Gender Differences In Children's Responses To Attachment Story Stems: True Or Artefacts?

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The large number of attachment studies that have been conducted based on behavioral observations in separation-reunion settings (e.g. Ainsworth, Blehar, Waters, & Wall, 1978) have not detected gender effects on frequencies of attachment classifications (e.g. van IJzendoorn, 1995); however, differences between girls and boys have been found in studies examining children's mental representations of attachment relationships by the use of doll figures to elicit attachment-relevant stories. Here, we report data from our study that used a story completion procedure to measure attachment quality in Hungarian preschoolers. In seeking to explain our finding of a gender effect on attachment, we review and discuss potential sources of similar findings by others. In doing so, we hope to raise questions for attachment research and to stimulate further discussion (e.g. Del Giudice, 2009; Pierrehumbert et al., 2009).

Our study

The mother-child attachment of 84 low-social-risk, firstborn children (49 boys, 35 girls) was assessed at 6 years of age by the *Manchester Child Attachment Story Task* (MCAST, Green, Stanley, Smith, & Goldwyn, 2000). MCAST is a doll-play method aiming at eliciting relationship-specific responses from children by presenting 4 attachment-relevant 'distress' story stems to be completed by the child. The coding scheme evaluates the represented attachment relationship as reflected in the characters' behavior, as well as in the organization and coherence of the narrative. In addition, specific aspects of child behavior during story completion are also scored from videotapes. The MCAST coding scheme allows identification of four attachment classifications and disorganization scoring on a 9-point scale. Twenty-nine difficult-to-code cases were control-coded by J. Green resulting in an 89.7% agreement for the four-way classifications. As part of the data collection, children's mental abilities were assessed by the R-WISC, and *VQ* scores were used to test whether individual variation in language abilities influenced children's capacities to produce coherent narratives. As a measure of contextual risk in the families, maternal reports of major negative life events of the previous 5 years (e.g. divorce, deaths, severe illness) were collected, and a cumulative *Life Stress Index* (LSI) was computed.

Frequencies of attachment classifications were 42 (50%) secure, 9 (10.7%) avoidant, 3 (3.6%) ambivalent and 30 (35.7%) disorganized, of which the frequency of secure classification was within the range of other published data from story stem assessments. Insecure classifications, however, were predominantly disorganized for both genders (Figure 1). The rate of disorganization was high in our study, but not significantly higher ($p = .26$) than that in the first published data (26.4%; Green et al., 2000). Because of the small number of avoidant and ambivalent children, a two-way secure vs. insecure (mostly disorganized) grouping was used in further analyses. There was a striking difference in the distribution of genders across the secure and insecure groups ($\chi^2 = 8.28$, df = 1, $p = .004$; see Figure 1). Nearly 70% of the girls were securely attached, while over 60% of the boys were insecure (47% disorganized).

To assess the contributions of gender, VQ and LSI to attachment insecurity, a binary logistic regression analysis was conducted with all predictors entered in the first step and interaction terms entered in the second. The significant main effect model ($\chi^2 = 16.79$, df = 3, $p = .001$) contained two significant predictors only, male gender (Wald = 7.97, df = 1, $p = .005$, OR = 4.07) and VQ (Wald = 5.70, df = 1, $p < .05$, OR = .91). Thus, boys were 4 times more likely than girls to be insecure (disorganized) and children with higher verbal abilities were somewhat less likely to produce insecure attachment narratives, while cumulative life stress was not significantly related to the 6-year attachment status. Non-significant interaction terms indicated that better verbal capacities facilitated presenting a secure attachment narrative regardless of child gender, thus not explaining girls' higher rate of security.

In the following sections, we attempt to put our finding of a gender-biased distribution of attachment classifications into the context of current literature by reviewing studies assessing attachment using story stem techniques and reporting gender differences.
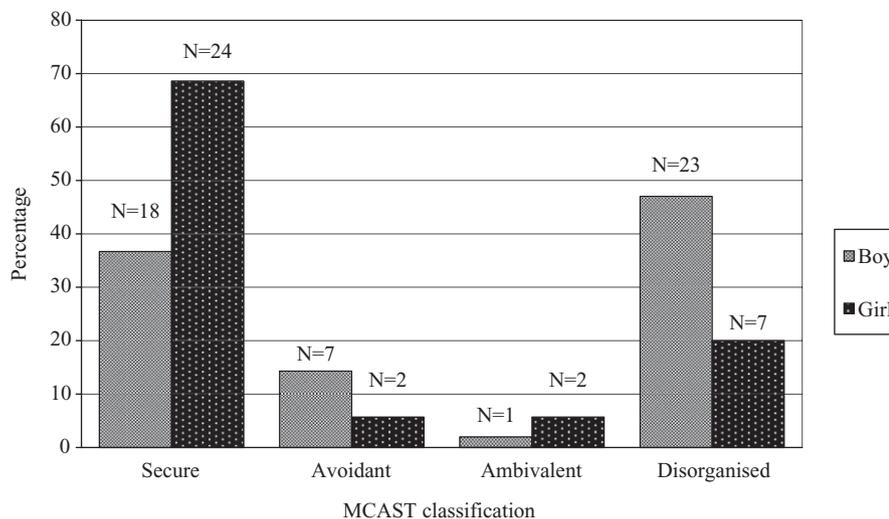
Figure 1. Distribution of attachment classifications at 6 years by child gender (percentages within the genders).

Are Gender Effects Sparse in Childhood Attachment Studies?

Reports on gender effects have been increasing with the growing number of story completion studies using different attachment measures (Q-sort dimensions, a continuous security scale or attachment classifications). In several studies evaluating narratives on *dimensional measures*, girls were found to represent more relationship-oriented themes in more coherent ways, while boys played out more non-interpersonal and aggressive contents (e.g. Laible, Carlo, Torquati, & Ontai, 2004; Moss, Bureau, Béliveau, Zdebik, & Lépine, 2009; Page & Bretherton, 2001; Pierrehumbert et al., 2009; Stadelmann, Perren, von Wyl, & von Klitzing, 2007; Verschueren, Marcoen, & Schoefs, 1996; von Klitzing, Kelsay, Emde, Robinson, & Schmitz, 2000; Woolgar, Steele, Steele, Yabsley, & Fonagy, 2001). At this point, it is not known whether these dimensional gender differences would translate into differential distributions of attachment *classifications*. For example, Verschueren and colleagues (1996) did not find more girls than boys in the secure group despite their higher security scores. However, some other studies that used classifications for evaluating the story stem narratives found biases towards secure attachment in girls and towards insecure/disorganized classifications in boys (Gloger-Tippelt & Koenig, 2007; Kerns, Abraham, Schlegelmilch, & Morgan, 2007; Rydell, Bohlin, & Thorell, 2005).

In our view, the proportion of studies finding gender differences in measures of attachment story stem narratives is not negligible. Gender differences are more common in studies using dimensional measures than in those using classifications. Considering our own results, they seem to be consistent with those of many other doll-play studies in that girls represented more secure mother-child relationships and boys represented more relationship difficulties. Nevertheless, our study, with its high rate (63.3%) of insecurely attached boys, is an outlier among investigations of community samples.

Do attachment story stem narratives represent the true quality of relationships?

In studies conducted in non-clinical populations, gender differences in attachment could not be linked to differential parenting. Either parenting was not measured (e.g. Verschueren et al., 1996) or child gender was not associated with parents' self-reported attitudes (e.g. Stadelmann et al., 2007). Studies conducted with children developing in *adverse* conditions, however, can shed light on potential discrepancies between represented relationship quality and disturbed family environments.

For example, in one study, daughters of depressed mothers represented the highest level of maternal care and the least neglect in comparison to daughters of well mothers, while boys of the depressed mothers portrayed the highest level of neglect and their narratives were the least structured (Murray, Woolgar, Briers, & Hipwell, 1999). Content analysis of narratives in a recent study of clinically referred children with disruptive behavior problems found that daughters of depressed mothers did *not* depict child aggression or sadness (Wan & Green, 2010). Thus, *girls* experiencing disturbed relationships seem to *idealize* relationships in their doll enactments. This view is further supported by findings in a group of children diagnosed with Reactive Attachment Disorder (RAD), where 30% showed secure attachment despite diagnosis. Among RAD children, girls were more likely to be secure and show more organized narratives than boys (Minnis et al., 2009). Based on the above results, we may speculate that enactments by girls are not always reliable indicators of their concurrent relationships. David and Lyons-Ruth (2005, p.14-15), discussing disorganized infant behavior, proposed that "girls' attachment behaviors (. . .) may underrepresent the degree of difficulty in the mother-daughter relationship" and secure-appearing behaviors "may function as precursors to the [later] controlling [i.e., disorganized] behaviors". Likewise, we may speculate that some preschool-age girls produce secure-appearing story completions, despite being in a dysfunctional relationship, which may inflate the rate

of security among girls. Story completion findings obtained from children in divorced families seem to support this hypothesis: girls rather than boys enacted more attachment behavior and empathy towards the (divorced) father figure, when the father was perceived to be low on parenting support (Page & Bretherton, 2001). Thus, girls might react with increased affectionate/affiliative behavior to relationship disturbances.

Regarding story stem enactments by *boys*, their tendency to give more representations of non-interpersonal actions led more frequently to avoidant classification (Del Giudice, 2008; Rydell et al., 2005). Elevated levels of represented aggression are reflected in higher disorganization scores (Del Guidice, 2008; Pierrehumbert et al., 2009), or in a male bias towards disorganized classification (e.g. Kerns et al., 2007). As opposed to the pattern for girls, family disturbance may increase the frequency of disorganized narratives in boys, as shown by a study of preschool children (Gloger-Tippelt & Koenig, 2007), where 80% of disorganized children were boys. This, together with a reported figure of 86% of disorganized cases being boys in a normal sample by Kerns and colleagues (2007), was similar to our finding, that 77% of all disorganized narratives were produced by boys.

In summary, story stem completion methods are widely used to measure childhood attachment, but the above-reviewed data suggest that, to a presently unknown extent, children's doll-play enactments may not always accurately reflect the true qualities of the relationships experienced by the children with their parents. This "measurement error" seems to occur differentially in the genders; shifting girls' responses towards a more regulated narrative and those of boys' towards a more dysregulated style in stress-inducing doll-play tasks. The above-discussed gender-differentiated responses in the story completion tasks are consistent with a proposal by Del Giudice (2009) regarding the emergence of higher male avoidance vs. female ambivalence at this age. Higher scores of girls on affiliative dimensions (e.g., mother-child interaction, approach) could shift their classifications towards secure and ambivalent categories, while the lack of interaction, and enacted aggression, being more common in boys, could be shifting their classifications towards avoidance and/or disorganization.

Concurrent observational assessments of parent-child interactions are rare, and these have not shown evidence of differential parental treatment of the genders in attachment-relevant domains (see Murray et al., 1999). In our opinion, current literature does not provide an explanation for the gender biases reviewed above. In the following section, we propose some developmental processes that may contribute to a fuller understanding of results of story-stem narratives.

Putative developmental processes responsible for the gender bias in story stem measures

It is striking that gender differences in the enacted behaviors of doll characters strongly resemble gender differences observed in childhood social behavior. These stereotypic differences in aggression, empathy and prosocial behavior are widely regarded as concomitants of normative development. Individual variations are large within the genders and may be partly linked to differences in children's competence in emotion and behavior regulation, which in turn are correlated with the quality of attachment (Zimmermann, 1999). Even though they are related, attachment and emotion regulation are clearly different constructs. There seem to be indications that in doll-play-induced responses, represented emotion regulation capacities predominate over the evoked attachment-related themes (Stadelmann et al., 2007), which may lead to consistent gender-biases in these assessments. Thus, while story stem completion tasks elicit schemas related to attachment quality and seem to provide relevant measuring contexts, an overlap with another construct, i.e. emotion regulation, reduces their discriminant validity.

The content of pretend play may be another source of emerging gender differences. In a 'child-friend' play setting (Dunn & Hughes, 2001), boys were characterized by higher rates of violent fantasies in spontaneous pretend play, while other themes did not differentiate the genders. It is possible that gender-related patterns of violence observed in peer interactions and linked to poorer emotion regulation are transferred to doll 'pretend' play, even though story stems do not specifically represent peer relations.

The development of preschoolers' abilities in narrative production could also be considered as a contributing factor to gender-bias in narrative-eliciting assessments. In spontaneous story narratives, girls are more likely than boys to portray characters as 'persons', that is, full mental agents with represented cognitive and emotional states. Developmental pathways of character representation differ for the genders and, at age 5 years, girls still have a notable advantage in structuring a narrative and representing social others (Nicolopoulou & Richner, 2007), which might contribute to girls' evaluations as secure in story stem tasks.

Concluding remarks and future directions

In order to determine whether gender-biased frequencies of attachment classifications are confounded or true reflections of represented relationships in doll stories, deeper knowledge of possible underlying causes and processes leading to gender biases is needed. By understanding better the developmental factors influencing the differential production of attachment narratives in boys and girls, the validity of story stem attachment measures could be further improved. Other researchers have already pointed out that child gender as a moderating factor warrants deeper examination (e.g. Woolgar, 1999). Indeed, there seems to be an increase of publications pointing in the same direction. Besides issues concerning attachment methodologies, further investigations of underlying biological processes resulting in typical gender differences in the targeted age group could significantly enhance our understanding of gender effects in story stem narratives.

We consider that new studies should specifically focus on extensive observations of aspects of everyday caregiving in order to find out if parenting differs for boys and girls in contexts that are theoretically salient for the development of attachment. This work might detect behavioral indices at the levels of interactions and emotion/stress-regulation that could be linked to, and reliably distinguish different

attachment groups. Subsequently, researchers might reach consensus in the 'necessary and sufficient' criteria for identifying the different insecure (avoidant, ambivalent, disorganized) patterns in attachment story completion measures. Both cross-sectional and longitudinal investigations examining correlates of parent-child attachment could benefit from improved and rigorous methods for assessing attachment in early childhood. Doll play techniques are powerful tools for gaining insight into children's hidden and rich inner world; thus studies aiming to answer the questions outlined above could further advance the research and clinical applications of these techniques.

Author Note

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