# Measuring young U.S. children's parasocial relationships: toward the creation of a child self-report survey

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# Measuring young U.S. children's parasocial relationships: toward the creation of a child self-report survey

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**ABSTRACT**

Adults and children form one-sided, emotionally tinged relationships with media characters known as *parasocial relationships*. Studies have measured adult conceptions of their own parasocial relationships and parent perceptions of their children's parasocial relationships, but little is known about how to quantify young children's perceptions of their own parasocial relationships. In this study, a child self-report survey was developed based on prior parental surveys and behavioral measures to operationalize children's parasocial relationships. Results revealed that 2–6 year-old U.S. children can name and report about their favorite media characters, who were the target for assessing parasocial relationships. Factor analyses indicated three components of children's parasocial relationships: *attachment and friendship*, *humanlike needs,* and *social realism*. Although the internal consistency improved with age on *attachment and friendship* and *social realism*, only the *attachment and friendship* subscale reached conventional acceptable levels of internal consistency. This study provides a new method for operationalizing children's parasocial relationships through child interview and describes future research directions for improving the internal consistency of the child subscales.

Children's daily lives are saturated with media use, with U.S. children between the ages of 0–8 using screens approximately 2 h each day (Common Sense Media, 2013). Young viewers are undoubtedly drawn to the storylines and plots of these programs, but also to the complex and intriguing characters that are featured. Audiences, including children, often form *parasocial relationships* with onscreen figures, which are defined as the emotionally tinged, one-sided relationships individuals establish with onscreen characters (Horton & Wohl, 1956). Parasocial relationships have important implications for early learning and social development. Just as favorite teachers in classrooms create more interest in learning, so too do parasocial relationships with media characters result in better learning of onscreen content (Calvert, Richards, & Kent, 2014; Gola, Richards, Lauricella, & Calvert, 2013).

Parasocial relationships are not studied as frequently in children as they are with adults (Bond & Calvert, 2014), in part because of measurement issues. Parent measures of their children's parasocial relationship are one approach to resolve this issue (e.g., Bond & Calvert,

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2014; Richards & Calvert, 2016). Another approach, which is the focus of the current study, is the creation of a child survey of children's parasocial relationships. This child survey was adapted from an online parent survey to measure U.S. parents' perceptions of their children's parasocial relationships with their *favorite* media characters (Bond & Calvert, 2014).

The extant literature based on U.S. parent assessments found that young children's parasocial relationships are multidimensional in nature, and that young children generally prefer characters that are the same gender as them (Bond & Calvert, 2014; Richards & Calvert, 2016). The parasocial relationships of young children, as reported by U.S. parents, involve the factors of attachment, character personification, and social realism (Bond & Calvert, 2014), or attachment and character personification, social realism, and humanlike needs (Richards & Calvert, 2016). In addition, prior research demonstrates that the factor structure of U.S. children's parasocial relationships – specifically attachment and friendship, social realism, and humanlike needs – were consistent with those reported by their parents (Richards & Calvert, 2016). Questions remain, however, about how well children can answer parasocial relationship questions themselves.

Even within a relatively young age group, developmental differences may emerge in children's parasocial relationships. One issue involves how well young children can answer a verbal scale, as young children's verbal skills improve with age (MacWhinney, 2015), conceivably making their responses to questions more reliable at older ages. Second, the characteristics of relationships that matter the most may vary with children's development, as indexed by their age.

Particularly before the age of two, mother–infant attachments are a crucial aspect of development (Ainsworth, Blehar, Waters, & Wall, 1978). By early childhood, attachment emerges as a key component of children's emerging friendships (Park & Waters, 1989), and hence, may also be an important aspect of how attachments manifest themselves in young children's parasocial relationships with media characters. In early childhood, physical attractiveness is also associated with friendship formation (Dion, 1973). Attractiveness is also a component of an adult measure of parasocial interaction (Rubin, Perse, & Powell, 1985).[1] Finally, children's early friendships are typically the same sex as the child (Huston, 1983).

Social realism, or viewing the characters as existing in the real world (Wright, Huston, Reitz, & Piemyat, 1994), is a component of parasocial relationships that may be important to consider with young children, given their dynamic imaginations (e.g., Singer & Singer, 2005). Just as children may consider their imaginary friends to be real (Singer & Singer, 2005), children may also regard their favorite characters as real (Calvert & Richards, 2014). Imaginative play, in which the bounds of reality are stretched, emerges around toddlerhood and peaks around age 4 (Lillard, 2015), with declines by about age 7 (Singer & Singer, 2005). Thus, the peak of social realism and of treating characters as real during play may occur around age 4, with declines thereafter. With age, children also get much better in determining what is real or realistic from what is pretend (Wright et al., 1994), which may impact their parasocial relationships with media characters. For instance, children who rated their favorite characters as more realistic (e.g., looking like a person) had higher parasocial relationship scores with that character (Rosaen & Dibble, 2008).

Humanlike needs are a third component of children's parasocial relationships (Richards & Calvert, 2016). Putting characters to sleep and thinking that characters get hungry are characteristic of young children's play patterns, and are an early indicator of toddlers' parasocial relationships (Calvert et al., 2014; Gola et al., 2013).

## The current study

Our goal was to create a child parasocial relationship verbal measure, adapted from a parent parasocial relationship measure (Bond & Calvert, 2014). We interviewed young U.S. children (ages 2–6) using a shortened Likert-scale survey that was designed to be easy for children to understand. Due to the exploratory and descriptive nature of this research, we proposed four research questions that were germane to construction of this measure.

$RQ_1$: Are young children able to name a favorite media character?

$RQ_2$: If children can name a favorite character, do their character preferences differ by children's gender?

$RQ_3$: Can young children reliably report on a favorite character using a shortened, simplified version of the child parasocial relationship measure scale?

$RQ_4$: Does the reliability of children's responses on the parasocial relationship subscales change with age?

## Method

### Participants

Researchers visited children (original $n = 247$; 18 dropped) in preschools and childcare centers in the Washington, D.C., metropolitan area. The final sample of 2–6-year-old children ($n = 229$; 105 boys, 124 girls; $M$ age = 50.66 months, $SD$ = 10.31 months) was 41.5% Caucasian, 16.6% Hispanic/Latino, 7.9% African-American, 4.8% Asian, 11.4% of other/mixed ethnicities, with 17.9% of the parents not reporting their children's race/ethnicity.

### Child survey measure of parasocial relationships

The wording of the questions in the original parent parasocial relationship measure was simplified to create the child measure, yielding a five-point Likert scale with pictorial responses of feelings that assessed attachment, social realism, and character personification. The questions began by asking the child's favorite character and then measured the extent to which each child perceived that favorite character as: (1) their friend; (2) believable (i.e., trustworthy); (3) made them feel safe when they were scared; (4) real; (5) cute; (6) potentially hungry; (7) potentially sleepy; (8) pretend; (9) having feelings; and (10) making the child feel sad for the character when the character made a mistake. See Table 1. A yellow smiley face pictorial scale shown in Figure 1 was used for all response options, except for the question that asked children if they felt sad when their favorite character made mistakes, which employed a blue sad face scale.

### Procedure

A researcher individually administered the Child Parasocial Relationship Survey (CPRS) to each child in a quiet space at their preschool or childcare center. [2] First, the child was asked who their favorite character was. Next, the child was asked to answer questions about that character. The researcher said, "Now we're going to talk about [character]," and inserted the favorite character's name, such as Elmo, into each question. For example, the researcher

**Table 1.** U.S. children's self-report scale response options.

| Question | Response options | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| Do you believe what [character] tells you … | All of the time | A lot of the time | Sometimes | A little bit of the time | Not at all |
| Is [character] … | Your best friend | Your good friend | Kind of a friend | A little bit of a friend | Not your friend at all |
| How safe does [character] make you feel when you are scared? | Really safe | Safe | Kind of safe | A little bit safe | Not safe at all |
| Is [character] … | Really cute | Cute | Kind of cute | A little bit cute | Not cute at all |
| Is [character] … | Totally pretend | Mostly pretend | Kind of pretend | Mostly real | Totally real |
| Is [character] … | Totally real | Mostly real | Kind of pretend | Mostly pretend | Totally pretend |
| Does [character] get … | Really hungry | Hungry | Kind of hungry | A little bit hungry | Not hungry at all |
| Does [character] get … | Really sleepy | Sleepy | Kind of sleepy | A little bit sleepy | Not sleepy at all |
| How do you feel when [character] makes a mistake? | Really sad | Sad | Kind of sad | A little bit sad | Not sad at all |
| Does [character] have …* | A whole lot of feelings | A lot of feelings | Kind of has feelings | A little bit of feelings | No feelings at all |

*This question did not load on one specific factor in the analyses and was then dropped from the child measure and the results.

Yellow Smiley Face Scale
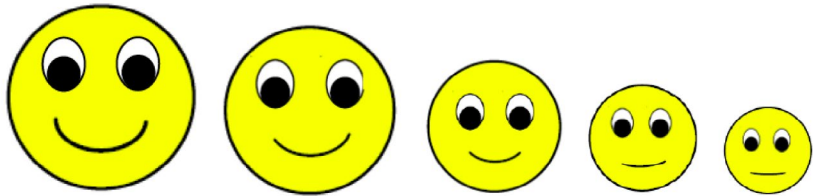


Blue Sad Face Scale
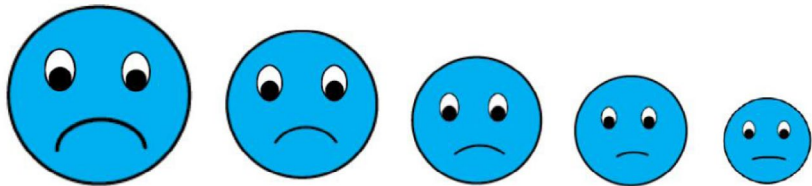


**Figure 1.** Likert scale smiley face depictions.

would ask questions such as "Is [Elmo] … your best friend, your good friend, kind of a friend, a little bit of a friend, or not your friend at all?" Each question and the potential responses were read to the child while the researcher pointed to the corresponding smiley face, with the largest smiley face indicating a larger quantity. The child responded by pointing to a face or saying a response. It took children approximately ten minutes to finish the survey.

## Results

### *Naming favorite characters*

RQ$_1$ asked if young children could produce the name of a favorite media character, which was the basis of the child survey. The answer was generally yes. Analyses revealed that 194 (84.7%) of young children who participated in the study reported a favorite character (88 boys, 106 girls; $M = 51.50$ months, $SD = 9.35$ months). The remaining 35 (15.3%) children had ambiguous responses, such as "shark," "teddy bear," and "captain" (17 boys, 18 girls; $M = 46.0$ months, $SD = 13.8$ months). Older children provided the name of a specific favorite character more often than younger children did, $t(39) = 2.26$, $p = .03$. The most frequently reported characters were Dora the Explorer (9.8%), Mickey/Minnie Mouse (5.6%), Lightning McQueen (4.6%), Cinderella (4.6%), Elmo (4.1%), Elsa (4.1%), Thomas the Tank Engine (3.1%), Spiderman (3.1%), and Spongebob Squarepants (3.1%).

### *Gender differences in favorite character choices*

RQ$_2$ asked if children who could name a favorite character differed in their preferences by gender. Overall, the answer was yes. Girls named a favorite female more often than a male character (73.6 vs. 26.4%, respectively), and boys named a favorite male more often than a female character (94.3 vs. 5.7%, respectively), $\chi^2 (1, N = 194) = 90.57$, $p < .0001$. Girls ($M = 3.61$, $SD = 1.50$) were also more likely to rate their character as cute than boys were ($M = 2.91$, $SD = 1.85$), $t(167) = -2.87$, $p = .005$.

Boys' favorite characters were Lightning McQueen ($n = 8$), Thomas the Tank Engine ($n = 6$), or Spiderman ($n = 6$), while only one girl reported one of these male characters as her favorite (Lightning McQueen). By contrast, girls' favorite characters were Dora the Explorer ($n = 16$), Cinderella ($n = 9$), Elsa, ($n = 8$), Rapunzel ($n = 4$), Tinkerbell ($n = 3$), and other Disney Princesses like Sophia the First, Snow White, and Sleeping Beauty, while only three boys chose one of these girl characters (Dora the Explorer). Spongebob and Elmo transcended gender boundaries with both boys ($n = 3$ for Spongebob, $n = 3$ for Elmo) and girls ($n = 3$ for Spongebob, $n = 5$ for Elmo) reporting these characters as their favorites.

### *Factor analyses of U.S. children's parasocial relationship reports using the full sample*

Based on prior surveys of U.S. parents' reports about their children's parasocial relationships with favorite characters (Bond & Calvert, 2014; Richards & Calvert, 2016), a principal component factor analysis was performed on responses to the 10 questions in the child scale using Varimax rotation. Three factors – *attachment and friendship*, *social realism*, and *humanlike needs* – emerged with eigenvalues that were greater than 1.0, with one item dropped due to poor loading on any of these factors. See Richards and Calvert (2016) for details.

RQ$_3$ asked if young children could reliably report on a favorite character using the child parasocial relationship measure scale. We used Cronbach's alpha to measure the internal consistency of each subscale with an alpha of .70 as a cut-off for an acceptable level. Using Cronbach's alpha, the internal consistency of the items was acceptable at a borderline level for only one of the three child subscales, which was the attachment and friendship subscale ($\alpha = .69$; see Table 1). RQ$_{3,}$ then, only received partial support.

**Table 2.** Factor analysis of U.S. children's parasocial relationships via child self-report, separated by age subsample.

| Factor | Item | 2–6 year olds n = 194 | | 4–6 year olds n = 124 | | 4.5–6 year olds n = 84 | |
|---|---|---|---|---|---|---|---|
| | | M (SD) | Details | M (SD) | Details | M (SD) | Details |
| Attachment and friendship | Character is trustworthy | 3.33 (1.67) | Eigenvalue: 2.66 | 3.37 (1.65) | Eigenvalue: 2.62 | 3.22 (1.64) | Eigenvalue: 2.71 |
| | Character is a friend | 4.00 (1.39) | α**: 0.69 | 4.21 (1.26) | α: 0.70 | 4.06 (1.33) | α: 0.72 |
| | Character makes child feel safe | 3.52 (1.65) | % of variance explained: 29.52 | 3.58 (1.66) | % of variance explained: 32.79 | 3.36 (1.68) | % of variance explained: 33.90 |
| | Character is cute | 3.29 (1.70) | | 3.22 (1.74) | | 3.13 (1.71) | |
| Social realism | Character is pretend* | 2.97 (1.80) | Eigenvalue: 1.24 | 2.91 (1.83) | Eigenvalue: 1.13 | 3.00 (1.82) | Eigenvalue: 1.40 |
| | Character is real | 3.10 (1.81) | α: 0.35 | 3.13 (1.83) | α: 0.41 | 3.29 (1.81) | α: 0.64 |
| | | | % of variance explained: 13.82 | | % of variance explained: 14.18 | | % of variance explained: 17.46 |
| Humanlike needs | Character gets hungry | 2.95 (1.74) | Eigenvalue: 1.30 | 2.89 (1.72) | Eigenvalue: 1.30 | 2.86 (1.68) | Eigenvalue: 1.18 |
| | Character gets sleepy | 2.75 (1.74) | α: 0.52 | 2.65 (1.73) | α: 0.54 | 2.38 (1.62) | α: 0.51 |
| | | | % of variance explained: 14.40 | | % of variance explained: 16.19 | | % of variance explained: 14.72 |
| | Child feels sad when character makes mistake | 2.19 (1.64) | | n/a | | n/a | |
| | Total % variance explained by age group: | | 57.73 | | 63.15 | | 66.07 |

*Reverse coded.
**Note that α = Cronbach's alpha.

### Factor analyses of U.S. children's parasocial relationship reports by age

Because a verbal parasocial relationship scale may have been too difficult for the youngest children, we reran the factor analysis, breaking the sample into two groups: children who were at least age 4 ($n = 124$), and children who were at least age 4.5 ($n = 84$) to answer RQ$_4$. As seen in Table 2, the older children were, the higher the internal consistency was for the attachment and friendship subscale ($\alpha = .69$ for the full sample; .70 for ages 4–6; and .72 for ages 4.5–6). The internal consistency of the social realism subscale also improved with age ($\alpha = .35$ for the full sample; .41 for ages 4–6; and .64 for ages 4.5–6), though it still fell in the unacceptable range. The internal consistency of the humanlike needs subscale did not improve with age and was unacceptable ($\alpha = .52$ for the full sample; .54 for ages 4–6; and .51 for ages 4.5–6).

Due to the lack of internal consistency in some subscales, we also analyzed each question in the child parasocial relationship measure individually. Linear regression analyses revealed that the older the child, the more they believed that the character was their friend, $\beta = .185$, $t(188) = 2.59$, $p = .01$, explaining a significant proportion of the variance, $R^2 = .034$, $F(1, 188) = 6.69$, $p = .01$. Linear regression analyses also revealed that older children did not get as sad when the character made a mistake as younger children did, $\beta = -.173$, $t(189) = -2.42$, $p = .02$, again explaining a significant proportion of the variance, $R^2 = .030$, $F(1, 189) = 5.87$, $p = .02$. Finally, the relationship between age and believing the character got sleepy yielded a curvilinear, inverse U shape, with children around the mean age of the group (approximately age 4) peaking in the feeling that the character got sleepy, as revealed with a quadratic curvilinear regression, $\beta^2 = -1.59$, $t(191) = -2.69$, $p = .008$, explaining a significant proportion in the variance, $R^2 = .058$, $F(1, 191) = 5.84$, $p = .008$.

## Discussion

The purpose of this study was to create a verbal child survey measure of children's parasocial relationships that was based on children's responses about their favorite media characters. To create that measure, we asked if 2–6-year-old U.S. children could name a favorite character (who would be the target of the survey questions), if that favorite character varied by the gender of children, and if children's answers in the resulting factors were internally consistent, depending on their age.

### Naming favorite characters: age and gender differences

Our first task for constructing a child parasocial relationship measure was to establish that young children could report their favorite character. Approximately 85% of 2–6-year-old U.S. children named a favorite character, with older children naming a favorite character more so than younger children.

Consistent with prior research, boys typically chose male favorite characters and girls typically chose female favorite characters (Calvert, Kotler, Zehnder, & Shockey, 2003). Girls were also more likely to believe that their favorite character was cute, consistent with the literature that physical attractiveness is a component of adults' parasocial interactions (Rubin et al., 1985). By contrast, one boy elaborated on his belief that Batman was not cute "because he is big and strong!" These findings are consistent with U.S. cultural values of strength for males (Luciano, 2002) and physical attractiveness for girls (Huston, 1983).

### Components of U.S. children's parasocial relationships

Like U.S. adults' conceptualizations about the importance of *attachment* in their children's perceptions of favorite characters (Bond & Calvert, 2014; Richards & Calvert, 2016), U.S. children's reports of their own parasocial relationships involved *attachment and friendship*, including qualities of trustworthiness (Richards & Calvert, 2016). Children have been shown to link attractiveness to trustworthiness (Bascandziev & Harris, 2014), which may be one reason that cuteness emerged in the same factor as trust in our child report. Cuteness is also a facet of early friendships, with children preferring physically attractive children as potential friends (Dion, 1973). These results suggest a general consistency in the importance of attachment when describing children's early parasocial relationships, as well as consistent gender differences in the value of certain character attributes, such as physical attractiveness.

Consistent with findings that attachment moves into friendship relationships as children age (Park & Waters, 1989), our findings indicated that friendship and attachment was one factor for the parasocial relationships of our children with their favorite media characters (Richards & Calvert, 2016). We also found that the older the children were, the more internally consistent the attachment and friendship subscale was. Older children were also more likely to view the character as a friend than younger children were, consistent with literature suggesting the importance of friendship during the preschool years, as children begin to seek out play partners and engage in more complex social interactions around age 5 (Rubin, Watson, & Jambor, 1978). Our attachment and friendship subscale, then, has promise as a verbal measure of young children's parasocial relationships, particularly after age 4.

The understanding of *social realism* is emerging during early childhood in which children often attribute animism (i.e., life-like qualities) to inanimate objects prior to age 7 (Singer & Singer, 2005). Indeed, children in our study were somewhat confused by questions involving social realism, with about half of them believing that the character was pretend and the other half believing that the character was real. Perhaps this confusion over what is real and what is pretend is partly the result of real-life encounters that children have with these characters at theme parks and live shows, which may blur their perceptions about the lines between the fantasy and reality status of their favorite characters. The latter interpretation is supported by young children's selections of favorite characters, such as Mickey/Minnie Mouse and the Disney Princesses, who are often embodied at the popular theme parks Disneyland and Disney World where many children and their families visit. Or perhaps children selected animated characters as their favorites and did not fully understand the difference between acting in a realistic way vs. being real (Wright et al., 1994). For instance, Cinderella is an animated character, but she represents a human woman who could potentially exist in real life, whereas Spongebob is an animated, talking sponge who lives at the bottom of the ocean and may be less likely to be perceived as being real, though he is realistic in many of his actions (e.g., going on adventures with his friend).

Although the belief that the character was real or pretend did not change with age, the internal consistency of the social realism subscale did increase with age and was close to acceptable levels for the oldest age group. Specifically, the full sample of 2–6 year-old children's scores yielded an alpha level of .35 for social realism whereas the 4.5–6 year-old children's scores yielded an alpha level of .64, just shy of the .70 acceptable level. Future research should examine the unique ways in which children encounter characters, how realistic the character is to them, and the subsequent impact on their parasocial relationship formation, particularly their beliefs about social realism as they move into concrete operational thought.

Humanlike needs, the third factor that emerged for U.S. children and their parents (Richards & Calvert, 2016), were unique from the earlier parent survey of children's parasocial relationships (Bond & Calvert, 2014). These humanlike needs included beliefs that the character ate and slept, as well as feeling emotions like sadness for the character when mistakes were made (Richards & Calvert, 2016). Age did not improve the internal consistency of the humanlike needs subscale in our child sample. However, a previous behavioral parasocial relationship measure of toddlers found that feeding the character and putting the character to sleep defined early parasocial relationships (Calvert et al., 2014; Gola et al., 2013), and the parent measure of the current sample of children yielded acceptable levels of internal consistency for the items in the humanlike needs subscale (Richards & Calvert, 2016). One marker of humanlike needs, feeling sad when the character made a mistake, was most important for younger children in our sample. There was also a curvilinear relation between age and believing that the character experienced the humanlike need of getting sleepy, with the peak in this belief coming at age four when imaginative play is generally at its highest level (Lillard, 2015). Humanlike needs are one component of parasocial relationships that is in need of further research.

### Reliability issues and future research directions

Data about the internal consistency of our child parasocial relationship measure were mixed, with positive results for the attachment and friendship subscale, and negative results for the social realism and humanlike needs subscales. Internal consistency improved for the attachment and friendship and social realism subscales as children aged, indicating that additional research with larger, somewhat older child samples could be useful.

Cronbach's alpha is very sensitive to the number of questions (Tavakol & Dennick, 2011), so expanding the number of questions drawn from the adult parasocial relationship measure could improve the reliability of the social realism and humanlike needs subscales. Adding more items has to be balanced with asking children to answer questions without taxing their attention spans or their skills at understanding abstract concepts, which some of the remaining adult questions are.

Another possible direction to improve the internal consistency of the child parasocial relationship measure is to initially ask a three-point Likert scale rather than a five-point scale, as five response options might be too many for the youngest children to answer at once. Harter (1982), for instance, had children initially select responses on a two-point scale. Based on the child's response, they would move up or down the scale to make it a four-point response. For instance, if a child answered a three-response option on our scale such as, "Is [the character] your good friend, kind of a friend, or not your friend at all" as a "good friend", the experimenter would then ask, "Is [the character] your good friend or your best friend?"

Conducting the child parasocial relationship measure along with a parent measure is another potential solution for a reliable assessment for very young children (see Richards & Calvert, 2016). U.S. children, as demonstrated here, can name their favorite character. If researchers imputed the child's selection of favorite character into a parent measure, the internal consistency scores might be stronger than those of the child alone, as indicated by high prior internal consistency measures of parents on comparable measures (Bond & Calvert, 2014; Richards & Calvert, 2016).

## Conclusion

In conclusion, the child parasocial relationship measure is promising, as the factors that emerge are consistent with those of their own parents (Richards & Calvert, 2016) and of those found in an earlier study of parents (Bond & Calvert, 2014). The attachment and friendship dimension of 2–6 year-old children's parasocial relationships can be measured reliably with a verbal child report, and is particularly useful for those who are at least age 4. Although still not in the acceptable range, the internal consistency of the social realism factor of parasocial relationships improves for children as they age, just as their general understanding of social realism improves. The humanlike needs factor has been validated through behavioral research, in which toddlers' emotional parasocial relationships was measured as feeding a character and putting the character down for a nap during play (Calvert et al., 2014; Gola et al., 2013), but the internal consistency of the items comprising that factor was not strong for our verbal parasocial relationship measure. Overall, our findings revealed that U.S. children's early relationships extend beyond real people to those that exist primarily in a digital world, with this child survey marking a first step toward building a new measure that can tap into the twenty-first century media friends that are a relatively uncharted source for understanding early cognitive and social development.

## Notes

1. Parasocial interactions as defined by Rubin et al. (1985) are consistent with more recent definitions of parasocial relationships (see Bond & Calvert, 2014).
2. Eighteen children elected to complete the survey interview in Spanish.

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## Disclosure statement

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## Notes on contributors

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