amount of variance in PSR in each of the samples described. This allowed us to compare how well each group was able to conceptualize and operationalize PSR in their report. Prior analysis revealed that child reports of their PSR explained approximately the same amount of variance (Calvert & Richards, 2015; Richards & Calvert, 2014) as reported by an earlier parent sample surveyed by Bond and Calvert (2014a),

even though the factors that they identified were not exactly the same. Other research looking at how parents and children agree on scales indicate that both parents and children can give valid reports about the child's feelings (Theunissen et al., 1998). Because these measures are based on children's favorite characters, we were also interested in whether or not parents and children reported on the same favorite character. We asked two research questions to address these issues:

RQ_1: Will the percentage of variance explained in children's parasocial relationship scores between parent and child dyad reports be similar?

RQ_2: Will parents and their children report the same favorite character when asked who the child's favorite character is?

Method

Participants

Participant recruitment for this study primarily occurred through child care centers and preschools in the Washington, DC metropolitan region. Directors of these centers were invited to participate in the project over the phone by research assistants. If the center or school indicated interest in participating in the project, the director distributed an informational flyer and consent forms to parents to fill out and return so that their child could participate in the project at their school or center. Experimenters began with a total sample of 247 children at the schools and child care centers. Eighteen children did not want to participate when the testing session at their school took place, and 35 children reported an ambiguous character that could not be identified (such as "Dinosaurs" or "Plain Fairy"), leaving 194 children between 2 and 6 years of age (M = 51.49 months, SD = 9.35 months; 45.4% male) who provided a clear answer that could be used for analysis. Children were 41.5% Caucasian, 16.6% Hispanic/Latino, 7.9% African American, 4.8% Asian, 11.4% of other/mixed ethnicities, and 17.8% of the sample did not report their children's race/ethnicity.

Parents who provided contact information were asked to answer the parent survey. A total of 141 parents completed the survey, yielding a 57.1% response rate. These parents reported on their children who ranged from 2 to 6 years of age (M = 49.86 months, SD = 11.25 months; 46.8% male). The racial breakdown of the children whose parents completed the survey was 61.7% Caucasian, 15.6% Other/Mixed ethnicities, 9.2% African American, 6.4% Hispanic or Latino, and 6.4% Asian. One parent (.7%) did not report ethnicity.

The overlap in the samples from parents and their children yielded 141 parent–child pairs. Twenty-five parents did not report a favorite character for their child, and an additional nine parents who said that their child had a favorite character gave a general rather than a specific response, reducing this sample to 107 parents. These responses were used to compare the parent parasocial survey measure to their child's analogous responses on the parasocial interview.

Parasocial relationship measure

The parent survey (n = 14 items) and child interview (n = 11 items) consisted of naming the child's favorite character plus additional questions drawn from the three conceptual categories previously identified by Bond and Calvert (2014a) that characterize the different facets of

Table 1. Parent survey questions and child survey analog questions.

Factor	Parent question (from Bond & Calvert, 2014a)	Analogous child question
Social Realism	"[Child] knows that [character] is imaginary."*	"Is [character] … totally real, mostly real, kind of real, mostly pretend, or totally pretend?"*
	"[Child] believes that [character] is real."	"Is [character] … totally pretend, mostly pretend, kind of pretend, mostly real, or totally real?"
	"When [character] acts out a behavior on screen (like dancing, singing, or playing a game), [child] believes that [character] is performing the behavior in real life."	This question was not retained for child use
Attachment	"[Character] makes [child] feel safe."	"How safe does [character] make you feel when you are scared? … really safe, safe, kind of safe, a little bit safe, or not safe at all?"
	"[Character] makes [child] feel comfortable."	This question was not retained for child use
	"The voice of [character] soothes [child]."	This question was not retained for child use
Character Personification	"[Child] thinks that [character] has thoughts and emotions."	"Does [character] have … a whole lot of feelings, a lot of feelings, kind of has feelings, a little bit of feelings, or no feelings at all?"
	"[Child] trusts [character]"	"Do you believe what [character] tells you … all of the time, a lot of the time, sometimes, a little bit of the time, or not at all?"
	"[Child] treats [character] as a friend."	"Is [character] … your best friend, your good friend, kind of a good friend, a little bit of a friend, or not your friend at all?"
	"[Child] believes that [character] has needs."	(a) "Does [character] get … really hungry, hungry, kind of hungry, a little bit hungry, or not hungry at all?" (b) "Does [character] get … really sleepy, sleepy, kind of sleepy, a little bit sleepy, or not sleepy at all?"
	"[Child] gets sad when [character] gets sad or makes a mistake."	"How do you feel when [character] makes a mistake? … really sad, sad, kind of sad, a little bit sad, or not sad at all? (Note: This question used blue sad faces instead of the yellow sad faces used in all other questions)
	"[Child] believes that [character] has wants."	This question was not retained for child use
Physical Attractiveness	"[Child] thinks that [character] is pretty, cute, or attractive."	"Is [character] … really cute, kind of cute, a little bit cute, or not cute at all?"

*Reverse coded.

children's PSR. These categories were *social realism, attachment,* and *character personification*. We also measured a fourth category, *physical attractiveness*, based on prior results of other studies focusing on children's PSR (see Hoffner, 1996; Rubin & McHugh, 1987). All items are presented in Table 1.

The parent survey and child interview used in the current study were shorter than the original parent survey by Bond and Calvert (2014a), as all original survey questions that cross-loaded or had low-factor loadings and had been dropped in the original study were not included in this study. In addition, the current study only included questions about PSR and did not ask parents about their children's general media use, parental behaviors around media use, and toy play with media character-based toys as Bond and Calvert (2014a) had done. Parents responded to the survey questions using a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Below are descriptions of each of the factors that comprised the parasocial measure, based on the results of Bond and Calvert (2014a).

Social realism

Whether or not the child believed that the character was real accounted for 14.47% of the variance in PSR by Bond and Calvert (2014a). For this concept, we asked the parents questions such as "[Child] knows that [character] is imaginary" and "When [character] acts out a behavior on screen (like dancing, singing, or playing a game), [child] believes that [character] is performing the behavior in real life."

Attachment

The feeling that the child is soothed and feels more safe and comfortable when in the presence of the character, termed attachment, was found to be a second component of PSR by Bond and Calvert (2014a), accounting for 11.67% of the variance in their study. Attachment in the current survey included three items adapted from their study, such as "[Character] makes [child] feel safe" and "[Character] makes [child] feel comfortable."

Character personification

Bond and Calvert (2014a) found that character personification was a central component of PSR, accounting for 32.75% of the variance in the concept. This factor consisted of six items that measured how much the child thought that the character was a person - e.g., the favorite character could be a friend who had thoughts and emotions. Parents answered questions such as "[Child] thinks that [character] has thoughts and emotions" and "[Child] treats [character] as a friend."

Physical attractiveness

Bond and Calvert (2014a) found that physical attractiveness, although important in previous child studies of PSR (Hoffner, 1996; Rubin & McHugh, 1987), loaded onto its own factor with only one survey question, making it a weak factor which was subsequently dropped from their analysis. We included this item in our questionnaire because other scholars found physical attractiveness to be important (e.g., Hoffner, 1996; Rubin & McHugh, 1987). We asked parents "[Child] thinks that [character] is pretty, cute, or attractive."

Procedure

Both the child interview of their PSR and the parent survey of their children's PSR were administered to the children and their parents, respectively.

Child interview

Simplified questions about children's PSR were adapted from the factor analysis of parental reports by Bond and Calvert (2014a). These questions focused on three clusters: social realism, attachment, and character personification. The child's viewpoint on the physical attractiveness of the character was also measured.

Children were visited at their preschools and child care centers where they were interviewed by trained research assistants about their favorite media character[1] (see Calvert & Richards, 2015; Richards & Calvert, 2014). Specifically, children identified a favorite media character and then answered child-friendly, simplified versions of the Bond and Calvert (2014a) questions. For example, if the child noted that Dora was her favorite character, the experimenter said, "Now we're going to talk about [Dora]." Each question was then tailored

so that the child was asked specifically about Dora. For example, the experimenter would ask the child: "Does [Dora] have … a whole lot of feelings, a lot of feelings, kind of has feelings, a little bit of feelings, or no feelings at all?" while pointing to one of five respective yellow smiley faces on a Likert scale. Children responded to the questions about their favorite media character by pointing to a smiley face on the Likert scale or by saying their response.

Parent survey

Shortly after their child was interviewed at preschool or at the child care center, parents were sent the adult version of the child PSR survey to fill out. Parents could take the survey either online or on paper, depending on their preference (n = 129 online, n = 12 paper).[2] Parents were surveyed on their demographic information, and then asked for the name of their child's favorite media character. Parents filled out the survey, which consisted of the questions that were the outcome of the factor analyses that measured children's PSR through parental report (see Bond & Calvert, 2014a).

The child's name and the name of the child's favorite media character were automatically imputed into the survey for parents who filled out the questionnaire electronically. For example, a parent with a child with the name of John who believes John's favorite character is Thomas the Tank Engine, would answer the question of "John thinks that Thomas the Tank Engine has thoughts and emotions" instead of the base question "[Child] thinks that [character] has thoughts and emotions." Parents who filled out the paper version of the survey would respond to a similar question such as "My child thinks that this favorite character has thoughts and emotions."

Results

Factor analysis of parent reports

Given the multidimensional nature of PSR, we conducted a principal component factor analysis on the parent parasocial relationship responses and employed Varimax rotation (n = 107). The factor analysis yielded three factors that had eigenvalues greater than 1.0, with one additional factor approaching retention. This additional factor only had one item, which measured physical attraction - "[Child] finds [character] cute, pretty, or attractive" (factor loading = *.90*). This finding was consistent with the results of Bond and Calvert (2014a) who also found that physical attractiveness loaded into its own factor. Because it was again only a one-item factor, we dropped this factor and the question from subsequent analyses in the parent study. An additional scree-plot test confirmed that the construct of PSR could be characterized with three separate and distinct components.

As per guidelines set forth in Pett, Lackey, and Sullivan (2003), the survey item was assigned to a factor if it had a factor loading approaching *.40*. In cases in which the question cross-loaded into multiple factors and the question could not be assigned to a higher loading factor that was conceptually interpretable and consistent with prior research and a priori predictions, the question was dropped from the analysis (see Tabachnick & Fidell, 2014). The resulting factors collectively explained 70% of the variance in children's PSR, which we have defined as *social realism*, *attachment and character personification*, and *humanlike needs*. See Table 2.

As predicted, *social realism* emerged as a distinct component of parents' perceptions of their children's PSR with their favorite character, explaining 19.68% of the variance. This

Table 2. Factor analysis of parents' perceptions of their child's parasocial relationship with favorite media characters.

Factor	Eigen values	% of variance explained	Item				*M*	*SD*
Social Realism	1.97	19.68	"[Child] knows that [character] is imaginary."*	.02	**.91**	.00	2.59	1.08
			"[Child] believes that [character] is real."	.09	**.91**	.12	2.82	1.32
			"When [character] acts out a behavior on screen (like dancing, singing, or playing a game), [child] believes that [character] is performing the behavior in real life."	.21	**.86**	.19	3.05	1.26
Attachment and Character Personification	3.58	35.81	"[Child] trusts [character]"	**.66**	.29	.12	3.78	.78
			"[Character] makes [child] feel safe."	**.83**	.01	.20	3.53	.89
			"The voice of [character] soothes [child]."	**.61**	.03	.06	3.28	.95
			"[Character} makes [child] feel comfortable."	**.79**	–.01	.16	4.00	.71
			"[Child] thinks that [character] has thoughts and emotions."	**.60**	.13	–.06	3.88	.80
Humanlike Needs	1.44	14.44	"[Child] believes that [character] has needs."	.11	.18	**.93**	3.48	.78
			"[Child] believes that [character] has wants."	.16	.06	**.94**	3.52	.81

*Reverse coded. Bold characters signify the highest factor loading for that survey item.

factor included items about the child believing that the character was either real or pretend, and whether or not the child believed that the character performed behaviors on the screen in real life, which is consistent with other studies that have defined this factor in the past (i.e., Bond & Calvert, 2014a; Calvert & Richards, 2015; Richards & Calvert, 2014). Only 35.5% of parents agreed or strongly agreed with the statement that their child believed that the character was real. The raw scores on these three questions were used to calculate a mean score to create a composite social realism component, which had high internal consistency ($\alpha = .89$). Multiple regression analyses revealed that the younger the child, the higher parent ratings were on the social realism factor, $\beta = -.39$, $t(105) = -4.35$, $p < .001$, with age explaining a significant amount of variance in children's social realism scores, $R^2 = .15$, $F(1, 105) = 18.90$, $p < .001$. Put another way, parents of younger children reported that their child thought that the character was real more so than parents of older children did. Using regression analyses, we examined if older children were more likely to report live rather than animated favorite characters, as live characters may be perceived as being more real than animated ones are. Two reliable coders ($\kappa = .83$) scored the characters on a scale of 1 (least social realism) to 6 (most social realism). Children's age, however, was not a significant predictor of their beliefs about the level of social realism in the character, $p > .05$.

As predicted, *attachment and character personification* emerged as a component of parents' perceptions of their children's PSR with a favorite media character. However, these emerged as one combined factor rather than as two separate factors, as had been found in Bond and Calvert's (2014a) parent survey. The factor *attachment and character personification* explained 35.81% of the variance in children's PSR in the current parent survey. This factor mainly consisted of questions about whether or not the child perceived the favorite character as someone who could be trusted, made the child feel comfortable and safe, and who had thoughts and emotions, as per parent perception.

Two additional items had cross-loaded on different factors. One item was, "[Child] treats [character] as a friend," with loadings of .45 and .45 for both the *attachment and character personification* and *social realism* factors, respectively. "[Child] gets sad when [character) gets sad or makes a mistake" also had cross loadings of .44 and .31 on *attachment and character personification* and *humanlike needs*, respectively. Given the ambiguity of which factor these two questions should belong due to relatively high cross-loadings and difficulty of conceptual interpretability, they were dropped from further analysis. For each participant, composite scores of *attachment and character personification* were computed by calculating the mean of each participant's raw scores on the items that comprised this factor, leading to satisfactory internal consistency ($\alpha = .75$). Regression analyses revealed that age was not a significant predictor of the attachment and character personification scores ($p > .05$).

Contrary to prediction, *humanlike needs* emerged as the third component of parents' perceptions of their children's PSR with their favorite media character, as had been true of their children (Calvert & Richards, 2015; Richards & Calvert, 2014). *Humanlike needs* explained 14.44% of the variance in children's PSR, as per parent report. This item included the questions of the character having needs and wants, tapping into whether or not the child believed that the character had humanlike needs, such as hunger and thirst. When children were interviewed on their beliefs that their favorite character got hungry and sleepy (i.e., concrete wording for having needs and wants), these items also emerged as a distinct factor (see Calvert & Richards, 2015). A mean of the raw scores of these items was calculated to create a composite humanlike needs score, leading to a high internal consistency on this factor

Table 3. Factor analysis of children's reports about their PSR with favorite media characters.

Factor	Eigen-value	% of variance explained	Item	Factor Loadings			*M*	*SD*
Social Realism	1.24	13.82	Character is pretend*	−.419	−.167	**.675**	2.97	1.800
			Character is real	.217	.093	**.855**	3.10	1.810
Attachment & Friendship	2.66	29.52	Character is a friend	**.785**	−.093	−.016	4.00	1.388
			Character is trustworthy	**.577**	.225	.078	3.33	1.673
			Character makes child feel safe	**.744**	.138	−.144	3.52	1.650
			Character is cute	**.699**	.057	.038	3.29	1.701
Humanlike Needs	1.30	14.39	Character gets hungry	.364	**.608**	.201	2.95	1.736
			Character gets sleepy	.121	**.781**	−.124	2.75	1.740
			Child feels sad when character makes mistake	−.072	**.677**	−.013	2.19	1.640

*Reverse coded. Bold characters signify the highest factor loading for that survey item.

(α = .90). Children's age did not predict beliefs that their favorite character had humanlike needs, as per parent report, $p > .05$.

Comparing parent and child report

We compared parental reports about their children's PSR to their favorite media character to their own children's reports about PSR with their favorite media characters (see Calvert & Richards, 2015; Richards & Calvert, 2014). In that study, all children with a clear answer about their favorite character were included in the analyses (n = 194). When children's responses were analyzed with a factor analysis using Varimax rotation, children's reports explained 57.7% of the variance in children's PSR.

Three factors emerged from child interviews: *social realism* (explaining 13.82% of the variance), *attachment and friendship* (explaining 29.52% of the variance), and *humanlike needs* (explaining 14.39% of the variance). One of the children's questions - believing that the character had feelings - loaded poorly with the three factors (*.19*, *.26*, *.27*, on factors 1, 2, and 3, respectively), and was subsequently dropped from the analysis, consistent with guidelines for factor analysis methods (DeVellis, 2003; O'Rourke & Hatcher, 2013; Pett et al., 2003). See Table 3 for eigenvalues and factor loadings.

Variance explained across studies

To examine RQ_1, Figure 1 illustrates that across all three studies, including the original parent survey by Bond and Calvert (2014a), the questions asked of parents and children were able to explain a similar percentage of the variance in children's PSR. The original parent survey, comprised of *social realism*, *attachment*, and *character personification*, explained 59% of the variance (Bond & Calvert, 2014a). The child interview in the current survey, comprised of *social realism, attachment and friendship*, and *humanlike needs*, explained 57.7% of the variance

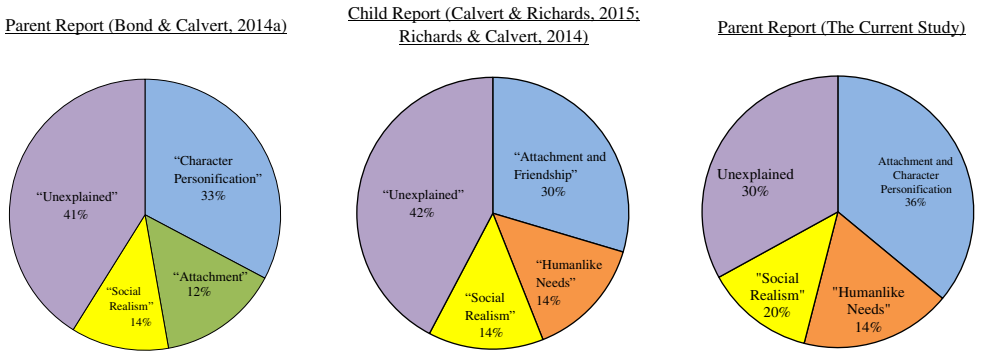

Figure 1. Components and proportion of variance accounted for in children's PSR in child vs. parent self-report.

(Calvert & Richards, 2015; Richards & Calvert, 2014). The parent survey in the current survey, comprised of *social realism, attachment and character personification*, and *humanlike needs*, explained 70% of the variance. The unexplained portion of the variance ranged between 30 and 42% in children's PSR across the three studies.

Agreement vs. disagreement on parent's and child's favorite character selections

Our final research question (RQ_2) asked if parents could accurately choose the same favorite character as the one selected by their child. Because both the child and the parent parasocial relationship measures are based on the child's favorite character, overlap in these responses is important as a validity check. Of the 107 parents and their children in the sample, only 32 matched exactly. Thus, only about 30% of parents in the final sample knew the child's favorite character. We then examined similarities and differences in parents' and their children's reports for those who did or did not match each other on who the child's favorite character was.

Parent–child matches for child's favorite character

Among the 32 parents and children whose favorite character matched exactly, 40.6% of these parent–child pairs reported princess characters such as Anna, Elsa, Belle, and Rapunzel. Other common pairs were Minnie/Mickey Mouse (9.4%) and Lightning McQueen (6.3%). Within this subset of matching parent–child pairs, parents of sons only reported male characters, and parents of daughters were significantly more likely to report a favorite female than male character (81% vs. 19%, respectively), χ^2 (1, N = 32) = 19.00, $p < .0001$. The male characters reported by parents of girls in this sample were Barney, Kwazii from Octonauts, Mickey Mouse, and Scooby Doo (all *n's* = 1). For parents who knew their child's favorite character, parents of girls were significantly more likely to rate their daughters' favorite characters as pretty or cute than parents of boys were t (30) = –3.04, p = .005, (M = 4.10, SD = 1.26 vs. M = 2.73, SD = 1.10, respectively).

Parent–child mismatches for child's favorite character

For parents who did not match with their child, yet reported a clear favorite character (n = 75), most of these mismatches (69.3%) were very different, e.g., Darth Vader (child) and Curious

George (parent) or Mickey Mouse (child) and Captain America (parent). Other parents (6.7%) chose favorite characters that were in the same program as their children's choices, e.g., Anna (child) and Elsa (parent). Still other parents (24.0%) reported a specific character, while their children gave ambiguous answers or did not provide an answer at all, e.g., Chuggington (child) and Mickey Mouse (parent).

Even though parents typically did not know their children's favorite media character, mismatching parent–child pairs gave very similar responses to the questions as the matching parent–child pairs. As was true in the data in which parent–child replies matched, gender differences were prevalent among the non-matching parents who provided specific answers about their children's favorite characters ($n = 75$). Although they did not know who their child's favorite character was, 90% of these parents of boys reported favorite male characters for their sons, and 71.4% of these parents of girls reported female characters for their daughters, yielding a distribution that was significantly different than chance, $\chi^2 (1, N = 75) = 29.70$, $p < .0001$. Common male characters that were reported by parents of boys within this subsample were Curious George ($n = 6$), Mickey Mouse ($n = 5$), Spiderman ($n = 4$), and Spongebob ($n = 3$). Popular female characters reported by parents of girls were Elsa ($n = 5$), Dora ($n = 4$), Peppa Pig ($n = 3$), and Doc McStuffins ($n = 3$). Male favorite characters reported by parents of girls included Arthur, Cookie Monster, Curious George, Diego, Mickey Mouse, and Pingu, all with *n's* = 1. Female favorite characters reported by parents of boys included Blue from *Blues Clues*, Shiny Pteranodon from *Dinosaur Train* (both *n's* = 1), and Dora from *Dora the Explorer* ($n = 2$).

Cronbach's alphas for each of the composite factors (calculated as the mean of the raw scores for the questions comprising each factor) were also consistent between the matching and non-matching parent–child pairs (α's = .78–.85 vs. α's = .75–.93, respectively). Independent samples *t*-tests revealed that there were no significant differences between matching and non-matching parent–child pairs on any of the composite scores of *social realism, character personification and attachment (parents) and attachment and friendship (their children), and humanlike needs* (all *p's* > .05). An independent samples *t*-test revealed that there were no significant difference in the age between children who matched with their parents and those that did not ($p > .05$). The mean age of children who matched with their parents was 53.59 months, and the mean age of children who did not match with their parents was 51.31 months.

Summary

Overall, our first hypothesis was partially supported. Consistent with the prior research of Bond and Calvert (2014a), *social realism, attachment,* and *character personification* emerged as components of parents' perceptions of their children's PSR with their favorite media characters. *Social realism* was a distinct factor in both children's and parents' reports. *Attachment and character personification*, however, was one factor for parents in the current study rather than two separate factors as found by Bond and Calvert (2014a). *Attachment and character personification* (parents) and *attachment and friendship* (their children) were the factors explaining the highest percentage of the variance in each sample, and included feelings of trust and safety toward the character, regardless of whether parents or children were asked about this question. Unlike their parents, children conceptualized physical attractiveness as part of *attachment and friendship*. Contrary to prediction, parent agreed with their young

children that *humanlike needs* were a separate component of PSR, which was a part of character personification as defined by Bond and Calvert (2014a). Children also put the sadness they felt for the character when he or she makes a mistake as part of humanlike needs. The amount of variance accounted for across these three studies, which includes the Bond and Calvert (2014a) study, was comparable, ranging from 58 to 70%. However, only 30% of parents and their children in the current study agreed on who the child's favorite character was.

Discussion

The purpose of this study was to compare parents' reports about their children's PSR with their favorite characters to their own children's reports. Although some projects have looked exclusively at parent report (Bond & Calvert, 2014a) and others have only looked at child report (Calvert & Richards, 2015; Hoffner, 1996; Richards & Calvert, 2014; Rosaen & Dibble, 2008; Wilson & Drogos, 2007), this research examined data from parents as well as their children, allowing us to make direct comparisons between parent–child pairs. This distinctive feature of the project afforded a unique viewpoint on how to conceptualize and measure children's PSR from within a parent–child dyad.

Our first, second, and third hypotheses stated that *social realism, attachment,* and *character personification*, respectively, would emerge as factors in the current study as they did in Bond and Calvert (2014a), as the parasocial relationship scale used in the current study was derived from that study. These hypotheses were partially supported. Our fourth hypothesis was that there would be inconsistency between parents and their children about the concrete factor of *human needs*. Contrary to prediction, parent report in the current study did yield a separate *humanlike needs* factor.

First, we consider the factor of *social realism*. The *social realism* questions emerged as a factor consistently in both studies of parent reports, as well as with child respondents. Thus, social realism is a factor that parents and children consistently considered to be an important component of PSR (Bond & Calvert, 2014a; Calvert & Richards, 2015; Richards & Calvert, 2014). Children's age was an especially potent predictor of social realism, with parents believing that younger children thought that their favorite character was more real than older children did. Parents were likely picking up on their young children's animistic beliefs, as young children "breathe life" into inanimate objects, toys, and their favorite characters (Piaget et al., 2007; Singer & Singer, 2005). Between the ages of three and five, children's ability to judge things as real or pretend improves (Sharon & Woolley, 2004), and children also get better at differentiating between fantasy and reality during play between the ages of two and six (DiLalla & Watson, 1988), paralleling our findings with our parental survey on the same ages. We then examined the social realism of each character as a function of the kind of favorite character (i.e., animated or live) by children's age, as children may select live characters as favorites more often as they grow older. However, there were no significant age differences in preferences for animated or live characters, as per child report. A caveat is that throughout early childhood, animated characters are the norm for children's programming, making it challenging to find answers to this kind of question.

Second, we consider the two separate factors of *attachment* and *character personification* that were predicted to emerge. Two key differences were found between the factors reported by Bond and Calvert (2014a) and those of the current study. The first difference involved the combination of attachment and character personification in the current study as a factor,

rather than as two distinct factors, as reported by Bond and Calvert (2014a). Similarly, the children of the parents in this study had a combined factor of attachment and friendship. As attachment develops during childhood, it extends to friendships (Park & Waters, 1989), which may explain children's slight conceptual differences from their parents on this category. Even so, there are clear consistencies in the nature of these constructs in all three studies with feelings of safety and attributes of personhood - whether they are somewhat more abstract for parents (e.g., child thinks character has thoughts and emotions) or more concrete for children (e.g., character is cute) - emerging across samples.

The other main difference in factors was that the questions comprising character personification in Bond and Calvert (2014a) split into two different factors in the current study of parents, one becoming *humanlike needs* while other questions merged with what became *attachment and character personification*. For *humanlike needs*, the current findings are consistent with a behavioral measure of PSR in which children took care of (i.e., nurtured) their plush media characters' needs by pretending to feed them and put them to sleep during their play (Calvert et al., 2014; Gola et al., 2013). This concrete behavioral approach to what comprises a child's PSR with a media character is consistent with the character being treated as humanlike and the idea of being a person (i.e., *character personification* for Bond and Calvert (2014a)).

Our first research question examined whether or not parental report would explain a similar percentage of the variance in children's PSR as child report. Parents' and children's reports on children's favorite characters both explained 58–70% of the variance. These results suggest that parent report, as well as child report, are measures that can tap into children's PSR with media characters. Moreover, this finding supports our argument that we are tapping into similar components of children's PSR with favorite characters across these three studies, even if the factors are slightly different.

Our final research question investigated if parents would report the same favorite character as their child. Only 30% of parents matched with their child exactly on the child's favorite character. Although this study revealed a large proportion of mismatch in reported favorite characters, this phenomenon is not uncommon (Truglio, 2014).

A number of possible explanations could account for this mismatch. One is that children may have outgrown their character, or decided it was no longer their favorite, a phenomenon known as *parasocial breakup* (Bond & Calvert, 2014b). It may take parents a while to learn that their child "broke up" with the character. However, parents of younger children, who have had less time to break up with characters than older children, did not agree with their child's selection of a favorite character any more than parents of older children did; a caveat is that the sample was predominantly preschoolers so the age distribution was somewhat limited. Another reason for mismatch may be that parental reports are affected by which character the parent prefers for their child (i.e., social desirability), which may be different than who the child actually considers their favorite. In addition, parents do not spend a large amount of time with their children during media use. Among 0–8-year olds, for instance, only 31% of parents co-view television all or most of the time with their children (Wartella, Rideout, Lauricella, & Connell, 2013). Therefore, parents may not be aware of all the characters the child encounters through media and forms PSR with, or how much they like certain characters. It could also be that some children have stronger PSR with their favorite characters than others do, making them more visible to their parents if they ask for toy related products. Finally, it is possible that children form PSR with many characters

instead of there being "just one" favorite character, making it difficult for parents to keep track of, and report accurately on, their child's "favorite." That children may have more than one strong parasocial relationship is consistent with our findings of similar underlying factors and variance accounted for in children's PSR, regardless of an exact match between parents and their children's favorite character.

Although children's favorite characters were typically different when reported by children and their parents, the patterns that emerged in analyzing the data about these "favorite characters" were similar. In the current study, for instance, both matching and mismatching parent–child pairs demonstrated clear gender differences in the character who was reported. In particular, parents were overwhelmingly more likely to report that their sons had favorite male characters and their daughters had favorite female characters. This gender difference is consistent with younger and older children's report of their favorite characters (Calvert, Kotler, Zehnder, & Shockey, 2003; Calvert & Richards, 2015; Hoffner, 1996; Reeves & Greenberg, 1977; Richards & Calvert, 2014).

Regardless of the reasons for mismatch, our results bring up a validity issue for studies that rely exclusively on parental reports of children's PSR because we assume that parents know the child's favorite character. Future research could examine various alternatives for these mismatches, including the possibility that children have multiple PSR with different media characters.

One limitation of this study is that we were restricted in making direct comparisons between the current parent survey and Bond and Calvert's (2014a) results because the earlier survey was much longer, and young children could not have answered all of the questions. Future research should replicate the earlier findings of Bond and Calvert (2014a). More research should also examine if these parasocial relationship scales can be used with parents and children who are reporting on a character who is not necessarily the child's favorite. Based on the data from parents who were inaccurate about their children's favorite character, it seems likely that at least the composition of PSR is similar for both matching and non-matching parent–child dyads. If this scale is an effective measure for non-favorite characters, particularly for child report, it can be used to assess the impact of media characters who are of interest in a variety of other studies. Finally, future projects could examine why parents and children mismatched so frequently on the favorite character reported, and what factors contribute to why certain parents and children *do* match each other. Perhaps future surveys given to parents could already have stated the child's favorite character, as per child report, imputed into it as a way to gauge parents' feelings about the child's favorite character.

So who should we ask about a child's favorite character? We think that gathering information from both parents and their children is the best methodological approach, if possible. While we think that children probably know which character they like best, the parent has a more comprehensive view of this relationship-building process, which can yield important insights into these early PSR. Moreover, both children and their parents agree in essence on what comprises a parasocial relationship, providing some evidence for the face validity of the construct.

In conclusion, the emotional relationships that children form with their favorite characters are an important outgrowth of their social, emotional, and cognitive development that researchers are just beginning to understand. Parents may not know why their children cling to their Elmo doll or watch the movie *Frozen* repeatedly, yet they know that their children love these characters, are drawn to them, and request to be with them each day. The current

study adds to the existing body of knowledge on children's PSR as a multi-dimensional construct through both child and parent reports. Delving into this uncharted area can lead us one step closer to understanding and quantifying the engaging relationships that even the youngest of our current cohort of children form with their favorite characters.

Notes

1. Spanish-speaking children were given the option to complete the survey in Spanish, and 18 did so.
2. Spanish-speaking parents were also given the option to fill out the survey in Spanish, and seven did so.

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References

Bond, B. J., & Calvert, S. L. (2014a). A model and measure of US parents' perceptions of young children's parasocial relationships. *Journal of Children and Media, 8*, 286–304. doi:10.1080/17482798.2014.890948

Bond, B. J., & Calvert, S. L. (2014b). Parasocial breakup among young children in the United States. *Journal of Children and Media, 8*, 474–490. doi:10.1080/17482798.2014.953559

Bowlby, J. (1969). *Attachment and loss*. New York, NY: Basic Books.

Calvert, S. L. (2015). Children and digital media. In M. Bornstein & T. Leventhal (Vol. Ed.), *Ecological settings and processes in developmental systems* (pp. 375–415). In R. Lerner (Ed.), *Handbook of Child Psychology and Developmental Science* (7th ed.), Hoboken, NJ: Wiley.

Calvert, S. L., Kotler, J. A., Zehnder, S., & Shockey, E. (2003). Gender stereotyping in children's reports about educational and informational television programs. *Media Psychology, 5*, 139–162. doi:10.1207/S1532785XMEP0502_2

Calvert, S. L., & Richards, M. N. (2014). Children's parasocial relationships with media characters. In J. Bossert (Oxford Ed.), A. Jordan & D. Romer (Eds.), *Media and the well being of children and adolescents* (pp. 187–200). Oxford: Oxford University Press.

Calvert, S. L., & Richards, M. N. (2015, May). *Parent* versus *child report of young children's parasocial relationships*. Poster presented at Association for Psychological Science Annual Conference, New York, NY.

Calvert, S. L., Richards, M. N., & Kent, C. C. (2014). Personalized interactive characters for toddlers' learning of seriation from a video presentation. *Journal of Applied Developmental Psychology, 35*, 148–155. doi:10.1016/j.appdev.2014.03.004

Cole, T., & Leets, L. (1999). Attachment styles and intimate television viewing: Insecurely forming relationships in a parasocial way. *Journal of Social & Personal Relationships, 16*, 495–511. doi:10.1177/0265407599164005

Common Sense Media. (2013). *Zero to eight: Children's media use in America 2013*. San Francisco, CA: Author.

DeVellis, R. (2003). *Scale development: Theory and applications*. London: Sage.

DiLalla, L. F., & Watson, M. W. (1988). Differentiation of fantasy and reality: Preschoolers' reactions to interruptions in their play. *Developmental Psychology, 24*, 286–291. doi:10.1037/0012-1649.24.2.286

Eyal, K., & Rubin, A. M. (2003). Viewer aggression and homophily, identification, and parasocial relationships with television characters. *Journal of Broadcasting and Electronic Media, 47*, 77–98. doi:10.1207/s15506878jobem4701_5

Giles, D. C. (2002). Parasocial interaction: A review of the literature and a model for future research. *Media Psychology, 4*, 279–305. doi:10.1207/S1532785XMEP0403_04

Gola, A. A. H., Richards, M. N., Lauricella, A. R., & Calvert, S. L. (2013). Building meaningful parasocial relationships between toddlers and media characters to teach early mathematical skills. *Media Psychology, 16*, 1–22. doi:10.1080/15213269.2013.783774

Hoffner, C. (1996). Children's wishful identification and parasocial interaction with favorite television characters. *Journal of Broadcasting & Electronic Media, 40*, 389–402. doi:10.1080/08838159609364360

Hoffner, C. (2008). Parasocial and online social relationships. In S. L. Calvert & B. J. Wilson (Eds.), *The handbook of children, media, and development* (pp. 309–333). Boston, MA: Wiley-Blackwell.

Horton, D., & Wohl, R. R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *Psychiatry, 19*, 215–229.

Houlberg, R. (1984). Local television news audience and the para-social interaction. *Journal of Broadcasting, 28*, 423–429. doi:10.1080/08838158409386551

Kassing, J. W., & Sanderson, J. (2009). You're the kind of guy that we all want for a drinking buddy: Expressions of Parasocial Interaction on Floydlandis.com. *Western Journal of Communication, 73*, 182–203. doi:10.1080/10570310902856063

Krcmar, M. (2010). Can social meaningfulness and repeat exposure help infants and toddlers overcome the video deficit? *Media Psychology, 13*, 31–53. doi:10.1080/15213260903562917

Lauricella, A. R., Gola, A. H., & Calvert, S. L. (2011). Toddlers' learning from socially meaningful video characters. *Media Psychology, 14*, 216–232. doi:10.1080/15213269.2011.573465

Meyer, T. (1973). Children's perceptions of favorite television characters as behavioral models. *Educational Broadcasting Review, 7*, 25–33.
O'Doherty, K., Troseth, G. L., Shimpi, P. M., Goldenberg, E., Akhtar, N., & Saylor, M. M. (2011). Third-party social interaction and word learning from video. *Child Development, 82*, 902–915. doi:10.1111/j.1467-8624.2011.01579.x
O'Rourke, N., & Hatcher, L. (2013). *A step-by-step approach to using SAS for factor analysis and structural equation modeling* (2nd ed.). Cary, NC: SAS Institute Press.
Park, K. A., & Waters, E. (1989). Security of attachment and preschool friendships. *Child Development, 60*, 1076–1081. doi:10.2307/1130781
Perse, E. M., & Rubin, R. B. (1989). Attribution in social and parasocial relationships. *Communication Research, 16*, 59–77. doi:10.1177/009365089016001003
Pett, M. A., Lackey, N. R., & Sullivan, J. J. (2003). *Making sense of factor analysis*. Thousand Oaks, CA: Sage. doi:10.4135/9781412984898
Piaget, J., Tomilson, J., & Tomilson, A. (2007). *The child's conception of the world: A 20th century classis of child psychology*. Lanham, MD: Rowman & Littlefield.
Reeves, B., & Greenberg, B. S. (1977). Children's perceptions of television characters. *Human Communication Research, 3*, 113–127. doi:10.1111/j.1468-2958.1977.tb00510.x
Richards, M. N., & Calvert, S. L. (2014, August). *Measuring young children's parasocial relationships with media characters.* Poster presented at American Psychological Association Annual Conference, Washington, DC.
Richert, R. A., Robb, M. B., & Smith, E. I. (2011). Media as social partners: The social nature of young children's learning from screen media. *Child Development, 82*, 82–95. doi:10.1111/j.1467-8624.2010.01542.x
Rosaen, S. F., & Dibble, J. L. (2008). Investigating the relationships among child's age, parasocial interactions, and the social realism of favorite television characters. *Communication Research Reports, 25*, 145–154. doi:10.1080/08824090802021806
Rubin, R. B., & McHugh, M. P. (1987). Development of parasocial interaction relationships. *Journal of Broadcasting & Electronic Media, 31*, 279–292. doi:10.1080/08838158709386664
Schramm, H., & Hartmann, T. (2008). The PSI-process scales. A new measure to assess the intensity and breadth of parasocial processes. *Communications: The European Journal of Communication Research, 33*, 385–401. doi:10.1515/COMM.2008.025
Sharon, T., & Woolley, J. D. (2004). Do monsters dream? Young children's understanding of the fantasy/reality distinction. *British Journal of Developmental Psychology, 22*, 293–310. doi:10.1348/026151004323044627
Singer, D. G., & Singer, J. L. (2005). *Imagination and play in the electronic age*. Cambridge: Harvard University Press.
Tabachnick, B. G., & Fidell, L. S. (2014). *Using multivariate statistics* (6th ed.). Boston, MA: Pearson.
Theunissen, N. C. M., Vogels, T. G. C., Koopman, H. M., Verrips, G. H. W., Zwinderman, K. A. H., Verloove-Vanhorick, S. P., & Wit, J. M. (1998). The proxy problem: Child report versus parent report in health-related quality of life research. *Quality of Life Research, 7*, 387–397. doi:10.1023/A:1008801802877
Truglio, R. (2014, May). *Personal communication during discussion at the National Science Foundation Collaborative Research Workshop*, Grant # DRL-1252146, Using Educational DVDs to Enhance Preschoolers' STEM Education: Developing Intelligent Agents for Early STEM Learning, Evanston, IL.
Wartella, E., Rideout, V., Lauricella, A., & Connell, S. (2013). *Parenting in the age of digital technology*. Report for the Center on Media and Human Development School of Communication Northwestern University, Evanston, IL.
Wellman, H. M., & Hickling, A. K. (1994). The mind's "I": Children's conceptions of the mind as an active agent. *Child Development, 65*, 1564–1580. doi:10.1111/j.1467-8624.1994.tb00836.x
Wilson, B. J., & Drogos, K. L. (2007, November). *Preschoolers' attraction to media characters.* Paper presented at the annual meeting of the National Communication Association. Chicago, IL.
Wright, J. C., Huston, A. C., Reitz, S., & Piemyat, S. (1994). Young children's perceptions of television reality: Determinants and developmental differences. *Developmental Psychology, 30*, 229–239. doi:10.1037/0012-1649.30.2.229