CHAPTER 7: STUDY OF THE VALIDITY OF THE PARENTAL EMPATHY MEASURE

A primary objective of this thesis is the development of a test instrument that will hold clinical and empirical utility in the child maltreatment domain. An essential undertaking in ascertaining the utility of any instrument is the process of empirical test validation (Aiken, 1997; Ferris & Norton, 1992; Schoenfeldt, 1984). Validity is best defined as the degree to which inferences from test results are supported on the basis of actual evidence (Aiken, 1997; Schoenfeldt, 1984). In the current study two tests of validity, one construct and the other concurrent, are applied to the Parental Empathy Measure (PEM). A third form of validation, that of content validity has been considered throughout the PEM's development and is briefly discussed below.

Content Validity

The process of content validation is considered an initial step in any test instrument development (Groth-Marna , 1984). Content validity refers to the degree to which individual items on a test instrument represent the qualities for which the instrument is designed to assess (Aiken, 1997). The PEM is designed to assess parental empathy based on a four-variable model of parental empathy.

Submission of the instrument to a panel of experts for judgement on the adequacy of the items is a recommended form of content validation (Aiken, 1997; Ferris & Norton, 1992; Groth-Marnat, 1984). Throughout its development, the model of parental empathy and the items designed to assess it have been the subject of consultations with a number of

child maltreatment experts, including both clinicians and researchers. Additionally, DOCS psychologists, as well as other psychologists and social workers experienced in working with distressed and abusive families, were involved in conducting the interviews in which the data were collected. Feedback gained from this process was instrumental in fine-tuning the PEM, especially the wording of individual items and prompts.

Tests of Construct Validity

Construct validity refers to the ability of an instrument to measure the theoretical trait or construct it is designed to assess (Aiken, 1997; Ferris & Norton, 1992). This process typically involves the use of independent and multiple data sources. One established method for assessing an instrument's construct validity is comparison of the instrument's results with another well-validated instrument that measures a trait or construct believed to be closely related to the theoretical issue under study (Aiken, 1997; Groth-Marnat, 1984; Schoenfeldt, 1984).

The PEM was designed to assess levels of parental empathy, a lack of which is purported to be the psychological basis of child maltreatment. As such, parental empathy should relate strongly to the level of child maltreatment risk. Further, if the model of parental empathy as proposed is sound, each of the four individual variables that compose the model, (i.e., attention to the child's signals, attributions, emotional responsivity and behavioural responsivity) should relate strongly to child maltreatment risk.

The Child Abuse Potential Inventory (CAPI; Milner, 1986) is perhaps the most commonly used and well-validated instrument of proneness to child maltreatment risk currently available (Miller & Hauser, 1989). The CAPI was designed primarily to assess

the risk of physical abuse in parents, but it has also been found to be useful in assessing

the risk of child neglect (Milner, 1986; 1994). Additionally, the CAPI child abuse scale has

been found to have positive relationships with such parental empathy-related factors as

impaired responsivity and rejection (Kolko, Kazdin, Thomas, & Day, 1993; Schellenbach,

Monroe, & Merluzzi, 1991). The first two predictions of this study, therefore, were that

the individual PEM empathy variables and parental empathy overall are negatively related

to child abuse potential.

The CAPI Abuse scale comprises six subscales, five of which can be considered to

assess levels of distress, unhappiness, and problems in relationships. The sixth scale

(Rigidity) is designed to assess rigidity of thinking towards children (Milner, 1986).

Conceptually, a deficit of parental empathy would most likely be evident as rigidity of

thinking towards children. Thus, a third prediction of the current study was that parental

empathy overall is strongly and negative related to the CAPI Rigidity subscale scores.

An important aspect of assessment of risk for child maltreatment is the

identification of false responding, and in particular, false responding that includes biases of

socially desirability. A Faking Good scale has been incorporated in the PEM specifically to

address this problem. For the same reason, the CAPI also includes a Lie scale. A positive

relationship between the scores of the Faking Good scale of the PEM and the Lie scale of

the CAPI would thus be expected and was the fourth prediction of this study.

Test of Criterion Prediction (Concurrent) Validity

Criterion prediction validity is concerned with the accuracy of the test or

instrument to predict the target criterion. This most usually involves an assessment of the

capacity of the instrument to predict the independently measured target criterion (Groth-Marnat, 1984; Schoenfeldt, 1984).

The assessment of criterion prediction validity may take two forms, concurrent and future. Predictive validity refers to the capacity of the instrument to predict criterion performance levels at a time in the future. Concurrent validity refers to the instrument's capacity to predict current criterion performance levels or diagnosis of existing status (Aiken, 1997; Groth-Marnat, 1984).

Clearly, the target criterion or status in the current analysis is the risk of child maltreatment in parents. If the PEM is to have clinical utility it must demonstrate the capacity to differentiate individuals who are likely to maltreat their children from those who are not likely to, both currently and in the future. A prospective assessment of the PEM's future predictive validity was beyond the scope of the current projection although in two cases PEM predictions of future abuse were later confirmed (see Chapter 10: Exploratory Qualitative Analyses and Case Studies). An assessment of the PEM's concurrent validity was, however, a key objective of the current study.

If, as has been argued, the core issue of child maltreatment is a deficit of parental empathy, and the PEM is a true measure of parental empathy, then the PEM should demonstrate concurrent validity by discriminating between maltreating and non-maltreating parents. Thus, the fifth prediction of the current study was that the PEM accurately discriminates between abusive parents, distressed parents, and matched controls.

Further, if parental empathy is the core issue in distinguishing between maltreating and non-maltreating parents, then it would be expected that the PEM would prove an even

more efficacious predictor of abuse status than the CAPI. Thus, a sixth prediction of the current study was that the PEM discriminates abuse status more effectively than the CAPI.

Hypotheses

To recapitulate, the hypotheses of this analysis are:

Hypothesis 1(a) There is a significant negative relationship between child abuse potential (as measured by the CAPI Abuse scale) and each of the individual PEM parental empathy variables (attention to signals, attributions, emotional responsivity and behavioural responsivity).

Hypothesis 1(b) There is a significant negative relationship between the total empathy score as measured by the PEM and child abuse potential measured by the CAPI Abuse scale;

Hypothesis 1(c) There is a significant negative relationship between the PEM variable subscale scores, the total empathy scores and the Rigidity scale scores of the CAPI;

Hypothesis 1(d) There is a significant positive relationship between the CAPI Lie scale and the PEM Faking Good scale.

Hypothesis 2(a) The PEM will discriminate abuse status between the abusive, distressed and matched control participants.

Hypothesis 2(b) The PEM will discriminate abuse status between the abusive, distressed and matched control participants more effectively than the CAPI.

Results

In accordance with Milner's (1986) instructions, participants found to have elevated CAPI Lie scale scores and non-elevated Abuse scale scores were omitted from the assessment of correlations between the CAPI Abuse and Rigidity scales and the Parental Empathy variables. However, no partic pants were omitted from the assessment of the relationship between the Faking Good and Lie scale (see Appendix Q: Group and Sample Means for Computed and Other Variables, for mean scale scores for risk-status groups and for the overall sample).

Construct Validity Analyses

Construct validity relationships were assessed by calculating Pearson's correlations.

Under hypothesis 1(a), it was ex pected that the CAPI Abuse scale would correlate negatively with each of the four PEM parental empathy variables; total attention to signals, attributions, emotional respor sivity and behavioural responsivity. Pearson correlation coefficients (r) were computed for each of the relationships. A weak negative correlation was identified between the CAPI Abuse scale and Signals ($r = -.22$, $p = .024$), with 5% of shared variance in the scores. Moderate negative correlations were identified between the CAPI Abuse scale and each of the three remaining empathy variables: Attributions ($r = -.41$, $p < .001$), with 17% of shared variance in the scores; Emotional Responsiveness ($r = -.52$, $p < .001$), with 27% of shared variance in the scores; and Behavioural Responsiveness ($r = -.41$, $p < .001$), with 17% of shared variance in the scores. These correlations are summarised in Table 3. Thus, Hypothesis 1(a) had support

as each of the individual empathy variables comprising the total PEM empathy shared a significant negative relationship with the CAPI Abuse scale. With the exception of Signals, all these relationships were moderate correlations.

Under hypothesis 1(b) it was expected that the CAPI Abuse scale would correlate negatively with the total PEM empathy score. A moderate negative correlation was found between the PEM total score the CAPI abuse scale (r = -.48, p < .001), with 23% of shared variance in the scores. Thus, Hypothesis 1(b) is supported as the total PEM had a significant negative relationship with the CAPI abuse scale.

Table 3: Correlations between selected PEM and CAPI variables

PEM variable	CAPI Abuse Scale	CAPI Rigidity Sub-scale
Signals	-.22[*]	-.55[***]
Attributions	-.41[***]	-.61[***]
Emotion	-.52[***]	-.43[***]
Behaviour	-.41[***]	-.50[***]
PEM Total	-.48[***]	-.59[***]

[*]p < .05; [***]p < .001. N = 86

Hypothesis 1(c) predicted that the total PEM empathy score and the individual PEM empathy variable scores would each have negative relationships with the CAPI Rigidity scale. These correlations are summarised in Table 3. The CAPI Rigidity scale was moderately and negatively correlated with total PEM empathy (r = -.59, p < .001), with 34% of shared variance in the scores. Additionally, there were moderate negative correlations between the CAPI Rigidity scale and each of the individual empathy variables: attention to signals (r = -.55, p < .001), with 30% of shared variance in the scores;

attributions (r = -.61, p <.001), with 3 7% of shared variance in the scores; emotional responsiveness (r = -.43, p < .001), with 18% of shared variance in the scores; and behavioural responsiveness (r = -.50, p < .001), with 25% of shared variance in the scores. Thus, Hypothesis 1(c) had encouraging support as total PEM empathy, together with each of the individual empathy variables, had significant negative relationships with the CAPI Rigidity scale.

Hypothesis 1(d) predicted that a significant positive relationship would be found between the CAPI Lie scale and the PEM Faking Good scale. The CAPI Lie scale was moderately and positively correlated with the PEM average Faking Good Score (r = .52, p < .001), with 27% of shared variance between the scores. Thus, Hypothesis 1(d) is supported as the CAPI Lie scale had a significant positive relationship with the PEM Faking Good scale.

Concurrent Validity Analyses

Under hypothesis 2(a) it was expected that the PEM would discriminate abuse status between the abusive, distressed and control parent groups. To determine this, a discriminant analysis was conducted with the PEM individual variable scores (that is, attention to signals, attributions, emotional responsiveness, and behavioural responsiveness) as predictor variables and group membership as the dependent variable. Analysis revealed that only one function significantly discriminated between the parent groups (Wilks' λ = .480, $\chi^2_{(8,103)}$ = 72.374, p <.001). The standardised canonical discriminant function coefficients for that function were determined as shown in the following equation:

$D_1 = .76 * Signals + .32 * Behaviour + .21 * Attributions - .08 * Emotion.$

According to the standardised canonical discriminant function coefficients, the PEM variable, Signals, was the predominant predictor in the function, followed by Behaviour and then Attributions. Emotion contributed relatively little unique predictability to the function after controlling for the contributions of the other variables. Furthermore, the pooled within-groups correlations between the discriminant function and predictors were all significant ($p < .01$) and positive. These correlations ranged from very strong for Signals (.92) through moderately strong for Attributions (.71) to moderate for Behaviour (.58) and Emotion (.46). Thus, while Emotion appeared to make only a minor independent contribution to the significant function in the company of the other variables, it retained a moderate general relationship with that function.

Overall, the set of discriminant functions correctly classified 66% of participants according to their parent group. Notably, 92% of Abusive parents were classified correctly, while 44% of Distressed and 38% of Control parents were classified according to their actual abuse status. Interestingly, a majority of Control parents (52%) was classified as Distressed. The percentages of parents from each actual group classified into respective predicted groups are presented in Table 4. Therefore, Hypothesis 2.(a) has encouraging support in that that the PEM correctly predicted the abuse status of a majority of participants according to their parent groups, with Abusive parents classified most accurately.

Table 4: Percentage of parents correctly classified by group

Actual Group	n	Predicted Group Membership		
		Control	Distressed	Abusive
Abusive	50	4%	4%	92%
Distressed	32	22%	44%	34%
Control	21	38%	52%	10%

Under hypothesis 2(b) it was expected that the PEM Total score would discriminate between the Abusive, Distressed and Control parent groups more successfully than the CAPI Abuse Scale scores. (Descriptive statistics are presented in Table 5). A general linear model (GLM) was used to conduct an analysis of variance with parent group as the independent grouping factor and the PEM Total score and CAPI Abuse scale scores as dependent measures. Only participants who met Milner's (1986) inclusion criteria for the CAPI Abuse scale score were included in these analyses. The GLM identified significant differences between groups for both the PEM Total score ($F_{(2, 85)}$ = 27.53, p <.001) and the CAPI Abuse scale score ($F_{(2, 85)}$ = 9.40, p <.001). *Post hoc* Scheffe's tests revealed that the mean PEM Total score for the Abusive group (-3.0, ± 3.8; p<.001) was lower than mean scores for both the Distressed group (.9 ± 3.7; p = .006) and the Control group (4.6 ± 3.8; p < .001). Similarly, the CAPI Abuse scale scores were higher for the Abusive group (296.4 ± 92.1; p <.001) than for the Control group (182.4 ± 83.0). However, the CAPI Abuse scale scores for the Distressed group (241.2 ± 107.7) did not differ significantly from either the Control group (p = .125) or the Abusive group (p = .075). Further, the total variance explained between groups (η^2) by the PEM Total scores

was 40%, a figure more than twice the 19% of variance explained by the CAPI Abuse

scores. Thus, Hypothesis 2(b) is supported in that differences in PEM Total scores

discriminated between each of the Abusive, Distressed, and Control parent groups whereas

the CAPI abuse scores differed only between the Control and Abusive parent groups.

Further, the PEM Total scores explained substantially more variance between groups than

the CAPI Abuse scale scores. (Mean CAPI and PEM scores for the entire sample,

including risk-status group means, are provided in Appendix Q: Group and Sample Means

for Computed and Other Variables.)

Table 5: CAPI abuse and PEM total scores for "included" participants (n=86)

	Parent group					
	Abusive		Distressed		Abusive	
Scale	*M*	*SD*	*M*	*SD*	*M*	*SD*
CAPI Abuse	296.4	92.1	241.2	107.7	182.4	83.0
PEM Total	-3.0	3.8	.9	3.7	4.6	3.8

Discussion

The results of the tests of the PEM's validity will be addressed first in relation to

construct validity and then in relation to concurrent validity.

Construct Validity

This study provided an initial assessment of the construct validity of the PEM. As

predicted, the total empathy score demonstrated a negative relationship with the CAPI

Abuse scale score with 21 percent of the shared variance explained. Inverse relationships

were also found between the CAPI Abuse scale and the four empathy variables. The

Signals variable demonstrated the weakest relationship with the CAPI Abuse scale with 15

percent of the shared variance accounted for. The other three empathy variables,

Attributions, Emotion and Behaviour demonstrated moderate level negative relationships

with the CAPI Abuse scale scores.

These results provide encouraging initial support for the PEM's construct validity

in that parental empathy as measured by the PEM was found to be related to child abuse

potential as measured by the CAPI.

The relationship between the empathy variable emotional responsiveness and the

CAPI Abuse scale score was the strongest relationship found in this analysis of the

relationships between the CAPI Abuse scale scores and the individual and overall empathy

variable scores. Dominant components of the CAPI Abuse scale are the subscales that are

directed towards measuring respondents' emotional well-being. For example, personal

distress (Distress subscale) and unhappiness (Unhappiness subscale) directly assess

respondents' emotional well-being, and the CAPI subscales which are designed to assess

relationship difficulties (Problems with Child and Self, Problems with Family, Problems

with Others) also include a strong element of emotional response (e.g., other people have

made my life hard; Milner, 1986). Thus, it is not surprising that the strongest relationship

found in this analysis was between the empathy variable, Emotional responsiveness, and

the CAPI Abuse scale. This finding also suggests that the more global emotional states

measured by the CAPI are related to the emotional response styles that characterise

parents' responses to their children.

The Rigidity scale, defined by Milner (1986) as a representation of attitudes specifically towards children, is the most cognitive scale of the CAPI Abuse scale and the one most specifically focussed on children. Given that the proposed model of parental empathy includes only one emotionally-based factor, it was predicted that the empathy variables, individually and in total, would relate more strongly to the Rigidity scale than the to the overall Abuse scale.

Consistent with expectations, the total empathy score was found to have a significant moderate level relationship with the Rigidity scale of the CAPI Abuse scale with 28 percent of the shared variance explained. As predicted, this is a numerically stronger relationship than that found with the CAPI Abuse scale overall. Thus, a deficit of parental empathy would appear to have a stronger relationship with rigid attitudes towards children than with general unhappiness, distress, and general difficulties in relationships.

Examination of the empathy variable subscales indicated that the relationship found between Rigidity and Emotion, although significant, was relatively weak (14 percent of the shared variance explained). Rigid attitudes towards children were also found to have a comparatively weak negative relationship with empathic behaviours, sharing only 17 percent of the variance. In comparison, both attributions made about the children's behaviours and attention to the child's signals demonstrated a moderate negative relationships with the Rigidity scale with 32 percent and 34 percent of the respective shared variance accounted for. These results suggest that, although rigidity of attitudes is related to all of the empathic processes, this variable has stronger relationships with the cognitive aspects of the empathy process. Thus, parents who are more rigid in their

attitudes and thinking about children are likely to be particularly insensitive in picking up their children's emotional signals and, when they do, are more likely to generate negative and distorted attributions about their children.

Under the fourth hypothesis in the assessment of the PEM's construct validity, a significant positive relationship was expected between the CAPI Lie scale and the PEM Faking Good scale. This prediction was met with a positive moderate level relationship established between the PEM Faking Good scale score and the CAPI Lie scale score with a shared variance of 27 percent.

Further, the size of this relationship is numerically larger than any of those reported in Milner's original validation studies for the Lie scale including the MMPI Lie scale (19 percent of the variance explained) and the Marlowe-Crowne Social Desirability scale (10 percent of the variance explained; Robertson & Milner, 1983, cited in Milner, 1986). Milner (1986, p. 84) explains these relatively disappointing findings on the basis that "the data indicate the CAPI Lie scale measures to a greater extent rigidity and naivete than social desirability". Given that the PEM Faking Good scale was specifically designed to assess socially desirable biased responding in the domain of child maltreatment, Milner's explanation may also account for the merely moderate relationship found between the PEM Faking Good scale and the CAPI Lie scale.

Given the likelihood that maltreating parents will attempt to present their parenting in a more socially acceptable light, assessment for social desirability is a particularly relevant attribute to incorporate in any instrument that purports to have utility in this field. It may be, therefore, that the PEM's Faking Good scale will provide more useful

information than the Lie scale of the CAPI. Further empirical scrutiny of this possibility is nevertheless called for.

In terms of future studies, a comparison between the PEM's Faking Good scale, the MMPI Lie and the Marlowe-Crowne Social Desirability Scales may prove illuminating. An additional comparison between a sample of participants who have been instructed to Fake Good (that is, distort their responses in a socially desirable manner) and a sample who have been asked to respond honestly may also be useful. Finally an examination of the individual response rates to the individual Faking Good items may also reveal a profile of responses that are indicative of distorted responses.

Discriminant analysis revealed that all four of the individual empathy variables contributed to the discriminant equation for group status and together these variables enabled accurate classification of 66 percent of participants across the parent groups. More importantly, 92 percent of the abusive parents were correctly classified. As such, these results indicate that the PEM has very good sensitivity in terms of its capacity to identify abusive parents.

The source of the majority of the PEM's error appeared to be based in the classification of the Control and Distressed groups. Fifty-two percent of the Control group were incorrectly classified as distressed and 22 percent of the Distressed group were incorrectly classified as controls. One explanation for the discrepancies in group classification may be that the participants in the Control and Distressed parent groups were not truly disparate.

The essential distinction in group classification between the Controls and the Distressed parents was that the Distressed parents had sought help with their parenting skills from Family Support Services. Demographic variables such as poverty (minimal income and education), single versus co-parenting status, and reported level of stress were matched across all parent groups. It would seem possible that this similarity in resource deficits between groups may have resulted in too close a match between the Control group and the Distressed groups of parents.

One tenth of the Control parent group and one third of the Distressed parent group were incorrectly classified as Abusive by the discriminate function analysis based on the PEM empathy variables. At first glance this result is of concern, given the potential consequences of false positives in the clinical usage of the instrument. However, an alternative to the 'false positive' explanation is that in fact there were child maltreatment issues within these two parent groups that had not been detected by child protection agencies. Previous research has demonstrated that some cases of child maltreatment typically escape the nets of child protection agencies (e.g., Barnett, et al., 1991; Daro, 1988; Egeland, et al., 1983; Hart & Brassard, 1991; McGee & Wolfe, 1991b). As such, non-registration with DOCS may not be a precise assessment of risk status. This is particularly true of psychological maltreatment which has been shown to be the least likely abuse type to be brought to the awareness of Child Protection Agencies (Erickson & Egeland, 1987; Oates, 1996; Tomison & Tucci, 1997).

Of note is that the prevalence of psychological maltreatment has been estimated to be approximately 25 percent of all children (Fortin & Chamberland, 1995). As such, the

incidence of impoverished empathy in the parents in the Distressed and Control groups may reflect the normative distribution of psychological maltreatment within the community. In short, it may be that the Control and Distressed parents 'incorrectly' classified as abusive may have otherwise unrecognised maltreatment profiles. This is likely to be especially true for parents who have acknowledged difficulties in their parenting relationships (that is, Distressed parents). Thus, a consideration for further studies is an assessment of maltreatment status separate to that of child protection agency registration. That assessment should also include measures to screen for psychological abuse as well as other abuse types.

The discriminant analysis function revealed that the parental empathy variable Signals is a strong discriminator between abuse groups. The potential importance of this variable has been stressed theoretically within the Information Processing Model of parenting proposed by (Milner, 1993) and Crittenden (1993). Signals nevertheless was found to have only a weak association with the CAPI Abuse scale. As such, attention to the children's signals may well represent a relatively overlooked assessment variable that can provide meaningful information about the risk of child maltreatment.

The second aspect of the analysis of the concurrent validity was the assessment of the PEM's discriminatory power in comparison with the CAPI. It was predicted that if, as argued, parental empathy was the core discriminator between abusive/neglectful and 'good-enough' parenting then the PEM should prove to be the more powerful discriminator of the two assessment tools. This prediction was substantially supported in that the total parental empathy score explained twice the variance between the groups than that

explained by the CAPI Abuse scale. Add tionally, the PEM Total scores differed across all groups in the expected pattern, whereas the CAPI Abuse scale scores differed only between the Control and Abusive groups. This apparent failure of the CAPI to differentiate the intermediate (Distressed) group from either of the other groups suggests that it has less discriminating power in the central region of the abuse scale. In contrast, the PEM is able to discriminate groups at the intermediate levels of child maltreatment risk.

It is possible that the PEM's stronger concurrent capability may well be due to the inclusion in the abuse sample of both physically abusive and neglectful parents. As stated earlier, the CAPI is primarily a predictor of *physical* abuse risk, although it has also been used, with some success, to predict neglecting and psychologically abusive parents (Milner, 1994). If this explanation is val d, the PEM's stronger capability to predict group membership nevertheless provides support that a deficit in parental empathy is the distinguishing issue in all forms of child maltreatment.

Taken collectively, the results of the investigation of the PEM's construct and concurrent validity provides encouraging initial support for the utility of the PEM in the clinical and empirical assessment of child maltreatment potential. Further, the success of the PEM provides support for the model of parental empathy proposed in the present study and the central premise that parental empathy, as defined, is the core issue which discriminates between maltreating and good-enough parenting. In the next section of this thesis, the model of parental empathy itself will be tested by path analysis.

CHAPTER 8: STUDY OF THE PARENTAL EMPATHY MODEL

The ability of parents to empathise with their children has recently attracted attention as the probable core issue in differentiating good-enough from abusive parenting (e.g., Feshbach, 1995; Jones, 1995; Rosenstein, 1995; Wiehe, 1997). However, a major impediment to utilising parental empathy in the risk assessment of child abuse is the lack of an operationally-based model of parental empathy.

Compounding the confusion in defining parental empathy is the semantic disagreement concerning the concept of empathy itself. These difficulties have resulted in a number of measures of empathy which have been found to have limited relationships with each other (Riggio, et al., 1989). Similarly, the small number of empirical studies that attempted to examine the relationship between parental empathy and child maltreatment have used a range of different instruments based on different constructions of parental empathy. The results of these empirical studies have been largely disappointing. It is argued that the semantic confusion surrounding the concept of parental empathy has proved a major contributor to these disappointing results.

In this thesis a four-stage, operationally based model of parental empathy has been developed from reviews of both the empathy and the child maltreatment literature (see Chapter 2: Literature Review). The four stages that form the basis of the model are: attention to the other's signals (Signals); accuracy of attributions made regarding the other's state (Attributions); other orientated emotional responsivity (Emotion Overall); and helpful behavioural responsivity (Behaviour Overall). The model is premised on the concept that empathic parenting is dependent on the successful completion of each stage in

turn. Thus, a failure of the process at any point of the model will result in the immediate termination of empathic parental responding beyond that point.

Working independently from social information processing literature base, researchers have suggested a model to explain the processes underlying successful versus neglectful parenting (Crittenden, 1993) and functional versus physically abusive parenting (Milner, 1993). The Social Information Processing Model bears considerable resemblance to the model of parental empathy presented in the current study. It also incorporates four stages: perception of the child's signal; interpretation of the child's signal; selection of a response to the child; and, implementation of a behavioural response.

The Social Information Processing Model's first stage, involving perception of the child's signal clearly equates with the Parental Empathy Model's attention to the child's signal, and the second stage involving interpretation of those signals is equivalent to the empathy model's stage of attributions. The Social Information Processing Model's third and fourth stages (selection of a response to the child and implementation of a behavioural response) are merged in the fourth stage of the parental empathy model and described as behavioural responsiveness. Thus, as noted in Chapter 2, the major distinguishing feature between the two models is the inclusion of emotional responsivity in the empathy model.

Unlike other models of empathy (e.g., Feshbach, 1989; 1995), vicarious self-orientated emotional responses or emotional contagion are not considered empathic in the Parental Empathy Model. Rather, consistent with Batson et al. (1997), emotional responses are judged as empathic if they are other-orientated, positive and altruistic.

The four stage parental empathy model has been operationalised into an assessment tool, the Parental Empathy Measure (PEM). The assessment of the PEM's construct and concurrent validity provided initial support for the importance of the purported empathy variables in the assessment of risk of child maltreatment. All four of the proposed empathy variables were found to have significant, negative relationships with child abuse potential as measured by the Child Abuse Potential Inventory (Milner, 1986). Further, all four variables contributed to a discrimination between abusive, distressed, and control group parents. Notably, 92 percent of the abusive parents were correctly classified using the four variables with a 66 percent rate of correct classification of the parental groups overall.

Although encouraging, these results by themselves do not affirm the nature of the putative relationships between the variables making up the Parental Empathy Model. Thus, it is not known whether the supposed mediational relationships exist between the four variables or whether the relationships found between the individual variables and child abuse potential and abuse status are independent.

Of particular interest is whether emotional responsivity mediates the relationship between attributions and behavioural responsivity as purported in the Parental Empathy Model, or alternatively remains independent as suggested by the Social Information Processing Model. Although not formally integrated within the Social Information Processing Model, both Crittenden (1993) and Milner (1993) suggest that affect (e.g., depression, stress) may play a role in impeding parents perception of their children's emotional signals. As such, the potential for emotional responsivity to act as an antecedent variable is also of interest.

In order to clarify these questions path analysis and comparison of both the Social

Information Processing Model and the Parental Empathy Model were undertaken.

Hypothesis

Defined in operational terms, the following hypothesis was formulated as a test of

the nature of the relationships between the parental empathy variables:

Path analysis demonstrates a mediational pathway between the four empathy

variables, originating with attention to signals and progressing in the expected direction

through attributions, emotional responsivity to behavioural responsivity.

Statistical Method

Three path analyses were conducted to test putative relationships between

empathy variables. An initial path analysis assessed the causal pathway originating with

attention to signals, passing to attributions and, finally, to behaviour responsivity. This

pathway was consistent with relationships predicted by the Social Information Processing

Model (Crittenden, 1993; Milner, 1993). A second path analysis was conducted with the

inclusion of Emotional Responsivity between attributions and behaviour responsivity, as

predicted by the Parental Empathy Model, to examine the hypothesised mediational role

of emotion. A third path analysis was conducted with emotional responsivity as the initial

(exogenous) variable, passing to attention to signals, attributions and finally behaviour

responsivity. This final model examined the possibility that emotion may impede parents'

sensitivity to their children's emotional signals as predicted by Crittenden (1993).

All path analyses were conducted using AMOS software (Arbuckle, 1994).

Results

Pearson product moment intercorrelations for all variables in the path analyses are presented in Table 6 below. Intercorrelations between variables ranged from moderate ($r = $ .45 for Signals with Emotions) to strong ($r = $ .82 for Behaviour with Emotion).

Table 6: Zero-order correlations for variables in the path analyses

Variable	1	2	3	4
1. Signals	--			
2. Attributions	.68***	--		
3. Emotion	.45**	.60***	--	
4. Behaviour	.52**	.69***	.82***	--

*** $p<.001$

The initial path analysis considered the causal pathway originating with Signals, progressing to Attributions and finally to Behaviour (see summary in Figure 2). The overall fit of this model was good ($\chi^2_{(1,103)} = $ .92; $p = $ .338), with both of the hypothesised causal links significant. Signals was a significant predictor of Attributions ($\beta = $ .68, $p < $ .01) and Attributions was a significant predictor of Behaviour ($\beta = $ .69, $p < $ .01). Overall this initial three-stage model accounted for some 48% of the variance in behaviour, with a Bentler-Bonnet index (NFI) of .993.

$$\chi^2_{(1,103)} = .918; \ p = .338$$
Bentler-Bonnet NFI = .993
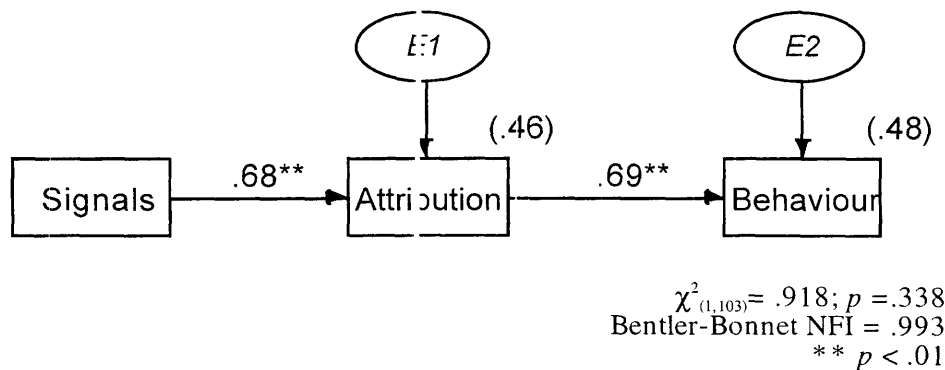$$** \ p < .01$$

Figure 2: Three-stage Social Information Processing Model with standardised path coefficients (explained variance in parentheses)

The second path analysis considered the likely mediational role of Emotion between Attributions and Behaviour (see summary in Figure 3). The overall fit of this four-stage model was good $(\chi^2_{(2,103)} = .94; \ p = .625)$, with all of the hypothesised causal links significant. Signals remained a significant predictor of Attributions $(\beta = .68, \ p < .01)$, but the direct prediction of Behaviour by Attributions $(\beta = .31, \ p < .01)$ was notably reduced from that identified in the initial (Social Information Processing) model. The standardised regression coefficients along the links that defined the indirect pathway were .60 $(p<.01)$ between Attributions and Emotion, and 63 $(p < .01)$ between Emotion and Behaviour. The approximate predictive strength of this indirect pathway was .38 (that is, the product of the regression weights of the constituent links). Overall, the second model accounted for 73% of the variance in Behaviour, with a Bentler-Bonnet index (NFI) of .996. This was an increase of 25% in the explained variance in Behaviour from that explained in the three-stage model. There was no notable improvement in the Bentler-Bonnet index between models. Thus, Emotion partially mediates the relationship between Attribution and

Behaviour, providing greater predictabili y of Behaviour in the four-stage empathy model

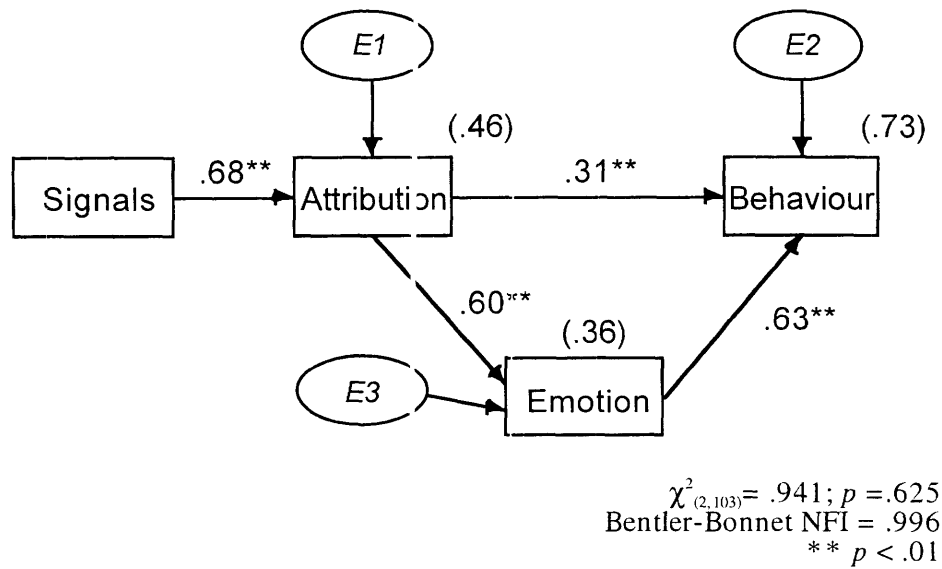than that given in the initial three-stage Social Information Processing Model.

$$\chi^2_{(2,103)} = .941; p = .625$$
Bentler-Bonnet NFI = .996
$$** \ p < .01$$

Figure 3: Four-stage Parental Empathy Model with standardised path coefficients (explained variance in parentheses).

The final path analysis considered emotional responsivity as the initial (exogenous)

variable in a model otherwise similar to the parental empathy model (i.e., then passing to

attention to signals, attributions and finally behaviour responsivity). The overall fit of this

four-stage model was poor ($\chi^2_{(1,103)} = 91\ 013, p < .001$) and the Bentler-Bonnet index (NFI

= .621) was unsatisfactory (Kline, 1998). This model compared unfavourably with the

four-stage parental empathy model in which emotion was defined as a mediator between

attributions and behavioural responsiver ess.

Discussion

Two theoretical models of the underlying processes of parental responding to children were compared: the Social Information Processing Model and the Parental Empathy Model. Despite coming from different perspectives, the two models have substantial similarities with the major distinction being the inclusion of emotional responsivity as a mediator between attributions and behavioural responsiveness in the Parental Empathy Model.

The results of the analyses provided support for both models in that the proposed causal pathway from attention to the child's signals (or perception of the child's signals) to attributions (or interpretations) to behavioural responsivity was strongly supported. However, inclusion of a measure of emotional responsivity into the model notably reduced by more than half the direct predictive relationship between Attributions and Behaviour and increased the overall predictive ability of the model by an additional 25 percent. Thus, the Parental Empathy Model accounted for significantly more variance in parents' behavioural responsiveness to children than did the Social Information Processing Model. A third analysis examined the potential of the variable Emotion to inhibit or enhance parents' sensitivity towards their children' signals as suggested by Crittenden (1993). This alternate model was not upheld by the findings.

The efficacy of the PEM provides strong support for previous findings that emotional responsivity plays a mediational role between attributions and helping behaviour and effectively 'primes' different types of parenting (Betancourt, 1990; Dix, 1991). Additionally, these results, and those from the earlier tests of construct and concurrent

validity, support the argument that empathic emotional responding is better defined as other-orientated positive emotional responses rather than emotional contagion.

Although this finding does provide further support for the contention that emotional responsivity best fits as a mediator between attributions and behaviour, it does not alone negate the possibility that the more extreme emotions found in affective disorders may indeed impact upon parents' ability to attend to their children's emotional cues. Affective disorders such as depression and anxiety were not specifically targeted in the items of this variable. Additionally, emotional responsivity did not prove, in the current analyses, to be a complete mediator between attributions and behavioural responsiveness.

Intuitively, it seems likely that emotion plays a dual role in eliciting empathic versus non-empathic parenting responses. As argued by Crittenden (1993), such pervasive and profound distortions of affect as evident in depression, anxiety and mania seem likely to abort the process of responding to the child's signals by precluding from awareness the signals sent. Alternatively, if the child's signals are brought to awareness, affective responses elicited by the nature of the attributions made about the child's behaviour will influence the parent's overt behavioural responses. This possible duality of the role of emotion in parenting responsiveness would clearly benefit from further empirical study. Such a study should incorporate the influence of both affective disorders and the more 'mainstream' emotional states.

In summary, path analysis of the four purported empathy variables established strong support for the model of parental empathy proposed in the present study. Of particular note was the finding that emotional responsivity mediated the existing

relationship between attributions about child behaviour and behavioural responsivity. The definition of appropriate emotional responsivity as other-orientated emotions of warmth, concern, compassion and sympathy as opposed to emotional contagion was also justified by this analysis.