The Meaning of The Child Interview (MotC) – The initial validation of a new procedure for assessing and understanding the parent-child relationships of 'at risk' families

Introduction

Reder and Duncan's studies in the 1990's of fatal child abuse highlighted the importance of looking at the ways in which parents construct a psychological model of their child and how this affects the parent-child relationship (Reder, Duncan, & Gray, 1993; Reder & Duncan, 1999). In extreme cases this can become distorted and dangerous, putting the child at risk of neglect and/or abuse:

> *It was as though the children had acquired an undeclared script or blueprint for their life that submerged their personal identity or personal characteristics, and this meaning came to dominate the parent-child relationship... The children became "actors in someone else's play."*

 (Reder & Duncan 1999 p.71)

This paper presents the first validation of a new procedure which turns the meaning of the child to the parent into a formal assessment tool that could assist practitioners working in these situations. It uses the established Parent Development Interview (PDI) protocol to interview parents about their child and then applies a new system of analysis (The Meaning of the Child Interview – MotC) that examines the ways in which parents talk about their child, their relationship with their child, and their parenting. The 'Meaning of the Child Interview' refers specifically to the system of coding (analysing and classifying) semi-structured interviews about the parent-child relationship, rather than a particular interview protocol such as the PDI. However, it is named as such to make its interview based method of assessing parents clear to all who might use it. The particular goal of the MotC is to illuminate relationships where the child's development is at significant risk, or require support from child care agencies for other reasons, in a way that facilitates intervention and decision making in these relationships. Arising out of clinical work and assessment of families in a Family Court setting in the UK, it has been designed with the needs and concerns of health and social care practitioners in mind. There is an increasing call for the use of evidence based approaches both in the assessment of children and families generally, and in the assessment of attachment specifically (Crittenden, Farnfield, Landini, & Grey, 2013), but for this to happen, procedures and methods of analysing them need to fit the context in which they are to be used. A fuller account of the theoretical background and contribution of the MotC is given elsewhere (Grey and Farnfield 2017); this paper gives an introduction to the contribution of the MotC, and then reports on the initial validation study of the procedure.

The Meaning of the Child Interview and the study of Representations of Caregiving

Attachment theory and research over the past 40 years has offered compelling insight into how the meaning of experience is transformed by the need to organise a response to threat (Crittenden, 2016; Farnfield,

Hautamäki, Nørbech, & Sahhar, 2010). Evolution has led to the capacity of the human brain to transform information about past experience into information that will help the individual stay safe in the present:

> *The only information we have is information about the past, whereas the only information we need is information about the future. …. That is, we take in sensory information about the present, but we give it meaning on the basis of what we know from the past. That meaning organizes our behavior. (Crittenden, 2016 p. 91, author emphasis)*

A means of assessing information processing was the ground breaking Adult Attachment Interview (AAI: George, Kaplan, & Main, 1985; Main & Goldwyn, 1994). The basic premise of the AAI is that coherence of speech about early experience is a direct window onto coherence of mind regarding the same topics, a coherence that has found to be related to security in wider relationships and in parenting (Hesse, 2008). The remarkable ability of the AAI to use parents' discourse to predict a child's security of attachment even before the child is born (Fonagy, Steele & Steele 1991), has led many researchers to look at whether this kind of discourse analysis could also be applied to how parents talk and think about their child in parenting interviews. A number of useful existing interview protocols have been developed to explore this, for example the Parent Development Interview (PDI: Aber, Slade, Berger, Bresgi, & Kaplan, 1985), the Working Model of the Child Interview (Zeanah, Benoit, & Barton, 1986), and the Caregiving Interview (George & Solomon, 1988).

The particular contribution of the Meaning of the Child is that it offers a dyadic, relationship-specific way of looking at how parents understand their children, avoiding categorising parents according to concepts relating to an attribute that is primarily the parent's alone, such as the parent's attachment pattern (e.g. the Caregiving Interview: George & Solomon, 2008). Likewise, the Parental Reflective Functioning (RF) scale (Slade et al., 2005), the most commonly used method of analysing the Parent Development Interview (PDI), was developed to apply the method first developed by Fonagy's and colleagues for the AAI (Fonagy, Target, Steele, & Steele, 1998) to assess an adult's ability to think about mental states of themselves and their childhood relationships. Although the Parental RF scale applies the method to an interview about a particular parent-child relationship (the PDI), the classification system almost entirely looks at mentalising as a general trait rather than offering a window to the nature of the parent-child interaction. These approaches offer important constructs, but they contribute to the shared care environment experienced by all children in a particular family, and so cannot explain or differentiate specific parent-child relationships within the same family, or examine the roles differing children might play in a particular family and how these might affect their attachment relationships (Grey and Farnfield 2017). This is important both to those assessing families in the context of child protection, where one or some children may be more at risk than others in a family (Reder & Duncan, 1995, 1999), and to clinicians who want to intervene in particular relationships, and so want to understand how that relationship functions.

There is an inherent tension between the aim of researchers, who create procedures to add to generalised knowledge and understanding, and that of clinicians who wish to illuminate specific relationships using procedures and theoretical constructs that have generalised validity (Farnfield 2014). For this reason, many attachment procedures developed for research purposes tend to offer scores that assess a level of psychological risk rather than explain what is going on in specific dangerous relationships (e.g the Parenting Roles Interview: Bifulco, Moran, Jacobs, & Bunn, 2009, and the Parental RF scale in the PDI: Slade et al., 2005). Alternatively, they contain one 'at risk' category; which in this context is commonly associated in some way with 'disorganised attachment', following Main and Solomon's understanding that children who were afraid of their parents, could not 'organise' a coherent pattern of self-protection (Main and Solomon 1990). A single category of this kind cannot systematically differentiate between different 'risky' relationships in clinically useful ways, for example, the 'distorted' category of the Working Model of the Child Interview (WMCI: Zeanah, Benoit, Hirshberg, & Barton, 1986). That said, this interview has a fruitful history of clinical use, without the need for its formal coding system (Larrieu, Stevens, & Zeanah, 2014; Zeanah, 2007). The reason for developing the MotC has been to devise a means of analysing parental discourse or speech patterns that cannot only identify risk in specific parent-child relationship, but also illuminate and differentiate different kinds of relationships where the child's development may be prejudiced, so as to inform clinicians working with families, or child protection professionals deciding upon an appropriate intervention. A better fit between procedure and clinical need, might pave the way for the increased use of evidence based procedures to assess relationships in the health and social work field, rather than the over-reliance on ad-hoc observations without any common conceptual framework (Crittenden et al. 2013).

The Meaning of the Child Interview

Parents are interviewed using the established Parent Development Interview (Aber, Slade, Berger, Bresgi, & Kaplan, 1985), or equivalent, and the transcript of the interview is then analysed using the new coding system that identifies the pattern of interaction inherent in the relationships and likely risk to the child. The coding system looks for patterns in the way a parent talks about their child and parenting, rather than seeking to score answers to specific questions, and so other parenting interviews can be used.

In particular, the interviews are classified for the degree to which the parent-child relationship can be seen as **Sensitive** (mutually pleasurable to parent and child, and supportive of the child's development), **Unresponsive (**psychologically distant from the child), or **Controlling** (psychologically intrusive towards the child). These classificatory constructs were initially drawn from Crittenden's CARE-Index (Crittenden, 2010, Hautamäki, 2014), a measure of parent-child face-to-face interaction, analysed from short video clips of free-play. The CARE-Index classifies the parent's *behaviour*, from how it is judged to be experienced by the child (and vice-versa), and the MotC takes this relationship-specific understanding into its assessment of how the parent *thinks* about the child. The MotC also draws its understanding of psychological risk to the child arising from the parent-child relationship from the CARE-Index, in that risk is present to the degree that Sensitivity is lacking. Where dyads are classified as being in the 'Intervention' category, the problem in the relationship is to some extent recognised by the parent, who is not completely lacking in empathy for the child. As a result, the

dyad may be amenable to more commonly available parent support and intervention programmes that assume a level of self-reflective capacity. The patterns of interaction that fall in the 'High Risk' range, are thought to involve significant psychological distortion that would commonly require in-depth psychological therapy or support to shift. By contrast, whilst relationships classified as 'Adequate' or 'Sensitive' would not normally require clinical intervention, the distinction allows practitioners to identify, and help maintain, strong relationships in a particular family. In addition, it gives some ability to perceive strengths and areas of potential concern in relationships that are currently functioning adequately, but where there be reason to believe that problems could arise in the future, especially if practitioners have identified factors 'outside' of the dyad that might negatively affect the relationship.

The interpretation and classification of the interview makes use of the system of discourse analysis used to interpret the Adult Attachment Interview (AAI), specifically Crittenden's Dynamic Maturational Model or DMM-AAI (Crittenden & Landini, 2011). In particular, in its methodology, the MotC draws upon Crittenden's use of Memory Systems theory (Schacter and Tulving 1994) to develop Bowlby's work upon unconscious and conscious defensive information processing (Bowlby, 1982). The MotC follows Crittenden's DMM-AAI in requiring discrete evidence from different Memory systems in order to make a classification. Specifically, these are Procedural memory (preconscious, learned behaviours, that have become automatic); Imaged memory ('images' containing sensory information); Connotative language (the use of language to influence the emotions of self and others); Semantic memory (conscious, generalised understanding of how relationships operate); Episodic memory (the ordering of specific experience into coherent 'episodes' or incidents); and 'Reflective Integration' (the identification and correction of discrepancy and error). As with the DMM-AAI, the use of memory systems theory allows distortion of information to become apparent; the discrepancy between how the parent views the relationship, and unconscious or unintegrated feelings, perceptions and 'beliefs' that the parent cannot, or cannot fully, attend to.

However, the MotC is not simply trying to discover the parent's self-protective strategy (i.e. their own attachment pattern as assessed by the AAI) in the context of a parenting interview. By using constructs drawn from a procedure that measures face-to-face interaction (the CARE-Index), the patterns of the MotC are instead seen as the result of a developing 'collaborative conversation' between parent and child (Beebe, Lachmann, Markese, Buck, et al., 2012; Beebe, Lachmann, Markese, & Bahrick, 2012; Lyons-Ruth, 1999). Although only the parent's discourse is directly assessed, aspects of that discourse are presumed to emerge out of the ongoing 'conversation' of the dyad, and so reflect the nature of the 'connection' between the parent and the child. It can therefore illuminate the relationship as a whole, not simply give information about the mind of the parent. It is true that the child is not present in the assessment, and therefore aspects of the relationship may be missed (the MotC is not intended to replace the CARE-Index or child attachment procedures). However, by the same token, in being able to illuminate the relationship through critically examining how the parent perceives their behaviour within it, the MotC gives information about how the parent's behaviour functions both within the parent-child relationship and the parents' wider relationships. This can only be assumed from face-to-face observational procedures such as the CARE-Index. The

combination of both approaches enables particular parent-child relationships to be illuminated in often powerful, and clinically useful ways, and especially those of families who have experienced danger or had traumatic experiences.

Establishing the Validity of a New Measure

Construct Validity

Arguably the most critical test of a new procedure is whether it is actually measuring the 'thing' (or 'construct') it is designed to assess. This study proposes to assess the construct validity of the MotC by assessing its correlation with the CARE-Index, as the procedure uses comparable constructs, albeit drawn from parent-child interaction rather than parental discourse. There are more than 40 publications supporting the validity of the CARE-Index (see Farnfield, Hautamäki, Nørbech, & Sahhar, 2010 for a review). Put simply, the study sought to test whether it was possible to predict the nature of face-to-face interaction observed in the CARE-Index, from the way the parent spoke about the child in a parenting interview, using the MotC. As the constructs of the CARE-Index (of Sensitivity, Control, and Unresponsiveness) are related to how the behaviour observed is deemed to function within the parent-child relationship, it is argued that patterns of thinking are implied. The MotC is an attempt to identify how these patterns of thinking are evident in parental discourse. The hypothesis of the study therefore, is that the two procedures conceptually mirror each other: the CARE-Index assumes the MotC patterns of thinking in its functional understanding of observed behaviour; the MotC assumes the CARE-Index patterns of behaviour in its functional understanding of parental discourse and thinking. Congruence between the two procedures is therefore considered evidence of construct validity.

External and Discriminant Validity

The need to establish the extent to which information gained from the procedure can be generalised beyond its immediate context necessitated the use of two very different samples, separated by both risk status (normative, and 'at risk'), but also culture and nationality (see below). What is important for validity is that the measure can both discriminate between sensitive relationships and those carrying some psychological risk, in both samples, as well as discriminate appropriately between the samples as a whole.

In addition, and unusual in the context of validation studies of similar measures, the question of whether the results can be generalised to fathers is considered by way of their inclusion in the 'at risk' sample. Whilst for some, a focus on the caregiving system as a construct necessitates perhaps mothering to be looked at separately (e.g. George & Solomon, 2008); here, the 'meaning of the child' seen in the context of self-protection, gives no reason to exclude fathers from the study. As Crittenden notes in relation to the CARE-Index (Crittenden 2010), it is not presumed that the developmental effect upon the child of the father's MotC classification will be the same as the mother, as among other things, this will clearly depend on the nature of the parent's involvement with child, a question beyond the remit of this study.

Hypotheses

The essential idea of this study is that the classifications derived from the MotC will correlate with the quality and nature of the parent's face-to-face relationship as assessed by the CARE-Index, and be shown to discriminate risk and sensitivity in parent-child relationships. The study's hypotheses were as follows:

1. Parental Sensitivity/Risk as measured by the MotC will have a significant correlation to parental Sensitivity as measured by the CARE-Index.

2. The relationship pattern as classified by the MotC will have significant correlations with the Care-Index scales for Control and Unresponsiveness.

3. The correlations between the MotC and the CARE-Index will hold for fathers as well as mothers.

4. The Sensitivity/Risk classification in the MotC will clearly distinguish the 'at risk' group from the normative sample.

Method

Sample

The study was comprised of 85 parents and children, aged 0 – 3 years, including children from 'at risk' and 'normative' populations (62 children and 23, respectively, see Table 1, below).   Where parents had more than one child the youngest child was the focus of the study (for the purposes of easy comparison with the CARE-Index, see also below).

Table 1: Sample size and gender:

[insert here]

The 'Meaning of the Child' coding system was developed whilst the first author led a multi-disciplinary team carrying out assessment and intervention in cases of child protection. Over a period of 4 years (2009 - 2013) a sample of 'at risk' families was collected, comprising of 62 parents of children aged 0-3 years who were being assessed in regard to perceived risk in their parenting by the Family Courts.

36 of this sample were mothers, and 26 fathers. The sample included parents who were being assessed in the agency's Residential Centre, where they lived with their children for up to 12 weeks whilst an assessment were completed, and those who were assessed on a day basis (in some cases with their child living in foster care). These parents came from the East Midlands, in the UK. Most were white, and from an urban, economically disadvantaged population. 30 of the parents in this sample were heterosexual couples (15 couples), the rest were single parents. Most commonly, the parents were being assessed in relation to their youngest child;

having in many cases had older children removed by the Family Court system; too few cases existed with more than one child present for meaningful analysis.

In addition, a normative sample was identified, consisting of 22 first time mothers in Texas, US, who were part of a study which predominantly focussed upon the use of the Adult Attachment Interview (AAI) and brain imaging (Strathearn, Fonagy, Amico, & Montague, 2009; Strathearn, Li, Fonagy, & Montague, 2008). This sample had no involvement with statutory services. The sample was again mainly white, but drawn from a university population, coming mostly from educated, 'middle class' families. There is therefore a likely gap in social and economic status between the samples, but there was insufficient data to analyse this. 1 UK normative mother and infant was added from an interview supplied by a course participant as part of their training, in order to expand the sample.

Assessment Procedures

Each family were administered two procedures that are of relevance to this study. Other measures, such as the AAI, were used with some families and contributed to the development of the MotC, but are not discussed here. These are:

1. **The Parent Development Interview** (Aber et al., 1985) was given to the child's primary caregiver (both parents where possible in the risk sample). The PDI is a semi-structured interview of approximately an hour's length, that asks a parent about their perceptions of the child, their relationship with the child, their perceptions of their own parenting, as well as the parent's experiences of being parented. The MotC coding system can be used with other interview protocols, but the PDI was selected for its clinical usefulness, and ability to compare the MotC with the RF scale (reported on elsewhere, Grey 2014), which measures a parent's ability to understand behaviour in terms of underlying mental states.

2. **The CARE-Index**, both infant and preschool child versions, (Crittenden, 2010) were undertaken between the child and the parent(s) who gave the Parent Development Interview (PDI). The CARE-Index involves a 3-4 minute video of the parent playing with their child 'as they would normally do'.

Data Collection

The normative sample was recruited specifically to be part of a study of parent-infant relationships and adult security. The CARE-Indexes were carried out when the baby was aged between 4-11 months. The PDI interviews were conducted when the infant was aged between 7 and 23 months, usually 4-5 months after the CARE-Index screening. The procedures were carried out by interviewers administering a number of different procedures that are reported on elsewhere in the work of Strathearn et al.(2008, 2009).

The risk sample reflected referrals to the agency over a 4-year period, that were considered suitable for inclusion in the study in terms of the nature of the referral (as part of family court proceedings regarding the care of children), the ages of the children, and the particular procedures used in the assessment. In the case of parents who were being residentially assessed, the CARE-Index videos were conducted within two weeks of

arrival at the Centre. The PDI was carried out following the CARE-Index, up to 4 weeks from the commencement of the placement. For the parents who were being assessed in the Day Assessment Service, the CARE-Index was carried out either the same day, or the day after the PDI was taken. In both cases, the procedures were part of wider assessment being carried out with the family to inform the Family Courts; the parents were being assessed regarding their care of their children, and the procedures that inform this study were part of that assessment.

Coding and Inter-rater Reliability

All the Parent Development Interviews in the study were coded by the first author using the MotC coding system, blind to the classification of the CARE-Indexes, which were coded separately by reliable coders, blind to the MotC results. 10 CARE-Index videos (12% of the sample) were blind double coded. Inter-rater reliability was found to be statistically significant at the 0.05 level (pearson's correlation coefficient for Sensitivity/Risk: 0.648, $p < 0.05$), and differences were resolved by discussion.

The development of a new measure required both to teach and demonstrate the reliability of the procedure, as well as produce reliable data for comparison with the CARE-Index. In order to demonstrate reliability of the MotC, it was necessary to develop both a reliability test (and teach the practitioners who would undertake it), and have a proportion of transcripts blind-double coded. With an entirely new procedure, there is a circularity in this process, in that reliable data is needed to establish the reliability of those who would code the measure, but reliable coders are needed to establish the reliability of the data.

This difficulty was addressed in three steps. Firstly, a series of training courses were developed, beginning in 2011. Participants were social work and mental health professionals, most of whom had no formal training in any attachment measure.

Following on from this, 6 Interviews from the risk sample (10% of the sample) were used as part of a Reliability test of 10 transcripts, where practitioners learning the procedure classify them to an agreed standard. Because the normative sample could not be used for this purpose because of consent issues, 4 other transcripts needed to be added to ensure an representative test. Reliability was achieved by either a pearson's correlation coefficient of above .70 ($p < 0.05$), in relation to Meaning of the Child Sensitivity/Risk classification. In addition, 70% or above identification of the main 'negative' patterns (i.e. the level of Unresponsiveness and Control) was required.   On the basis of 3-4 days of face to face training and the completion of practice transcripts, out of 16 clinicians with no prior knowledge of the MotC before the course, 10 achieved these standards, and a further 3 were reliable in relation to either risk or pattern identification, but not both. The highest coefficient achieved by a coder whose only experience of the Meaning of the Child has been through the course, has been 0.947 ($p < 0.000$) together with a 90% identification of the correct pattern, although most fell below that level of correspondence. As this level of training is minimal, given the level of skill required to teach the method of discourse analysis used by the procedure, these results are encouraging and suggest that the procedure is teachable. As a comparison, the DMM-AAI, which has a comparable methodology, requires a

minimum of 18 days face-to-face training, in addition to prior training on attachment theory, and subsequently on more complex patterns.

Next, 11 interviews drawn from the normative sample (approximately 45% of this sample, 13% of the sample as a whole) were blind coded by a trained and already reliable coder, and differences were resolved by discussion. Statistically significant inter-rater correlations (using pearson's r), were found for Sensitivity/Risk (coefficient = 0.76, p < 0.01), Control (coefficient = 0.65, p < 0.05), and Unresponsiveness (coefficient = 0.69, p < 0.05).

This methodology echoes the two-stage process used by other new procedures (e.g. Solomon, George, & De Jong, 1995), in their validation of their attachment story stem procedure) with the addition of the initial step of developing a teaching programme involving practitioners with no prior training, to establish the teachability of the procedure as part of the study.

Statistical Analysis

The critical part of the study involves the establishment or otherwise of the first 3 hypotheses through examining the correlations between the CARE-Index and the MotC. However, whilst the MotC uses both the risk ranges (High Risk, Inept, Adequate, and Sensitive) and the pattern constructs of the CARE-Index (Unresponsiveness, Control, and Sensitivity) it does not 'score' them in the precisely the same way. The CARE-Index has a numerical scoring system that is derived from professional judgement as to the patterns being observed in the free play between parent and child. Essentially, through the identification of patterns observed across various different aspects of the interaction, using a manualised system (Crittenden 2010), a total of 14 points are allocated between the patterns of Sensitivity, Unresponsiveness and Control. Thus, although separate scores for the three patterns are arrived upon, they are dependent variables – more Sensitivity means less Control and/or Unresponsiveness, and so on. The level of risk is determined by the range in which the Sensitivity score resides: i.e. a score of 0-4 is classified as High Risk, 5-6 as Inept, 7-10 as Adequate, and 11-14 as Sensitive (see Figure 1 below).

The MotC was developed to reflect this thinking, but without translating the patterns into 'scores'. A level of Risk/Sensitivity, called 'Sensitive', 'Adequate', 'Intervention' (equivalent to 'Inept' in the CARE-Index), and 'High Risk' is identified from the interview, based on the extent to which there is either a clear Sensitive pattern or a clear 'negative' pattern (Unresponsiveness, Control, or Unresponsiveness *and* Control), or a combination of both. Interviews are placed in the High Risk range, where the 'negative' pattern severely distorts the meaning of the parent-child relationship (or the child's experience). There are borderline categories for interviews that do not quite fit these boundary markers.

For the purposes of statistical analysis, therefore, the 'Meaning of the Child' Sensitivity/Risk classification was translated into a numerical scale from 1-7, so that it could be statistically compared to the Sensitivity (Synchrony) scale of the CARE-index (which is a scale of 0 – 14, where 0 corresponds to the highest risk, and 14, the most sensitive). The relation between the procedures is illustrated in Figure 1 below:

MotC Risk/Sensitivity	
7: Sensitive	
6: Sensitive/Adequate (High Adequate)	
5: Adequate	
4: Adequate/Intervention (Low Adequate)	
3: Intervention	
2: Intervention/High Risk	
1: High Risk	

CARE-Index Synchrony Ranges / Sensitivty Scores	
Sensitive	Sensitivity: 11-14
Adequate	Sensitivity: 7-10
Inept	Sensitivity: 5-6
High Risk	Sensitivity: 0-4

Figure 1: MotC Risk/Sensitivity vs. CARE-Index Synchrony/Sensitivity

The relationship between the MotC classification of Risk/Sensitivity and the ranges identified by the CARE-Index are depicted visually above. Although the constructs are comparable, they are derived in differing ways. The MotC borderline categories mean that the MotC classifications cannot simply be translated into equivalent CARE-Index scores or vice-versa.

Spearman's rho was used to calculate the correlations because the data was non parametric, and the distance between the variables was not comparable.

In addition to a level of Sensitivity/Risk, the MotC identifies a main pattern of interaction from the interview. There are 7 possible MotC patterns, which are: **Sensitive; Sensitive (Controlling)**; **Sensitive (Unresponsive)**; **Sensitive (Unresponsive and Controlling); Controlling**; **Unresponsive**; **Controlling and Unresponsive**. The MotC's identification of a 'main pattern' rather than a scale makes the comparison required by the second hypothesis problematic.

However, although these classifications may appear discrete (entirely separate) categories that should therefore be treated as categorical variables, this appearance is misleading. Risk and patterning are dependent upon each other, as the extent of the 'negative' patterns is in inverse proportion to the interview's Sensitivity. As with the CARE-Index 'scores', higher Sensitivity in the relationship means less Control and Unresponsiveness and vice versa. Similarly the 'Unresponsive and Controlling' pattern means that the negativity in the relationship is 'shared' between Control and Unresponsiveness (for example, incorrectly classifying 'Unresponsive and Controlling', when the better classification is in fact 'Controlling', is, crudely speaking, 'half' right).

For this reason, the Meaning of the Child classification was considered to imply a scale for levels of Unresponsiveness and Control, albeit with a much smaller range than the 14-point scale of the CARE-Index. Where the Meaning of the Child Sensitivity/Risk was coded Sensitive or Sensitive/Adequate, then the interview

was coded 0 for Control and Unresponsiveness for the purpose of analysis. Where the interview was coded as Adequate or Adequate/Intervention (and so a partial 'negative' pattern was identified) then the interview was scored 1 for Control or Unresponsiveness (or 0.5 for each, in those interviews with a partial 'Unresponsive and Controlling' pattern). Where the interview was coded as Intervention or High Risk then it was scored as 2 for Control or Unresponsiveness, or 1 for both, depending on the negative pattern identified by the interview. Thus the 7 patterns listed above can be represented as a scale, with the available 'points' divided between Sensitivity, Unresponsiveness and Control, as is the case in the CARE-index:

- **Sensitive:** *Sensitivity 2, Control 0, Unresponsiveness 0*

- **Sensitive (Controlling):** *Sensitivity 1, Control 1, Unresponsiveness 0*

- **Sensitive (Unresponsive):** *Sensitivity 1, Control 0, Unresponsiveness 1*

- **Sensitive (Unresponsive and Controlling):** *Sensitivity 1, Control 0.5, Unresponsiveness 0.5*

- **Controlling:** *Sensitivity 0, Control 2, Unresponsiveness 0*

- **Unresponsive:** *Sensitivity 0, Control 2, Unresponsiveness 0*

- **Controlling and Unresponsive:** *Sensitivity 0, Control 1, Unresponsiveness 1*

This conversion of MotC patterns into scales allowed for comparison between Unresponsiveness and Control in the MotC and the CARE-Index, as well as inter-rater reliability correlations to be calculated, again using Spearman's rho, for the same reasons.

This same data was then used to produce correlations for mothers and fathers (Hypothesis 3), in the risk sample only, as the normative sample only contained mothers. The fourth hypothesis, concerning the ability of the MotC to differentiate between the two samples, was examined via comparing the distribution of risk status between the samples.

Table 2 sets out the descriptive statistics for both the CARE-Index and the MotC variables used in the study.

Table 2: Descriptive Statistics

[Insert Table 2 here]

Results

The full statistical examination of the 4 hypotheses, is outlined below:

1. **Parental Sensitivity/Risk as measured by the MotC will have a significant correlation to parental Sensitivity and risk as measured by the CARE-Index.**

A statistically significant Spearman's correlation between CARE-Index sensitivity and 'Meaning of the Child' (MotC) Sensitivity/Risk was found in the sample as a whole. This can be seen in *Table 3* below:

Table 3: MotC vs. CARE-Index correlations by sample and gender

[Insert table 3 here]

2. **The relationship pattern as classified by the MotC will have significant correlations with the Care-Index scales for Control and Unresponsiveness.**

Statistically significant correlations were found between both Control and Unresponsiveness in the MotC and the CARE-Index (*Table 3*). It was also the case, when each sample is compared, that the statistically significant correlation was observed in the Risk sample, but not in the Normative.

Similarly, a statistically significant relationship between the Unresponsiveness in the MotC and the CARE-Index was found. As with Control, the relationship is stronger in the 'at risk' sample than in the normative, where the correlations were not found to be significant.

3. **The correlations between the MotC and the CARE-Index will hold for fathers as well as mothers.**

A statistically significant correlation between the Sensitivity/Risk scale of the MotC and parental Sensitivity in the CARE-Index was found for fathers as well as mothers, across both samples *(Table 3)*. Because the normative sample had no fathers, the correlations for gender are given for the risk sample only. The results for mothers and fathers for both Control and Unresponsiveness in the MotC and the CARE-Index were also found to be significant at the 0.01 level.

4. **The Sensitivity/Risk classification in the 'Meaning of the Child' will clearly distinguish the 'at risk' group from the normative sample.**

This was first examined by comparing the relationships judged as normally functioning or at risk in each sample. In the MotC Risk/Sensitivity scale, scores of 4 (Adequate/Intervention border) or above were considered to describe 'normally functioning' relationships (labelled '*Functioning*' in *Table 4* below), and those of 3 (Intervention) or below, were considered at some level of psychological risk (labelled '*Struggling*' in *Table 4*).

Table 4: Distribution of MotC Risk status by Sample

[insert table 4 here]

The table shows a clear difference in the level of risk in each sample.   The level of psychological risk in the normative sample is somewhat higher than might have been expected, raising fears that the MotC might overestimate risk (see discussion below). However this is also reflected in the CARE-Indexes carried out with this sample. This can be seen by comparing the mean Sensitivity/Risk scores for this sample in both procedures (Table 5), as a directly comparable version of Table 4 using the CARE-Index scores was not possible (because of the MotC's borderline categories are not directly translatable to CARE-Index scores). Like the MotC, the CARE-Index mean Sensitivity of the normative sample was situated on the borderline between Adequate and Inept (Intervention in the MotC): 6.96 (on a scale of 1-14, where a Sensitivity score of 6 is in the Inept range, and 7 is in the Adequate range), compared to 4.04 on the MotC where 4 is the borderline between Adequate and Intervention (Inept).

Table 5: MotC and CARE-Index Mean Sensitivity and Standard Deviations for the Normative Sample

[insert table 5 here]

<u>Limitations</u>

This is an initial validation study, arising from a particular clinical setting and the study inevitably has its limitations.

Stability of the MotC was beyond the remit of this study. In some clinical cases, a follow up parenting interview (different from the PDI) was used and coded using the Meaning of the Child system up to a year after the initial interview. Insufficient data exists to study this formally, but this limited experience suggests that basic patterns remain stable, but sensitivity/risk may vary in response to therapeutic intervention and environmental change. This will be subject of future research.

The use of very diverse samples to compare normative with 'at risk' interviews prevents one being truly a 'control' for the other.   The differences between the samples in nationality and economic background is a weakness of the study, given that other issues separate the two samples beyond their risk status. However, again it would take further research, where there was sufficient demographic information to study its influence statistically (something beyond the remit of this study) to establish this. At the same time, the

congruence with the CARE-Index in these two diverse settings, at least suggests that the procedure is 'generalisable'.

The make-up of the total sample avoids the problem that most new attachment related measures have been developed on small middle-class samples and generalised to situations of risk (a point made by Shmueli-Goetz, Target, Fonagy, & Datta, 2008); see for example, Solomon her colleagues validation study of their story stem procedure as an example (Solomon, George, & De Jong, 1995). The overall sample size (85) is consistent with similar validation studies (e.g. George & West, 2001; Solomon et al., 1995, Crittenden, Claussen, & Kozlowska, 2007), although all of these are, relatively speaking, small-scale studies.

The lack of data about the nature and level of the father's role in caregiving means that it is not possible to see what the significance of the father's MotC results might be on the child's development.

Similarly, this study did not have the data to analyse the relationships of different children in the same family, something that the MotC has been developed to do. However, the comparison with the CARE-Index, an already validated dyadic procedure that assesses particular relationships rather than generalised parental traits (see above) is a step forward in this regard, even if further research is suggested.

Finally, although the patterns and understanding of risk in the CARE-Index are conceptually related and directly comparable, the way in which classifications are arrived at are, self-evidently, different. This necessitated the 'conversion' of the MotC classifications into scales that could be compared with the CARE-Index. In the MotC, Risk/Sensitivity is measured in a more finely tuned way (an implied 7 point scale), than is the case for Unresponsiveness and Control, which appear only as either a main pattern or a sub-pattern, and have been translated into a more simplistic scale (see above). This has meant that the statistical comparison of the MotC's classification of Unresponsiveness and Control, unlike that of Sensitivity/Risk, are based upon the ranking of a scale that contains only 4 possible values, which may have made significant correlations harder to achieve, particularly in the smaller, normative, sample. It also partially explains the lower correlations for these patterns, even where they were, nonetheless, statistically significant (see Table 3 and discussion below).

Discussion

The study demonstrated that it is possible to predict the nature of a parent's face-to-face relationship with their child (as measured by the level of Sensitivity in the CARE-Index, as well as the level of Unresponsiveness and Control) by the way in which the parent speaks and thinks about their child in the MotC.

The study also clearly showed the procedure's ability to distinguish between 'at risk' and normally functioning relationships. The issue is particularly pertinent, given the MotC's origin in clinical work with 'at risk' families, and the concern that this might skew the ability of the procedure to measure risk. It is true that the level of risk was relatively high in the normative sample. Whilst studies of adult attachment using the ABCD model would normally find figures of 15-20% risk in normative samples (Van IJzendoorn, 1995) as measured by the Disorganised categories (namely: Unresolved trauma and loss, and Cannot Classify), the measurement of risk does not precisely correspond to the MotC, and the Unresolved loss and trauma in the Adult Attachment

Interview is a poor predictor of risk in parenting (Madigan et al., 2006). Furthermore, Crittenden's model of attachment (the DMM) is predicated upon protection from danger, and so can over emphasise danger at the expense, for example, of exploration (Farnfield et al. 2010). This makes it highly tuned to differences in endangered populations, but may exaggerate risk in normative groups, which might account for the results for both the MotC *and* the CARE-Index.

A statistically significant relationship between the Unresponsive and Controlling patterns of the Meaning of the Child with the Unresponsive and Controlling patterns of the CARE-Index was found in the sample as a whole and in the 'Risk' sample, but the relationship was not found to be as strong as that for Sensitivity/Risk. The correlations for the normative sample were not found to be statistically significant (at the 0.05 level), when this sample was considered in isolation. Taken in conjunction with the different way in which the correlations for Unresponsiveness and Control were calculated from those for Sensitivity (see Limitations above), one explanation is simple and obvious: namely that 'negative' patterns may well be more evident and marked in samples where there is more psychological risk, than samples containing more sensitive dyads. In dyads with less risk, the difficulties in the relationship are more 'diffuse' and 'diluted', and so the differences between control and unresponsiveness was less clear in both measures. This problem may be exaggerated by the smaller size of the normative sample, something indicated by the fact that the problem disappears when the sample was considered as a whole. Only 7 out of the 23 parent-child relationships in the normative sample classified as 'Struggling' (Intervention or below, on the MotC), where these patterns should be more clearly defined. Therefore, it is unsurprising that greater significance was found for Sensitivity in the normative sample, and for the 'negative' patterns in the 'at risk' sample. The purpose of the negative patterns in the Meaning of the Child was and is to discriminate between different kinds of struggling relationships, and the data would suggest that the measure has achieved this.

It is also important to add that, to some degree, it is hoped that the MotC will transcend the CARE-Index in some areas, in the sense that it aims to access more in-depth information as to the psychological functioning of both the parent and the dyad than can be ascertained from face-to-face observation. Especially in cases of risk, it is hoped that discourse may reveal what parents and children might (consciously and unconsciously) actually be successful in 'hiding' from the naked eye, or even the eye assisted by video technology, especially over 1 brief interaction. For example, parents may be hostile, in terms how of they perceive him or her, but this may show itself in 'giving up' on the child (unresponsiveness) who is seen (put somewhat crudely) as 'too bad' for their attention. Alternatively, they may wish to withdraw from the interaction ('disappear' psychologically into unresponsiveness), but feel trapped by the need to care for their child. These parents may punish the child's demands for attention and interaction and so appear intrusive when videoed, even though their thinking about the child might be idealising, in the sense of an escapist fantasy. Therefore complete correspondence with the CARE-Index was not expected, especially in the most complex cases of risk. These two particular patterns are identified by the MotC (called Controlling Withdrawal, and Unresponsive-Rejecting, see Grey and Farnfield 2017), are hypothesised to create potential reversals in comparison with the video

parent-child interaction in the CARE-Index. Again, this has been observed clinically, but further research is needed to establish this.

In particular, if the MotC is hypothesised as, in some areas, exceeding the information provided by face-to-face procedures such as the CARE-Index, then it will need further research comparing its ability to make clinically relevant distinctions with that of these other procedures. This was the approach taken by Crittenden et al. (2007), who evaluated the ability of different measures of preschool attachment to discriminate between different levels of risk across multiple variables (in their case, maltreatment status, maternal sensitivity, child development, and maternal attachment strategy). By contrast, a study such as this one, which uses the *similar* ability of two procedures as a means of establishing the validity of one of them, cannot answer the question as to which of the two might better assist practitioners in understanding a particular parent-child relationship. Further information is needed to know whether or not the *differences* between the CARE-Index and the MotC are clinically significant, and if so what that significance might be.

Conclusion

This study provides initial evidence for the validity of the MotC. The clinical setting that provided most of the interviews for the study, whilst creating some of its limitations, also provided significant opportunities. Most currently available measures are validated within community settings, and then used clinically by practitioners within court settings without specific research in a comparable setting. This issue creates problems not just in validity but also the utility of these procedures for clinicians and practitioners. Some of these measures, in being developed to validate specific constructs or hypotheses, rather than help clinicians understand particular families, fail to deliver the kind of information that practitioners are looking for. In family court and child protection settings especially, clinicians are looking not just to identify risk (as it can be seen almost everywhere, given the endangered lives of most of the adults being assessed or supported), but to understand how specific 'risky relationships operate, so that better ways of intervening can be found. It is hoped that the identification of clinically relevant patterns of parent-child relationships *within* troubled families offers something of value to professionals who have the responsibility of intervening in these relationships, as well as a potentially rich opportunity for further research to illuminate the development of attachment relationships in a wider familial and social context.

Disclosures and Ethical Considerations

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