Child-caregiver Attachment Representations in a Non-Western Context

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Child-caregiver attachment representations in a non-Western context: The feasibility and cultural equivalence of story stems in urban Ghana

Running title: Child attachment story stems in Ghana

Abstract

Story stem measures are an increasingly popular method for assessing the attachment representations of young children, but little is known of their cross-cultural applicability. This study aimed to characterise the attachment representations in 73 five- to eight-year-old children in urban Ghana, West Africa, using the *Manchester Child Attachment Story Task* (MCAST) to test its feasibility, psychometric characteristics and concurrent associations with caregiver- and teacher-rated child behaviour, and to conduct a qualitative thematic analysis of methodological observations. Among the classifiable cases (92%), all attachment classifications were observed, yielding a higher rate of secure attachment than in European samples. Inter-rater reliability, internal consistency, and internal structure were reasonable and largely similar to European studies, although one structural difference was the separation of ‘child assuagement of distress’ from other secure-related items. MCAST narratives were associated with teacher- and caregiver-rated hyperactivity, but internal consistency was low in most *Strengths and Difficulties Questionnaire* scales. Possible culturally-sensitive explanations for our psychometric and qualitative findings are discussed. Overall, story stems are a promising tool for accessing attachment representations in non-Western samples, although modifications are likely to improve cross-cultural equivalence when applied to non-Western cultures. Further investigation is needed to link MCAST outcomes to parenting and socio-emotional development.

Keywords: Child attachment, narratives, cross-cultural, Africa, caregiver-child relations, validation, measure

Cross-cultural research on child-parent attachment has proliferated over the last decades. Using mainly the Strange Situation Procedure (SSP; Ainsworth, Blehar, Waters, & Wall, 1978), which is considered to be the ‘gold standard’ measure of attachment in infancy, such studies provide broad support for the universality of attachment theory and infant attachment classifications, even in cultures where family structures differ substantially from those in the West (Van Ijzendoorn & Kroonenberg, 1988). However, our understanding of attachment in most parts of the world remains scant, largely because how best to measure it remains unclear (e.g., Chen, 2015). Attachment classification measures have been used in various cultural and ethnic groups based on assumptions of cultural equivalence, including equivalence in its importance for child socio-emotional development (van Ijzendoorn & Sagi-Schwartz, 2008). Yet existing measures of attachment, and their theoretical framework, have also been widely criticised for their basis on the Western value of individual psychological autonomy as the primary socialisation goal (e.g., Keller, 2013).

Very few attachment studies have involved modern, urban African populations. Rather, the study of attachment in African families arose from interest in testing the universality of attachment patterns within traditional family structures distinct from those in the West (*see* Van Ijzendoorn & Sagi-Schwartz, 2008). Secure attachment with a primary caregiver dominates in modern (e.g., Tomlinson, Cooper, & Murray, 2005) and traditional (e.g., Kermorian & Leiderman, 1986) African societies. However, some African cultures have a higher prevalence of insecure attachments (e.g., the Northern Sotho of South Africa; Zeanah & Benoit, 1995), or more of a particular insecure pattern (e.g., the Dogon of Mali; McMahan True, Pisani, & Oumar, 2001), than seen in American and European cultures (*see* Van Ijzendoorn & Sagi-Schwartz, 2008; Van Ijzendoorn & Kroonenberg, 1988). Furthermore, little is still known about whether these attachment classifications have the same implications for child socio-emotional development in non-Western cultural contexts. A South African study found that early maternal behaviours known to influence attachment in the West (i.e., intrusiveness/coerciveness and remoteness) also applied to a peri-urban South African context (Tomlinson et al., 2005). However, Chen (2015) suggests that particular attachment classifications

may be more likely to show externalising problems or specific emotion regulation strategies in individualistic cultures than in collectivistic cultures.

Representational measures of childhood attachment

Main, Kaplan, and Cassidy (1985) proposed that evidence for attachment processes is identifiable on the levels of observable attachment behaviour and of attachment representations. An increasingly popular way of measuring such internal representations in young children into middle childhood is through ‘story stem’ (or narrative) assessments. Set up as a doll play completion task, the child is asked to complete each ‘story stem’ using narration and play, the ‘stem’ being an everyday scenario presented in such a way as to elicit mild distress to activate the child’s internal working model of attachment (Bettmann & Lundahl, 2007). Videotaped responses are evaluated using a coding system based on attachment theory.

A growing body of evidence supports the validity of story stem measures (e.g., Bretherton & Oppenheim, 2003; Bureau & Moss, 2010; Matias, O’Connor, Futh, & Scott, 2014), yet surprisingly little is known of their cross-cultural validity. Story stems carry notable advantages over observational measures for understanding attachment across cultures. Firstly, storytelling is universal and pretend play is seen in most cultures (Haight, Wang, Fung, Williams, & Mintz, 2009); through such stories, we gain insight into the socialisation goals and parenting strategies of other cultures. Secondly, children’s responses provide potentially rich information from the narrative content and process, played-out behaviour, and own behaviour, so that such representations can be understood in its cultural context. Thirdly, because story stems do not require access to the child’s home, they are less intrusive for families in cultures that may be very unfamiliar with the research process.

Manchester Child Attachment Story Task

The Manchester Child Attachment Story Task (MCAST; Green, Stanley, Smith, & Goldwyn, 2000) is a measure of child attachment representations, developed in the UK, and has been widely used in studies mainly in Europe (e.g., Colle & Giudice, 2010, Viddal et al., 2015), but also in Australia (Pasalich, Dadds, Hawes, & Brennan, 2012) and Japan (Komatsu, 2011). In normative European samples, MCAST attachment security has been linked with higher social and emotional competence (Colle & Giudice, 2010) and increased effortful control in boys (Viddal et al., 2015), whereas disorganised attachment has been associated with lower social competence and more externalising and internalising behaviours (Barone & Lionetti, 2012; Goldwyn, Green, Stanley, & Smith, 2000). These findings are consistent with attachment theory in that secure attachment promotes a child's healthy psychological development, whereas insecure and disorganised attachments increase risk in the development of emotional, social and behavioural difficulties (van Ijzendoorn & Sagi-Schwartz, 2008).

Two MCAST studies have involved ethnic minority groups living in urban centres in Europe: In a mostly (85%) non-White UK sample at high psychosocial risk, minority status did not explain attachment differences, but disorganised attachment was less linked with impairments in children of African and other (except Afro-Caribbean) backgrounds than in White British children (Futh, O'Connor, Matias, Green, & Scott, 2008), perhaps implying low cultural equivalence in MCAST responses across groups. It is also possible that any link between attachment and child functioning is eclipsed by the socioeconomic disadvantage of some minority groups (Mesman, van Ijzendoorn, & Bakermans-Kranenburg, 2012). The study did not distinguish recent immigrants from those who are acculturated into the majority culture. A study of first generation immigrants in Germany is ongoing (Rickmeyer, Lebigier-Vogel, Busse, Fritzemeyer, & Burkhardt-Mußmann, 2015).

The urban Ghanaian context

Located in West Africa, Ghana is one of the most populous countries in Sub-Saharan Africa with an estimated population of 27 million (Ghana Statistical Service, 2014), of which 51% is

urbanised (Ghana Statistical Service, 2012). Ghana is a former British Colony which, in 1957, became the first Sub-Saharan country in colonial Africa to gain independence. The Greater Accra Metropolitan Area is its most densely populated region at 4 million (Ghana Statistical Service, 2012). Modern Ghana retains strong traditional values of hierarchy and communal inter-dependence; within the family unit, each member is expected to play a role (Sam, 2001). Elders are highly respected and children are expected to conform and be obedient (Kuada & Chachah, 1999.). Religion continues to play a vital, if not resurging, role in Ghanaian life (Pokimica, Addai, & Takyi, 2012).

On the other hand, urbanisation and modernisation in Ghana have resulted in increasing socioeconomic disparity and a shift away from the traditional extended family structure. Parents move for work, taking their children with them or leaving them to be cared for by extended family (Sam, 2001), and divorce and single parenthood have increased (Kpoor, 2014). An estimated 50% of Accra households live in poverty (Fink, Weeks, & Hill, 2012), with families commonly living in one-room homes. However, a small but increasing middle class (Ncube & Shimeles, 2013) is integrating individualistic western values with traditional ones. Overall, 90% of school-age children in Accra attend school, which is compulsory up to fifteen years (Fink et al., 2012), and English is the language of instruction. Cultural norms, social change and economic disparities are likely to impact on parent-child relationships, yet very little is known about attachment patterns in modern, urban Africa, and no published studies of attachment in Ghana exist.

Current study

This study aimed to explore the feasibility and cultural equivalence of a story stem measure of attachment in a mixed socioeconomic sample of urban Ghanaian school children; firstly, by examining the psychometric MCAST *content* produced, including its relationship with child behaviour, and secondly, via a qualitative thematic analysis of methodological issues that emerged from the MCAST testing *process*. To test the MCAST's psychometric characteristics in the Ghanaian context, we examined the distribution of attachment classifications compared with existing European

samples, the proportion of unclassifiable clips, inter-rater reliability, internal consistency across story stem responses, internal structure of the MCAST scales, and whether MCAST responses were related to caregiver- and teacher-reported child behaviour. To obtain a more nuanced insight into the MCAST's feasibility and face validity in the Ghanaian context, and to facilitate a culturally-sensitive interpretation of MCAST responses, a thematic content analysis was conducted from qualitative observations made during MCAST administration and coding.

Method

Participants

English-speaking children, aged 5- to 8-years, were recruited from schools in the Greater Accra region, a public school in Accra and a private school in Tema. Children within the eligible age range (as per school register and confirmed by staff and the child) from Primary Year One to Primary Year Three were provided with letters inviting participation, information sheets and questionnaires to give to parents and guardians; this was the usual channel for the school to contact guardians. To maximise participation at the public school, guardians were invited to attend an informal group meeting arranged on two occasions, to help with responding to questionnaires (as some caregivers spoke little English or could not read). Informed caregiver consent was obtained from $N = 76$, of which three children were excluded (one had lived in the United States; two had MCAST video sound issues).

Our final sample ($N = 73$) was a mean age of 7.27 years (range: 5 – 8 years; $SD = .90$; public school: $n = 33$; private school $n = 40$; Year 1: 24.7%; Year 2: 49.3%; Year 3: 26.0%;), 35 (47.9%) were boys, 50 (68.5%) lived with both parents, and 40 (78.4%) had married/cohabiting guardians (missing data: $n = 22$). Reported primary caregiver was: mother ($N = 57$; 78%), auntie ($n = 5$), grandmother ($n = 5$), father ($n = 3$), older sibling ($n = 3$), and they lived with a $M = 2.69$ ($SD = 2.27$) siblings. Highest household occupation was as follows: 9 (12.3%) professional or managerial, 26 (35.6%) skilled manual, 15 (20.5%) semi-skilled and 23 (31.5%) unskilled.

Measures

The Manchester Child Attachment Story Task (MCAST; Green et al., 2000): In this validated semi-structured measure of child attachment representations (Barone et al., 2009; Goldwyn et al., 2000; Green et al., 2000), a trained administrator presents four ‘story stem’ scenarios (having a nightmare, getting hurt, feeling ill, and getting lost during a shopping trip, and a practice stem) via doll play and narrative, designed to induce a level of arousal and mild distress to prompt the child to resolve it in their story completion or response. The MCAST was designed to be dyad-specific by involving only those dolls selected by the child to represent the child (e.g., “Christopher-doll”) and primary caregiver (e.g., “Mama-doll”). After the child completes the story, specific prompts may be used to obtain a fuller story and a standard set of probes ask about the child and caregiver doll’s thoughts and feelings in the story. The child’s overall responses are thought to reflect the child’s cognitive-affective ‘internal working model’ or internal representation of their caregiver.

MCAST attachment classifications are derived from carefully rating each videotaped response along nine-point scales for specific content (e.g., parent-to-child and child-to-parent proximity (combined into one scale in the current study), caregiver behaviours, bizarre content without resolution) and process features (assuagement of distress, narrative coherence, disoriented phenomena), then by summarising all 4 story completions using specific guidelines. The attachment strategies are typically characterised as follows: *interpersonal/secure* (B): a coherent representation of interaction or proximity with the caregiver leading to appropriate assuagement of distress; *insecure-avoidant* (A): either restricted content or representations that avoid or minimally involve the caregiver, or involve self-care activities; *insecure-ambivalent* (C): child-caregiver contact that does not bring resolution; often accompanied with contradictory behaviours, weak or contradictory distress signalling, or preoccupation; *disorganised* (D): either an absence of strategy, multiple internally contradictory strategies, high episodic disorganisation (disorganised, unusual features in the child’s behaviour or represented doll behaviour), or high bizarreness without resolution. Consistent with

other standard attachment classification systems, each classification comprises more detailed sub-classifications.

Adaptations to MCAST administration, set-up and script: Testing the validity of the current (UK) MCAST required us to apply the existing coding system. However, following consultation with local academics, teachers and research assistants, and pilot work, the set up and procedure were adjusted as follows to maximise the child's identification with and understanding of the task: (1) doll house furniture and props were adjusted (e.g., much of the furniture was removed; a large pot was used in place of a cooker/stove); (2) the script was amended with the local vernacular (e.g., "*His stomach is painning him*" instead of "*He has a pain in his tummy*") and to follow local norms (e.g., a cockerel call instead of an alarm clock); and (3) a few locations were changed (e.g., market in place of shopping centre). Special administrative attention was given to the practice 'stem' to test for understanding of the task and use of symbolic play. More prompts and direct questioning were used to encourage a complete response, and to seek clarification and eliminate the possibility of misunderstanding the task or language.

The Strengths and Difficulties Questionnaire (Goodman, 1997; UK version): This validated brief behavioural screening measure asks about 25 attributes, generating scores for conduct problems, inattention-hyperactivity, emotional symptoms, peer problems and prosocial behaviour; the first four summed to create a 'total difficulties' score. We selected this measure for its widespread international use, with many translated versions, and evidence of validity in other African countries (e.g., Kashala, Elgen, Sommerfelt, & Tylleskar, 2005).

Procedure

In both schools, the same researcher administered and videotaped the MCAST to each child in a quiet space at school without others present. Videotaped MCAST clips were evaluated by a trained, reliable and experienced coder adhering to the original coding manual.

Sociodemographic and SDQ questionnaires were collected separately from caregivers, with 53 (84%) completing the SDQ, including all from the private school, but 39% from the public school, which was likely to be due to literacy level. We had arranged group meetings to help with completion, but many caregivers lived a long distance from the school, could not afford public travel or had other family/work commitments. Forty (60%) SDQs were completed by teachers (private school: 53%; public school: 69%); having a lack of time to complete them for some or all children was commonly reported due to large class sizes and workload.

Results

Feasibility and distribution of attachment classifications

Six (8.2%) MCASTs were unclassifiable due to a lack of understanding of the task or symbolic play, although all engaged with the task. The only suggestion of a background difference in the ‘unclassifiable’ cases from the remainder was that the mother was the main caregiver in only 2 (33.0%) cases. Observed classifiability issues are discussed later in the qualitative analysis of methodological issues.

The attachment classifications of the 67 coded cases are presented in Table 1. We compared these with those of normative European samples combined; the current sample had a higher proportion of secure attachments ($\chi^2(1) = 5.85, p = .02$) but not disorganised attachments ($\chi^2(1) = 2.26, p = .13$). The sample size did not allow us to explore the reliability and validity at sub-classification level, but it is noted that only 17% ($N = 8$) of secure attachments were classified as ‘optimally secure’, despite the high rate of security.

No significant gender difference was found in secure attachments between boys ($N = 25$; 78.1%) and girls ($N = 24$; 68.6%) ($\chi^2(1) = .78, p = .38$). Attachment security rate did not differ significantly by school ($N = 31$ (81.6%) Vs $N = 18$ (62.1%); $\chi^2(1) = 3.19, p = 0.07$); however, 1

private school child (2.6%) was classified with a disorganised attachment compared with 6 (20.7%) public school children (Fisher exact $p = .04$).

Inter-rater reliability and internal consistency across vignettes

A trained, reliable independent coder, unfamiliar with Ghanaian culture, coded 20 (30%) randomly selected video clips. Raw agreement was 85% on security vs. insecurity (Cohen's $k = .48$, $p = .028$) and 80% on 4-way classification (A, B, C, D) ($k = .52$, $p < .001$). Key summary scales showed the following intraclass correlations: narrative coherence: $r = .85$, $p < .001$; episodic disorganisation: $r = .72$, $p = .005$. Due to the high proportion of secure classifications, optimal (B3) versus non-optimal (B1, B2, B4) classifications were examined and showed 71% agreement ($k = .35$, $p = .14$).

We expected internal consistency to be fairly high across the four stem responses within individuals if they represented their attachment internal working model. However, the MCAST coding system is designed to allow for some degree of scenario-specific inconsistency at both scale and classification level; that is, the coder looks for overall patterns that might not be present in every stem response. Cronbach's α for final attachment classification (A, B, C, D) across stems was acceptable ($\alpha = .73$; Table 2). Scales showed fair ($\alpha > .60$) to high ($\alpha > .80$) internal consistency, with 2 exceptions (self-care: $\alpha = .24$; reversal: $\alpha = .23$) which were not attributable to any particular story stem. That is, by examining their Cronbach's α at item level if one item was deleted, at most, self-care would increase to $\alpha = .35$ if the 'shopping trip' story completion was deleted, and reversal would increase to $\alpha = .33$ if the 'feeling ill' story completion was deleted.

Internal structure

All MCAST 1-9 scales were entered into a principal components analysis (PCA) with varimax rotation, after caregiver sensitivity and caregiver warmth were averaged due to their high expected association ($r = .79$, $p < .001$) to avoid multi-collinearity issues. The PCA yielded a 3-factor

solution, accounting for 69% of the variance (*Table 3*), similar to European MCAST studies whose PCAs also yielded 3 factors, accounting for 74% (Green et al., 2000) or 73% (Barone & Lionetti, 2012) of variance. Factor 1 loaded onto variables associated with positive and coherent caregiving (proximity, caregiver sensitivity and warmth, coherence, and negatively with caregiver withdrawal and self-care), factor 2 loaded onto atypical and unresolved phenomena (disorganisation, bizarre content without resolution, reversal, and negatively for child-reported assuagement, observer-rated assuagement and coherence), and factor 3 loaded onto variables associated with invasive negative relations (motivational conflict, intrusiveness, and negatively for child-reported assuagement).

Attachment security and SDQ

Although SDQ total difficulty scores ($M_{caregiver} = 8.21$; $SD = 4.74$; $M_{teacher} = 6.93$, $SD = 4.60$) were comparable with British norms (Goodman, 1997), Cronbach α was unacceptable in caregiver and teacher emotional, conduct and peer subscales as reported by the caregiver ($\alpha = .53$, $.50$ and $-.08$ respectively) and teacher ($\alpha = .39$, $.29$ and $.49$ respectively). No scales reported good alphas ($>.70$). We analysed scales with fair consistencies (*Table 4*, including borderline $\alpha = .58$ in caregiver-rated hyperactivity) by attachment security. Children classified as secure received higher caregiver-rated hyperactivity and total difficulty ratings, but only hyperactivity remained significant after controlling for potential confounders associated with the SDQ (*Table 4*). The disorganised group was too small to examine SDQ differences by; however, the disorganisation scale was not correlated with any SDQ scales.

Another way to analyse the integrity of the MCAST's internal structure was to examine the SDQ in relation to the factors produced by the PCA (created by taking the mean scale ratings within each factor after multiplying each scale rating by its PCA loading). *Table 5* shows significant correlations between atypical/unresolved MCAST content and caregiver- and teacher-rated hyperactivity (despite the low correlations between these reporters' ratings), and between conflictual/intrusive relations and teacher-rated total difficulties.

Content analysis of qualitative observations of the MCAST process

In our inclusive approach to recording methodological observations, we noted issues that were fairly typical in the current sample (and less commonly seen in European samples) and those that were infrequent (but unusual in European samples). This resulted in a fairly large number of methodological observations from which four key themes emerged (*Table 6*). However, no single issue was common to most children. In *Table 6*, we outline how these observations may be evaluated based on the existing MCAST system and then some possible alternative cultural interpretations.

The first theme is concerned with the child's familiarity with play materials and task understanding. Some of our sample responded in ways that may suggest a difficulty interpreting what is being asked of them, or a different understanding of the task than intended. Arousal induction sometimes did not appear as effective as is typically seen in Western samples, leading the administrator to question the child's task comprehension. However, we only coded MCASTs with at least some evidence of true symbolic play. Children also commonly provided positive 'stock' verbal responses to 'probe' questions and a few demonstrated somewhat unusual doll play, which may have an attachment-related meaning but may alternatively suggest low task comprehension, a lack of creative play skills or some other cultural-specific meaning.

A second theme that pervaded was the low range of affective expression, tone and/or content in many participants' responses, making such responses a challenge to code within the existing MCAST system. This supposed flat affect was particularly striking when observed in responses that otherwise had the hallmarks of an ambivalent classification; that is, motivational conflict and contradictory behaviours, which usually lead the child doll to escalate their distress signalling. More commonly, caregivers were depicted as responsive to the child's needs (and so were not classed as avoidant, a strategy in which emotions are typically dismissed) but with low warmth. This is reflected in the mean 'caregiver warmth' rating (*Table 2*), which was middling (low ratings refer to a hostile caregiver).

A third theme refers to issues with interpreting certain depicted actions and thoughts in children's responses, the most common being the child seeking caregiver to notify of the problem (presented in the stem), corporal punishment, practical survival anxieties, and other fear preoccupations. Some of these contents recurred across stem responses and, within the MCAST, may be viewed to reflect the child's internal working model. However, such content may reveal real experiences or anxieties and even socialisation goals.

Theme 4 is concerned with challenges in how particular language is interpreted when the coder is not from the same culture as the study sample. Some words and phrases in the local vernacular may have different connotations in another culture that technically shares the same language. Alternatively, the language may reflect the child's vocabulary level, which may simply be developmental and/or may be due to many of these children speaking local dialects at home.

Discussion

To our knowledge, this study represents the first test of a story stem measure of attachment in a normative African sample, by demonstrating its use in children in urban Ghana, 78% of whom report the mother as primary caregiver. Evidence for feasibility is promising: 92% of the sample demonstrated understanding of the task, symbolic play, and classifiable responses differentiating all attachment classifications and reflecting aspects of Ghanaian home and family life. However, 8% did not 'pass' the practice/baseline story stem; our qualitative findings point to difficulties understanding the task requirements. Although great care was taken to adapt the MCAST set-up for the Ghanaian context, some children were unfamiliar with these types of toy and/or with an adult requesting creative play, perhaps reflecting strong cultural norms of hierarchy and use of rote repetition in education (Akyeampong, Pryor, & Ampiah, 2006). If story stems are to be effective, the child must spontaneously relate to the scenario, identify with the child figure, and understand the task as an essentially creative one. Our qualitative analysis of methodological issues suggests including

additional practice story stems, extending ‘classifiability’ guidelines/criteria, and reassuring the child that there is no right or wrong answer to the task.

Regarding MCAST attachment classifications, our sample showed more secure representations (73%) than European samples (58%). This rate is also high compared to infancy SSP studies in non-Western cultures (Van IJzendoorn & Sagi-Schwartz, 2008; Van IJzendoorn & Kroonenberg, 1988). However, ‘optimally’ secure sub-classifications were much less common than found in Green et al.’s (2000) UK MCAST study. On the other hand, our sample showed a low rate of disorganised attachment, particularly the private school group, but given the variability among European MCAST studies (11-36%), no significant difference emerged. Death and danger depictions, as noted in our qualitative analysis, may suggest that disorganised attachments would be more common in this population, but these themes may not have been severe enough for a disorganised *classification*, or may have been realistic rather than atypical when placed in the story’s context. A formal analysis of the narrative content may provide insight into the attachment relevance of such depictions (e.g., Wan & Green, 2010).

The MCAST showed reasonable evidence of reliability in our sample. Inter-rater agreement compared well with several previous studies on 4-way classification (80%) (e.g., Barone et al., 2009: 78%; Futh et al., 2008: 80%) and disorganisation and coherence scales (Green et al., 2000). The kappa statistic for 4-way classification appears low but suggests moderate agreement (Altman, 1991), illustrating a known paradox due to the high proportion of secure classifications (Feinstein & Cicchetti, 1990). When disagreements occurred, the primary coder’s knowledge of Ghanaian culture may have unconsciously affected coding slightly. However, on balance, the MCAST should be coded by someone with a good understanding of local customs, values and language expressions. We also report moderate to high internal consistency, which is acceptable in the MCAST as it allows for scenario-specific circumstances across stems. The low internal consistencies in self-care and reversal were also reported in Barone et al.’s (2009) Italian sample; although these scales indicate avoidant and ambivalent strategies respectively, they are not a requirement for classification and were seldom used in our sample. By contrast, motivational conflict (also a child-doll ‘behaviour’ and also

infrequent in this sample) is generally core to an ambivalent classification (Mikulincer, Shaver, Bar-On, & Ein-Dor, 2010) and showed fair internal consistency.

Our internal coding structure shares similarities with European MCAST studies (Green et al., 2000; Barone & Lionetti, 2012), even though a few coding scale changes had been made between each of these studies. All studies yielded three factors accounting for similar amounts of variance, with most variance accounted for by a factor incorporating narrative coherence, positive caregiving scales and (low) self-care. However, we found a negative loading of (observer-rated) assuagement on ‘atypical and unresolved phenomena’, rather than loading positively with positive and coherent caregiving variables. This disjoint between proximity/caregiving/coherence and assuagement is consistent with the high proportion of non-optimal secure attachments we found, in which positive caregiver-child contact and/or caregiving leads to some yet not complete/high assuagement.

Given its widespread international use, the SDQ was selected as a simple measure of difficult and prosocial behaviour to test the MCAST’s concurrent validity, but we found relatively low internal consistencies when either parents or teachers responded. A systematic review of 29 mainly Western samples yielded low Cronbach alphas on some SDQ scales (Kersten et al., 2015), suggesting that our result may not be (entirely) attributable to cultural non-equivalence. After excluding scales with unacceptable alphas, we report a moderate association between MCAST conflictual/intrusive relations and teacher-rated total difficulties. Also, insecurely attached children had substantially higher caregiver-rated hyperactivity than securely attached children, and atypical/unresolved MCAST content was moderately correlated with *multi-informant* hyperactivity. Attachment insecurity is known to be linked with hyperactivity, particularly at clinical levels (e.g., Finzi-Dottan, Manor, & Tyano, 2006), but causal mechanisms are difficult to ascertain: insecure or disorganised attachment may promote hyperactivity via coercive or controlling parent-child dynamics, but equally, hyperactivity (usually accompanied by impulsivity and attentional problems) may make sensitive caregiving (associated with secure attachment) a challenge.

The methodology content themes identified in our qualitative analysis point to practical difficulties in applying story stems to a different culture (familiarity with doll house play, understanding the task, language fluency), as discussed earlier, and to the challenges in interpreting the MCAST responses of Ghanaian children using the existing coding system (depictions of proximity seeking, a range of seemingly negative representations, and affective and language expression). However, many observations seem to reflect the home lives and socialisation of Ghanaian children (i.e., transmitted customs and values, from religious and superstitious beliefs to the games they play), thus providing evidence of face validity that these meaningful representations. This analysis also demonstrates the limitations of the psychometric analyses alone to understand a measure's cultural validity. Our qualitative analysis, coupled with cultural knowledge about Ghanaian society, allows us to explore possible culturally-sensitive explanations for our findings.

In this predominantly securely attached sample, immediate but brief child-to-caregiver contact ('proximity-seeking') was a common MCAST response, typically representing a non-optimal but secure attachment. However, in these depictions, it was often the child doll who initiated contact to *notify* the caregiver doll, rather than to *seek attachment-related comfort* (though we cannot rule out indirect comfort-seeking). In Ghanaian culture, which is collectivist and hierarchical, such contact may be motivated by strong social expectations of child obedience (e.g., "*I will tell mother I hurt my leg as that is what good boys do and mother would disapprove if I don't tell her and she sees it*"), which may lead to an over-classifying of secure representations. On the other hand, the sparseness of emotional features (in the child and depictions of caregiver warmth) in otherwise typically secure (or ambivalent) responses may be a cultural norm in Ghana in these kinds of 'distress' circumstances, and may explain an under-classifying of 'optimal' secure representations. Furthermore, McMahan True et al. (2001) suggest that the degree to which caregiver-child contact behaviours are meaningful in attachment terms depends on cultural norms regarding private and communal space, which may be especially relevant in our sample as many of our participants and their families live in single-room homes.

Our qualitative findings also suggest that these MCAST stems of everyday 'distress' scenarios highlighted the fairly common depiction of basic survival concerns (e.g., lack of money for

the hospital, lack of food, or spiritual concerns of life and death). Such material may be understood in the MCAST to signify the introduction of new, seemingly unrelated negative themes as focal points for continuing attachment-related distress (thus incomplete assuagement), which to the Western coder may appear age inappropriate. Alternatively, the ‘mild distress’ content of these story stems may be interpreted differently than intended by children who live in a more threatening environment. Such representations may reflect these children’s lived experiences in a country where illness-related mortality is high. Also, death, illness and dangers (and associated unusual attributions that were identified in our content analysis), which may be interpreted as bizarre or disorganised attachment-related phenomena, must be considered in the light of religious and traditional spiritual beliefs that pervade in Ghanaian culture (e.g., nightmares or pain signifying a spiritual signal or warning – Kuada & Chachah, 1999).

Overall, the methodological issues that arose provide an indication of possible culturally-sensitive explanations for our findings. At the broadest level, story stem measures may be more effective in individualist cultures in which children are socialised to be verbally expressive especially about one’s feelings. In collectivist cultures, different norms exist regarding conformity, obedience, living space etc.; therefore, particular attachment ‘markers’ as defined by attachment theory in the West may not sufficiently differentiate true attachment patterns using the existing MCAST rating scales. Wider theoretical issues of cultural relevance and equivalence can only be directly addressed via extended naturalistic observations. However, theoretically- and culturally-informed coding adjustments can be made, piloted, including a qualitative analysis of the story completions, then tested for convergent and predictive validity by comparing against culturally-sensitive measures of emotional and social development, and caregiver sensitivity. Our findings suggest how specific scales (namely, child-caregiver proximity seeking, caregiver warmth, child-reported assuagement, episodic disorganisation, and bizarre content without resolution) may be particularly affected by cultural values and norms in the Ghanaian context, which can inform modification.

Several limitations of this study must be considered. Firstly, we cannot rule out the possible confounding effect of language fluency. The MCAST was administered in English, the official

language and the language of education in Ghana. However, Ghana comprises a number of ethnic groups, each with their own language, which may be the language used at home. Secondly, obtaining reliable child age data was a challenge because school records, caregiver report and child report sometimes differed. Thirdly, there was a lack of comparison group for the current study. Fourthly, by excluding the subgroup with unclassifiable MCAST responses who struggled to demonstrate symbolic play and/or understand the nature of the task, the attachment findings may be skewed. This may be a particularly socially deprived group even by Ghanaian standards, whose primary caregivers were mostly not the mother. Similarly, the high SDQ non-response rates were unlikely to be at random. Most (61%) caregivers of public school children did not respond; these children are probably more likely to be from difficult backgrounds (e.g., living below the poverty line, less engaged caregivers), so may have had higher SDQ scores (i.e., more difficulties). Fifthly, our behavioural measure (SDQ) is a crude screening tool with limited internal consistency in our sample, preventing us from testing the MCAST against developmental outcomes that we would expect to be related to attachment (social, emotional and conduct difficulties). Future studies could compare the MCAST against direct measures of caregiver behaviour and child socio-emotional functioning, or a more comprehensive behavioural assessment.

In summary, story stems are a promising tool for gaining access to the attachment representations of Ghanaian children who can demonstrate symbolic play, yielding responses that are classifiable, reliable, and link insecure attachment with concurrent child hyperactivity and teacher-rated difficulties, albeit moderately. Our qualitative analysis highlights both the strengths and limitations of using story stem measures in cultural groups outside of that in which they were developed, and questions remain regarding whether the distribution of MCAST attachment classifications reflects true attachment patterns, or whether attachment manifests itself differently in the story completions of children in Ghanaian society. Informed by our methodological observations combined with local cultural knowledge, we make suggestions for modification and further empirical work. By rigorously testing culturally-sensitive adjustments in story stem administration and coding,

we move towards providing valid instruments for understanding attachment and socio-emotional development, which continue to have an overwhelming Western bias.

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Table 1. MCAST attachment distributions in the current sample compared with European normative samples

	N	Secure (B)	Avoidant (A)	Ambivalent (C)	Disorganised (D)
Current study ^a	67	49 (73%)	6 (9.0%)	5 (7.5%)	7 (10%)
Total other studies	489	282 (58%)	74 (15%)	46 (9%)	87 (18%)
Green et al. (2000), UK	53	29 (55%)	11 (21%)	1 (2%)	12 (23%)
Del Giudice (2008). Italy	122	66 (54%)	17 (14%)	19 (16%)	20 (16%)
Barone et al. (2009), Italy ^b	230	145 (63%)	37 (16%)	23 (10%)	25 (11%)
Toth et al. (2013), Hungary	84	42 (50%)	9 (11%)	3 (4%)	30 (36%)

^a The following proportions when based on the complete sample (N = 73): Secure 67.1%, avoidant 8.2%, ambivalent 6.8%, disorganised 9.6%; unclassifiable 8.2%.

^b Barone et al.'s (2009) sample includes N = 60 randomly selected from Del Giudice's (2008) sample.

Table 2. Mean MCAST scale ratings and internal consistency across the 4 story stems^a (N = 67)

1-9 scale in MCAST	<i>M (SD)</i>	<i>α</i>	95% CI
Narrative coherence	5.63 (1.13)	.86	.80, .91
Bizarre content	1.16 (.76)	.81	.71, .88
Child-reported assuagement	7.06 (1.69)	.80	.70, .87
Observer-rated assuagement	5.85 (1.71)	.78	.68, .86
Caregiver warmth	5.28 (1.32)	.78	.67, .86
Caregiver intrusiveness	1.27 (.68)	.73	.59, .83
Caregiver withdrawal	2.93 (1.79)	.70	.55, .80
Child-caregiver proximity	7.28 (1.26)	.67	.51, .79
Caregiver sensitivity	5.80 (1.48)	.67	.48, .80
Disorganisation	2.11 (1.40)	.63	.46, .76
Motivational conflict	1.34 (.82)	.62	.43, .75
Child self-care	1.50 (.82)	.24	-.13, .50
Reversal	1.42 (.67)	.23	-.14, .50
Final 4-way attachment classification		.73	.60, .82

^aThe engagement scale was not analysed as nearly all our sample scored 8 or 9 (with the exception of external disruptions), which is likely to reflect cultural expectations of obedience to an adult; it is also not formally a measure for classifying attachment but primarily used as supporting information.

Table 3. Rotated component structure of the MCAST coding system^a

	Factor 1	Factor 2	Factor 3
Proximity	.90		
Self-care	-.77	-.24	
Reversal		.68	-.31
Motivational conflict		.39	.65
Intrusiveness			.83
Withdrawal	-.90		
Child-reported assuagement		-.67	-.42
Observer-rated assuagement	.32	-.77	-.33
Bizarre content		.68	
Sensitivity and warmth	.80	-.20	-.31
Narrative coherence	.60	-.54	
Disorganisation		.76	.36
Variance captured	37.23%	22.38%	9.27%

^a Coefficients < .2 were removed

Table 4. SDQ behaviour by MCAST security status

SDQ variable	α	95% CI	Secure n = 44 <i>M (SD)</i>	Insecure n = 14 <i>M (SD)</i>	ANOVA	ANOVA controlling for school	ANOVA controllin g for year group
Caregiver-rated (N = 58)					<i>F</i> [1, 56]	<i>F</i> [2,55]	<i>F</i> [2,55]
Hyperactivity	.58	.37, .74	2.73 (1.98)	4.43 (1.70)	8.35**	7.20**	8.47**
Prosocial	.62	.42, .76	7.68 (2.40)	7.50 (1.70)	.069	.032	.074
Total difficulties	.66	.49, .79	15.90 (4.87)	20.00 (4.66)	4.96*	3.45+	2.35
Teacher-rated (N = 40)					<i>F</i> [1, 38]	<i>F</i> [2, 37]	<i>F</i> [2, 37]
Hyperactivity	.60	.35, .77	2.77 (2.13)	3.00 (2.16)	.09	.022	.099
Prosocial	.62	.40, .77	7.83 (2.09)	7.60 (1.27)	.11	.002	.077
Total difficulties	.67	.49, .82	14.97 (4.16)	14.90 (6.33)	.001	.23	.002

* $p < 0.05$; ** $p < 0.01$; + $p < 0.10$

Table 5. MCAST factors: Associations with sociodemographic factors and SDQ

	Positive caregiving	Atypical/unresolv ed	Conflict/intrusive relations
<i>Sociodemographic factors</i>			
Age	.17	.18	-.04
Sex (1=female)	.05	-.05	.01
School year group	.42***	-.08	-.11
School (1=private)	-.23	.43***	-.23
Household occupation	-.04	.01	.04
Siblings in household	.02	.17	.15
Living with parents	-.05	.03	-.10
<i>Behaviour (SDQ)</i>			
<i>Caregiver-rated (N = 58)</i>			
Hyperactivity	-.24	.31*	.21
Prosocial	.21	.10	-.09
Total difficulties	-.22	.25+	-.24+
<i>Teacher-rated (N = 40)</i>			
Hyperactivity	-.14	.35*	.30+
Prosocial	.29+	-.22	-.18
Total difficulties	-.04	-.24	.33*

* $p < 0.05$; *** $p < 0.001$; + $p < 0.10$

Table 6. Applying the MCAST to the Ghanaian context: Methodological themes and observations

Theme	Methodological observation	MCAST assumption	Possible cultural non-attachment interpretations
Familiarity with play materials and understanding of the task (administration)	<ul style="list-style-type: none"> Hesitance in responding (unclassifiable if no symbolic play) Tendency to repeat story stem (unclassifiable if no symbolic play) 	The story stem prompts identification with child doll and spontaneous unmediated response representing the child's attachment quality to the caregiver	Unfamiliarity with materials and researcher Task not understood, as creative play is rarely requested
	<ul style="list-style-type: none"> Low behavioural indication of an aroused response 	Arousal induction evokes attachment representation	Unfamiliarity with this kind of 'play' situation; lack of identification with the doll
	<ul style="list-style-type: none"> One case of caregiver doll repeatedly 'banging' on the floor in dolls house while child remains silent 	Actions are symbolically meaningful in terms of the set-up scenario and/or the attachment relationship; e.g. atypical or aggressive action	May reflect fragile symbolic play skills
	<ul style="list-style-type: none"> Tendency to use stock responses (e.g., "Good") in response to probe (e.g., "How is Abena doll feeling now?") 	Probes tap into metacognitive ability, inform assuagement and coherence codes, and may add value to assessment of attachment security	Unaccustomed to being asked about feelings/thoughts, and may interpret as a form of social greeting, of which there is strong etiquette
Cultural differences in affective expression	<ul style="list-style-type: none"> Tendency toward flat affective expression, even when the content is in keeping with an ambivalent strategy (in which affect tends to be unmodulated) 	Evidence of emotional restriction, which is consistent with an avoidant attachment representation (though evaluated against other observations).	Shows of overt emotional affect may not be the cultural norm
	<ul style="list-style-type: none"> Little caregiver warmth is depicted 	Child represents caregiver as low in warmth and therefore less 'secure' and perhaps as evidence towards an avoidant attachment.	Shows of overt emotional affect may not be the cultural norm May reflect lack of confidence with narratives
Cultural differences in	<ul style="list-style-type: none"> Often sought immediate contact with caregiver then notified of circumstances; 	Proximity seeking of child to caregiver represents secure base behaviour	Expectations of the child role in a culture where obedience is valued

the interpretation of the child's depiction of action and thoughts	this seemed to be often accompanied by no expectation that the caregiver would resolve distress		The distress scenario may be viewed as outside of their personal control
	<ul style="list-style-type: none"> • Corporal punishment represented 	Interpreted as high caregiver hostility and insensitivity, this signifies conflictual caregiver-child interactions and perhaps reflect the child's motivation conflict.	May reflect a societal norm in a culture where child obedience is valued, and physical discipline is regularly used in schools
	<ul style="list-style-type: none"> • Concerns with money, income or food (e.g., <i>"He's thinking about how he get the money to mama to get something to eat... He wash his face and brush his teeth; he will give money to mama. He thinks where he will get the money..."</i>) 	Apparent non-attachment related anxieties are a manifestation of continuing distress due to poor assuagement or resolution of attachment-related distress; 'unusual' preoccupations may reflect attachment disorganisation	May literally represent the child's reality in a developing country Concerns about e.g., falling over again may be due to costs rather than a re-presentation of attachment-related distress
	<ul style="list-style-type: none"> • Attributions occasionally difficult to interpret (e.g., <i>"She [mama doll] feels the dream was a bad dream and thinks something might happen to [child] doll"</i>) • Depictions of fear of dying (e.g., as a result of stomach pains) or being killed 	Supernatural, superstitious and death themes may reflect bizarre themes or episodic disorganisation Sudden, unusual themes out of context to code under disorganisation	Religious and spiritual concerns are prominent in the culture; dreams are often seen to indicate a parallel spiritual world that usually has negative forces Death is much more prominent in the Ghanaian cultural milieu
Cultural difference in language expression, or language fluency	<ul style="list-style-type: none"> • Meaning of certain terms unclear (e.g., <i>"beat"</i> seems to refer to physical discipline and not abuse; <i>"quiet"</i> to describe feelings may have more negative connotations) • Use of the word "someone" to mean the other doll (at least sometimes) 	Coder may take a different connotation or meaning from certain terms and phrases, despite sharing the same language	